UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2015

OR

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 001-37465

Seres Therapeutics, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**27-4326290**
(State or Other Jurisdiction of Incorporation or Organization)	**(IRS Employer Identification No.)**
215 First Street Cambridge, Massachusetts	**02142**
(Address of Principal Executive Offices)	**(Zip Code)**

(617) 945-9626
(Registrant's Telephone Number, Including Area Code)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. **Yes** o **No** ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. **Yes** o **No** ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. **Yes** ☒ **No** o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). **Yes** ☒ **No** o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	o	Accelerated filer	o
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	Smaller reporting company	o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). **Yes** o **No** ☒

The aggregate market value of common stock held by non-affiliates of the registrant based on the closing price of the registrant's common stock as reported on the Nasdaq Global Select Market on June 30, 2015, was $422,395,134.

As of March 7, 2016, there were 39,187,017 shares of the registrant's common stock, par value $0.001 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to its 2016 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission are incorporated by reference into Part III of this Annual Report on Form 10-K.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements. All statements other than statements of historical facts contained in this Annual Report on Form 10-K, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing and likelihood of success, plans and objectives of management for future operations and future results of anticipated products, are forward-looking statements. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this Annual Report on Form 10-K are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this report and are subject to a number of risks, uncertainties and assumptions described under the sections in this report titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this report. These forward-looking statements are subject to numerous risks, including, without limitation, the following:

- our status as a development-stage company and our expectation to incur losses in the future;
- our future capital needs and our need to raise additional funds;
- our ability to build a pipeline of product candidates and develop and commercialize drugs;
- our unproven approach to therapeutic intervention;
- our ability to enroll patients in clinical trials, timely and successfully complete those trials and receive necessary regulatory approvals;
- our ability to establish our own manufacturing facilities and to receive or manufacture sufficient quantities of our product candidates;
- our ability to protect and enforce our intellectual property rights;
- federal, state, and foreign regulatory requirements, including FDA regulation of our product candidates;
- our ability to obtain and retain key executives and attract and retain qualified personnel; and
- our ability to successfully manage our growth

PART I

Item 1. Business

Overview

We are a microbiome therapeutics platform company developing a novel class of biological drugs, which we refer to as Ecobiotic microbiome therapeutics. The human microbiome is an ecology of microorganisms, including bacteria, fungi and viruses, that, when unhealthy, or dysbiotic, can leave the body more susceptible to infections, metabolic disorders, allergies, autoimmune disease, inflammation and other serious conditions. Our drugs are designed to restore health by repairing the function of a dysbiotic microbiome. We are initially focused on implementing our microbiome therapeutics platform to develop Ecobiotic microbiome therapeutics that treat dysbiosis in the colonic microbiome, one of the most diverse microbiomes in the human body. SER-109, our lead product candidate, is designed to prevent further recurrences of *Clostridium difficile* infection, or CDI, a debilitating infection of the colon and, if approved by the U.S. Food and Drug Administration, or FDA, could be a first-in-field drug. In our Phase 1b/2 clinical study of SER-109 in recurrent CDI patients, 97% of patients achieved a clinical cure, which we defined as the absence of CDI requiring antibiotic treatment during the eight-week period after SER-109 dosing; 87 % of patients met the predefined endpoint of preventing recurrent CDI within eight weeks following administration of SER-109.

SER-109 has been granted Breakthrough Therapy designation by the FDA for the treatment of recurrent CDI. Breakthrough Therapy designation is intended to expedite the development and review of drugs or biologics that treat serious or life-threatening diseases or conditions and where preliminary clinical evidence indicates the drug candidate may be a substantial improvement over existing therapies. In addition, SER-109 has received Orphan Drug designation from the FDA for the treatment of recurrent CDI. We initiated a Phase 2 clinical study of SER-109 for recurrent CDI and dosed the first patient in May 2015. We expect initial study results in the middle of 2016.

The human microbiome is one of the richest and most diverse ecosystems on earth, with a population of more than 100 trillion microorganisms that live in our intestines, mouth, skin and elsewhere in the body. In a healthy, symbiotic state the colonic microbiome plays an important role in human health, helping the body digest food, resist pathogens, regulate the metabolic systems, develop and regulate the immune system and synthesize essential nutrients and vitamins. However, the colonic microbiome may change in composition for a variety of reasons, including in response to long-term or high-dose antibiotics and following gastrointestinal infection. These changes in composition result in the loss of key microbes, resulting in a state of dysbiosis. Dysbiosis of the colonic microbiome is associated with a wide range of serious disease and infections, such as gastrointestinal infection and inflammatory and metabolic diseases.

While the study of the human microbiome is not new, the scientific community's understanding of the microbiome, and the colonic microbiome in particular, has been significantly advanced through metagenomics, which has enabled the broader understanding of the human microbiome at the organismal, functional and community level. Scientific research has correlated dysbiosis in the colonic microbiome with numerous diseases and conditions in humans and in animal models, including: infections, metabolic disorders, allergies, autoimmune disease, inflammation and other non- specific conditions, such as inflammatory bowel disease, or IBD. Information regarding the impact of the colonic microbiome on various disease states continues to grow rapidly.

We are developing a new approach to treating disease by restoring a dysbiotic colonic microbiome to a healthy state using our Ecobiotic microbiome therapeutics. Our approach is premised on the hypothesis that the proximal cause of many diseases is a dysbiosis in the natural state of the colonic microbiome that perpetuates the conditions that allow disease to take hold and flourish. We believe that the restoration of a dysbiotic colonic microbiome using rationally designed therapeutics represents a paradigm shift in the approach to treating the underlying disease. Our Ecobiotic microbiome therapeutics, which are derived from our microbiome therapeutics platform, are rationally designed ecological compositions, consisting of discrete combinations of beneficial microorganisms with targeted functional properties that provide the ability to re-establish keystone features of a functional microbiome in settings of disease. There are currently no FDA-approved therapeutics that are designed to restore the microbiome to a healthy state.

Our approach to discovery and design is based on an iterative bedside-to-bench-to-bedside drug discovery strategy that begins with data on the human microbiome that we gather from clinical studies. From these data, we identify the ecological differences between a healthy and a diseased microbiome, which we then use to rationally design potential Ecobiotic microbiome therapeutics. After further in-lab testing, selected Ecobiotic microbiome therapeutic candidates are moved back into the clinic for testing with humans. We apply a comparative genomic systems biology framework that leverages proprietary computation, microbiology and screening capabilities to design lead candidates targeted at these ecological deficiencies. We are able to apply this framework and experience to existing clinical data sets, as well as to the proprietary clinical data set we have generated through our SER-109 clinical trials. We believe we can utilize our knowledge and data to design Ecobiotic microbiome therapeutics to treat various medical

conditions, such as non-*Clostridium difficile* infection and inflammatory and metabolic diseases. We also have advanced capabilities in the fermentation of colonic bacteria and the formulation of vegetative and spore forms of bacteria into therapeutics. We believe that the combination of experience, proprietary data and proprietary know-how that comprise our microbiome therapeutics platform provides us with a competitive advantage in the design and development of microbiome therapeutics. Further, our approach and platform, which enable the rational design, testing, optimization, formulation and manufacturing of Ecobiotic microbiome therapeutics, provide a framework that we believe can significantly reduce the time typically required to advance therapeutics to the clinic.

Using our microbiome therapeutics platform, we are developing our lead clinical product candidate, SER-109, which is designed to durably repair dysbiosis in the colonic microbiome in the setting of recurrent CDI. CDI is most often caused by the use of broad spectrum antibiotics which induce dysbiosis of the microbiome causing susceptibility to infection by *Clostridium difficile*, or *C. difficile*, a spore forming bacterium. CDI leads to severe and persistent diarrhea in infected individuals, but can also lead to more severe outcomes, such as inflammation of the colon, toxic megacolon and death. The U.S. Centers for Disease Control, or CDC, has identified CDI as one of the top three most urgent antibiotic-resistant bacterial threats in the United States. It is the most common cause of hospital acquired infection in the United States and has overtaken methicillin-resistant *Staphylococcus aureus*, or MRSA. CDI is responsible for the deaths of approximately 29,000 Americans each year. We estimate the incidence of primary CDI in the United States is between 640,000 and 820,000 patients per year. While the epidemiological data are varied outside the United States, we believe that, due to the widespread use of antibiotics, CDI is a growing global disease. The standard of care for CDI is to treat with antibiotics. In many cases, antibiotic treatments may resolve the acute infection caused by *C. difficile*. However, these antibiotic treatments kill bacteria broadly, inducing a dysbiosis of the microbiome and potentially making patients more susceptible to a recurrence of CDI. For those patients who experience a recurrence of their CDI, we believe it is this dysbiosis of the microbiome, not the presence of *C. difficile*, which is the proximal cause of disease. Research suggests that the risk of recurrence is approximately 25% after the primary CDI, 40% after a first recurrence and greater than 60% for those experiencing two or more recurrences. In addition, a recent randomized trial comparing two antibiotics for the treatment of primary CDI indicated that 8% of patients receiving fidaxomicin and 9% of patients receiving vancomycin did not respond to these antibiotics. We estimate that the addressable population of patients in the United States with recurrent CDI, defined as patients who have experienced at least three occurrences of CDI in the past nine months, is between 85,000 and 110,000 patients per year.

SER-109 is a bacterial spore ecology consisting of an average of approximately 50 bacterial species derived from healthy donors' fecal matter. SER-109 is designed to prevent further recurrences of CDI in patients suffering from recurrent CDI by restoring the dysbiotic microbiome to a state of health. In our recently completed open label Phase 1b/2 clinical study, results demonstrated that 87 percent of patients (26 of 30) met the predefined endpoint of preventing recurrent CDI within eight weeks following administration of SER-109. 97 percent of patients (29 of 30), achieved a clinical cure, which we defined as the absence of CDI requiring antibiotic treatment during the eight-week period after SER-109 dosing. The study demonstrated that SER-109 is well-tolerated and has a favorable safety profile with no serious adverse events considered by the investigators to be attributable to SER-109 treatment. We also performed an analysis of the microbiome using next-generation sequencing technology and microbiological analysis. These studies demonstrated a re-establishment of keystone organisms and a rapid increase in bacterial diversity, which enable the restoration of the microbiome to a healthy state. SER-109 has been granted both Breakthrough Therapy and Orphan Drug designations by the FDA. We initiated a Phase 2 clinical study of SER-109 for recurrent CDI and dosed the first patient in May 2015. We expect initial study results in the middle of 2016. We have conducted manufacturing process pre-validation studies of SER-109 to support a Phase 3 clinical trial and a potential biologics license application and commercial launch.

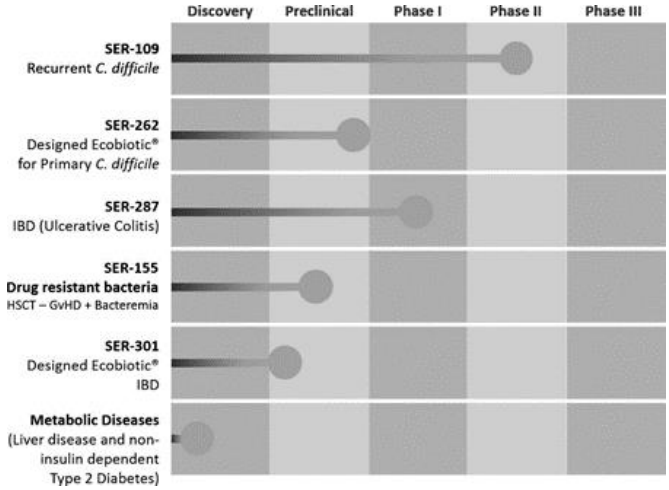
We believe the results of our open label Phase 1b/2 clinical study of SER-109 provide validation of the hypothesis underlying our microbiome therapeutics platform, supporting its further use to develop additional Ecobiotic microbiome therapeutics. Using the data we obtained from the SER-109 clinical trial, we are developing SER-262 as an Ecobiotic microbiome therapeutic designed to be used following antibiotic treatment of primary CDI to prevent the initial recurrence of CDI. SER-262 consists of bacteria that are a subset of the bacterial ecology comprising SER-109. Unlike SER-109, SER-262 strains are clonally isolated and produced in fermenters and do not require sourcing raw materials from human donations. There are several advantages to using a synthetic approach to developing microbiome therapeutics. Synthetically derived product candidates can be scaled up to meet global demand in a reliable reproducible manner, with well-defined characteristics. Based on our metagenomics expertise, proprietary in silico algorithms, world-leading, proprietary bacterial library, and field-leading manufacturing capabilities, we believe we can design synthetically produced microbiome therapeutic candidates for specific target indications. Importantly, our unique capabilities provide Seres with a significant competitive advantage in developing synthetically produced microbiome therapies. Pre-clinical studies of SER-262 have demonstrated efficacy in preventing the initial recurrence of CDI in mouse and hamster models. We intend to initiate clinical studies of SER-262 in patients with primary CDI to prevent recurrence in the middle of 2016.

In addition to our ongoing SER-109 clinical trial, we initiated our Phase 1b study for our inflammatory bowel disease, or IBD, drug candidate, SER-287, in December 2015 and are enrolling subjects with active mild to moderate ulcerative colitis to evaluate the

safety and efficacy of SER-287 added to standard of care treatment. The randomized, placebo-controlled multiple dose Phase 1b study of SER-287 is expected to enroll up to 55 subjects with active mild-to-moderate UC who are failing current therapies. The primary endpoint of the study will evaluate the change in the microbiome resulting from SER-287 treatment. The study will also evaluate clinical response, mucosal healing, as well as metabolomic, immunological and safety findings. The clinical development of SER-287 to treat UC is supported by preclinical studies in multiple animal models of colitis that provide evidence that SER-287 administration results in reduced pathology. Published clinical reports furthermore suggest that modulation of the microbiome through repetitive fecal microbiota transplants may lead to meaningful clinical response in certain UC patients.

In addition to our CDI and IBD product candidates, we are utilizing our microbiome therapeutics platform to develop SER-155 for the prevention of transplant-related mortality (due to infection and graft versus host disease, or, GvHD) in allogeneic hematopoietic stem cell transplant, or allo-HSCT, recipients. Published clinical evidence shows that allo-HSCT patients with reduced microbiome diversity due to antibiotic exposure are far more likely to die due to infection or GvHD (Taur et al., Blood, 2015). Notably, the SER-109 Phase 1b/2 study results demonstrated the elimination of drug-resistant organisms and other pathobiont species from a patient's gastrointestinal tract. We are also researching Ecobiotic microbiome therapeutics for the treatment of metabolic diseases, such as early-stage, non-insulin dependent diabetes, non-alcoholic steatohepatitis (NASH), obesity and metabolic syndrome. Research in these indications is focused on developing Ecobiotic drugs that address specific functional defects in the microbiome, including the specific metabolic products made by the microbes. We believe this approach may enable pursuit of a range of disorders including various forms of liver disease and rare genetic diseases of metabolism. The role of the microbiome in immuno-oncology therapies has also become apparent with recent important publications in humans and animal models (Dublin K. et al., Nature, 2016; Vetizou M. et al., Science 2015; Sivan A. et al., Science 2015) and we are applying our platform here as well.

The following chart summarizes our current product pipeline:



We have assembled a world class group of scientists, clinicians, directors and investors, who have established our leadership in the field of microbiome therapeutics. We were co-founded by Drs. Noubar Afeyan, David Berry and Geoffrey von Maltzahn of Flagship VentureLabs, the innovation foundry of Flagship Ventures, which has founded over 25 life sciences companies. Through Flagship VentureLabs' contribution of foundational scientific concepts and intellectual property, assembly of our management team and critical early-stage support, we launched as the first company focused on the ecological nature of the microbiome. Led by Dr. Roger Pomerantz, our Chairman, President and Chief Executive Officer, our experienced management team possesses core capabilities in microbiome therapeutics, infectious disease, drug development, commercialization, chemistry, manufacturing and controls, or CMC, public company management and finance. Dr. Pomerantz, an infectious disease physician-scientist, has extensive experience in infectious disease drug development and commercialization, licensing and acquisitions gained over a 10-year career in senior executive positions at Merck & Co, Johnson & Johnson and Tibotec Pharmaceuticals. Dr. Pomerantz led the development and commercialization of eight FDA-approved infectious disease drugs in his career. Collectively, our management team has successfully developed 18 approved pharmaceutical drugs in infectious disease and other indications. Our management team has extensive

experience in microbial ecology, microbiology and live biologicals, with over 25 years studying the microbiome and over 60 published papers on the science of the microbiome. Additionally, our team has extensive experience in building out commercial capabilities in specialty diseases and has a track record for success in launching vaccine products, which have analogous manufacturing processes to that of Ecobiotic microbiome therapeutics.

In January 2016 we entered into a Collaboration and License Agreement, or the License Agreement, with Nestec Ltd., or NHS, for the development and commercialization of certain of our product candidates in development for the treatment and management of CDI and IBD, including ulcerative colitis and Crohn's disease. The License Agreement will support the development of our portfolio of products for CDI and IBD in markets outside of the United States and Canada, or the Licensed Territory, and is expected to provide substantial financial support for our ongoing worldwide research and development. We have retained full commercial rights to our entire portfolio of product candidates with respect to the United States and Canada, where we plan to build our own commercial organization.

Under the License Agreement, we granted to NHS an exclusive, royalty-bearing license to develop and commercialize, in the Licensed Territory, certain products based on our microbiome technology that are being developed for the treatment of CDI and IBD, including SER-109, SER-262, SER-287 and SER-301, or, collectively, the NHS Collaboration Products. Upon mutual agreement, one or more other products based on our microbiome technology for CDI or IBD may be added to the License Agreement in lieu of or in addition to the then-existing NHS Collaboration Products. NHS' exclusive license in the Licensed Territory to develop and commercialize NHS Collaboration Products extends to any indications for which the parties agree to develop such products. We also granted to NHS a non-exclusive license to export, develop and make NHS Collaboration Products in the licensed fields worldwide solely for commercialization in the licensed fields and in the Licensed Territory. Additionally, the rights to develop and commercialize a given Collaboration Product in certain non-EU countries within the Licensed Territory may revert to us if NHS either elects not to pursue commercialization of such Collaboration Product in such country, or fails to meet certain agreed upon milestones for commercialization of such Collaboration Product in such country. If the licensed rights in any country revert to us in this way, then we would pay to NHS a royalty in the mid-single digits on net sales of such Collaboration Product in such country.

The License Agreement sets forth our and NHS' respective obligations for development, commercialization, regulatory and manufacturing and supply activities for the NHS Collaboration Products with respect to the licensed fields and the Licensed Territory. Under the License Agreement, our and NHS' development activities will be governed by global and regional development plans, including the conduct of additional clinical studies. We agreed to manufacture and supply NHS Collaboration Products to support development and commercialization of NHS Collaboration Products in the licensed fields and in the Licensed Territory. We also agreed to use diligent efforts to develop NHS Collaboration Products under a global development plan and to obtain approval for such NHS Collaboration Products in the European Union, or EU.

In exchange for the license, NHS is obligated to pay the Company an upfront cash payment of $120 million, which the Company received in February 2016. NHS has also agreed to pay the Company tiered royalties, at percentages ranging from the high single digits to high teens, of net sales of NHS Collaboration Products in the Licensed Territory. Additionally, NHS has agreed to pay the Company up to $660 million for the achievement of certain development and regulatory milestones and up to an aggregate of $1.125 billion for the achievement of certain commercial milestones related to the sales of NHS Collaboration Products. We expect to receive a total of $30 million in milestone payments in 2016 associated with the planned initiation of a Phase 1b study for SER-262 in CDI and the anticipated initiation of the Phase 3 clinical trial for SER-109 in CDI.

For the development of NHS Collaboration Products for IBD under a global development plan, we are obligated to pay the costs of clinical trials of such products up to and including Phase 2 clinical trials, and 67% of the costs for Phase 3 and other clinical trials of such products, with NHS bearing the remaining 33% of such costs. For other clinical development of NHS Collaboration Products for IBD, we will pay the costs of such activities to support approval in the United States and Canada, and NHS will bear the cost of such activities to support approval of NHS Collaboration Products in the Licensed Territory.

With respect to development of NHS Collaboration Products for CDI under a global development plan, we agreed to pay all costs of an ongoing Phase 2 clinical trial for SER-109 and of Phase 3 clinical trials for SER-109. We agreed to bear all costs of conducting any Phase 1 or Phase 2 clinical trials under a global development plan for NHS Collaboration Products other than SER-109 for CDI. We agreed to pay 67% and NHS agreed to pay 33% of other costs of Phase 3 clinical trials conducted for NHS Collaboration Products other than SER-109 for CDI under a global development plan. For other clinical development of NHS Collaboration Products for CDI, we agreed to pay costs of such development activities to support approval in the United States and Canada, and NHS agreed to bear the cost of such activities to support approval of NHS Collaboration Products in the Licensed Territory.

The License Agreement continues in effect until terminated by either us or NHS on the following bases: (i) NHS may terminate the License Agreement in the event of serious safety issues related to any of the NHS Collaboration Products; (ii) we may terminate the License Agreement if NHS challenges the validity or enforceability of any of our licensed patents; and (iii) either we or NHS may terminate the License Agreement in the event of the other party's uncured material breach or insolvency. Upon termination of the License Agreement, all licenses granted to NHS by us will terminate, and all rights in and to the NHS Collaboration Products in the Licensed Territory will revert to us. If we commit a material breach of the License Agreement, NHS may elect not to terminate the License Agreement but instead apply specified adjustments to its payment obligations and other terms and conditions of the License Agreement.

The License Agreement contains customary representations and warranties, intellectual property protection provisions, certain indemnification rights in favor of each party and customary confidentiality provisions and limitations of liability.

Our Strategy

Our goal is to become the leading biopharmaceutical company developing and commercializing microbiome therapeutics to address significant unmet medical needs. The critical components of our strategy include:

- ***Rapidly advancing the development of our lead product candidate, SER-109, for the prevention of further recurrences of CDI in patients with recurrent CDI.*** SER-109 has been granted both Orphan Drug and Breakthrough Therapy designation by the FDA for the treatment of CDI. Breakthrough Therapy designation provides for intensive guidance from the FDA in an effort to expedite the drug development process. Based on the results from our recently completed Phase 1b/2 clinical study of SER-109, we dosed the first patient in a Phase 2 clinical study in May 2015 in patients with three or more occurrences of CDI within the previous nine months. We expect to enroll 87 patients in a double-blinded and placebo-controlled clinical trial, with patients randomized in a ratio of 2:1 into a SER-109 arm or placebo arm. The primary endpoint of the trial is the absence of CDI recurrence requiring antibiotic treatment during the eight-week follow-up period after dosing. We also plan to follow patients for an additional 16 weeks to document the safety profile of SER-109 compared to placebo. Secondary endpoints include the time to CDI recurrence and the proportion of patients experiencing CDI recurrence at four weeks, 12 weeks and 24 weeks. We also plan to compare changes in the composition of the colonic microbiome from baseline to Week 24 post-treatment using genomic analysis. In addition, subjects that recur in either arm of the study will have the option to enroll in a parallel open label safety study in which patients will receive SER-109. We expect results from the Phase 2 clinical study in the middle of 2016. Following the analysis of the data from our Phase 2 clinical study, we plan to meet with the FDA to present Phase 2 safety and efficacy results and a proposed protocol for the Phase 3 clinical trial. We plan to initiate the Phase 3 clinical trial in the second half of 2016.
- ***Advancing the clinical development of SER-262 to be used following antibiotic treatment of primary CDI to prevent an initial recurrence of CDI.*** We are developing SER-262 as a therapeutic to be used following antibiotic treatment of primary CDI to prevent an initial recurrence of CDI. SER-262 contains a subset of the bacterial ecology comprising SER-109, however, SER-262 is not derived from human stool and, in contrast, is made in bacterial fermenters in a rational *in vitro* design. Pre-clinical studies of SER-262 have demonstrated efficacy similar to SER-109 in mouse and hamster models of CDI. We intend to initiate clinical studies of SER-262 in the middle of 2016.
- ***Continued clinical development of SER-287 for the treatment of IBD, including ulcerative colitis.*** In December of 2015, we initiated a Phase 1b clinical trial evaluating SER-287 in patients with mild-to-moderate ulcerative colitis. The randomized, placebo-controlled multiple dose Phase 1b study of SER-287 is expected to enroll up to 55 subjects with active mild-to-moderate ulcerative colitis who are failing current therapies. The primary endpoint of the study will evaluate the change in the microbiome resulting from SER-287 treatment. The study will also evaluate clinical response, mucosal healing, as well as metabolomic, immunological and safety findings. The clinical development of SER-287 to treat UC is supported by preclinical studies in multiple animal models of colitis that provide evidence that SER-287 administration results in reduced pathology. Published clinical reports furthermore suggest that modulation of the microbiome through repetitive fecal microbiota transplants may lead to meaningful clinical response in certain UC patients.
- ***Developing SER-155 for the treatment of antibiotic resistant bacteria.*** We are designing and developing SER-155, an Ecobiotic microbiome therapeutic candidate for the prevention of transplant-related mortality (due to infection and GvHD) in allogeneic hematopoietic stem cell transplant (HSCT) recipients.
- ***Leveraging our leading microbiome therapeutics platform to develop additional innovative and novel Ecobiotic microbiome therapeutics across a range of serious medical conditions with high unmet need including infectious disease, metabolic disease, inflammatory disease, rare genetic disease, and applications in immuno-oncology.*** We

believe that the combination of experience, proprietary data and proprietary know-how related to the microbiome and of the production of microbial strains provides us a competitive advantage in the design and development of microbiome therapeutics. Our platform enables us to build upon our existing and growing clinical experience to rationally approach the treatment of acute and complex chronic diseases. We intend to leverage this advantage to develop additional innovative Ecobiotic microbiome therapeutics.

- ***Commercializing our Ecobiotic microbiome therapeutics, including SER-109, directly in the United States and Canada and with collaborators outside of North America.*** In January 2016, we announced a strategic collaboration with Nestlé Health Science for microbiome-based *Clostridium difficile* and inflammatory bowel disease therapies in markets outside the United States and Canada. We have retained the worldwide rights for therapies developed outside of these indications. We believe the market for recurrent CDI is sufficiently concentrated to permit us to effectively commercialize SER-109 in the United States with a highly focused and specialized sales force of less than 100 individuals. We intend to leverage the experience gained by commercializing SER-109 in the United States to further build our direct sales force to address the larger patient population to be addressed by SER-262.
- ***Developing manufacturing capabilities sufficient to support commercialization of any approved Ecobiotic microbiome therapeutic candidates.*** If approved by the FDA, we believe SER-109 could be a first-in-field drug, which will require manufacturing capabilities that are distinct from other biologic drugs. We intend to make strategic investments in manufacturing capabilities to help ensure that we maintain control of our know-how and also because we believe these capabilities will be necessary and highly advantageous for the development of future Ecobiotic microbiome therapeutics such as SER-287 and SER-262. Our bioprocess and manufacturing personnel are focused on creating a platform of manufacturing expertise that will set the stage for further advances in the emerging field of microbiome therapeutics.

Understanding the Microbiome and Its Impact on Disease

The human microbiome is one of the richest and most diverse ecosystems on earth with a population of approximately 40 trillion microorganisms that live in our intestines, mouth, skin and elsewhere in the body. These microbiomes have numerous beneficial functions necessary to supporting health, such as digesting food, preventing disease-causing bacteria from invading the body, regulating our immune system and synthesizing essential nutrients and vitamins. Among the various microbiomes in the human body, the colonic microbiome is one of the most diverse microbial communities. At up to 100 billion to one trillion cells per milliliter, it is among the densest microbial ecosystems ever observed. In a healthy, symbiotic state the colonic microbiome enables the body to function normally. However, the colonic microbiome can change in composition, such as in response to long-term or high-dose exposure to antibiotics or following a gastrointestinal infection. As a result, there can be a loss of key microbes that results in a state of dysbiosis. Dysbiosis of the microbiome is associated with a wide range of disease and infections.

Although bacteria are often associated with infection and disease, much of the bacteria that colonize the human body are essential for life. Until recently, few scientific studies existed that focused on the benefits of the bacteria comprising the microbiome. In 2005, the National Institutes of Health funded the Human Microbiome Project, or HMP, which had as one of its goals the characterization of the microbiome with enough specificity to enable the study of variations in the microbiome and their influence on disease.

Historically, researchers studied microbes in patients by isolating pathogens and growing them in culture. This process typically identifies only a limited diversity of microbial species. The HMP used genomic sequencing technologies to analyze 5,000 samples, representing more than 3.5 terabases of genome sequence data, to identify specific genetic signals found only in bacteria. HMP researchers estimate that more than 5,000 unique microbial species occupy the human ecosystem, and these researchers believe they have characterized the normal range of microbial variation in the U.S. population. Importantly, HMP researchers have discovered that different consortia of microbes may accomplish the same metabolic activity, and the presence of those metabolic activities is more important than the exact species of microbe providing the function. Results from the HMP have provided a robust baseline microbiome against which disease states can be compared.

Compared to the baseline data developed by the HMP, numerous scientific studies are emerging in both animals and humans, suggesting that many human diseases can be correlated with dysbiosis of the microbiome. These include infections, such as CDI or vancomycin-resistant *Enterococcus*, or VRE; metabolic disorders, such as early-stage, non-insulin dependent diabetes, obesity and non-alcoholic fatty liver disease; allergies; autoimmune disease; inflammatory diseases, such as ulcerative colitis, Crohn’s disease and pouchitis, and immune-oncology related applications. Examples of some studies include:

- The results of a study published in PLOS Pathogens in 2012 suggested that a mixture of six different bacteria found naturally in the gastrointestinal system of mice, when isolated from stool and reintroduced into the infected mice, was effective at

suppressing CDI (Lawley et al., PLOS Pathogens, 2012). Researchers in the study found that a single treatment of the bacteria was sufficient and that the suppression lasted for months.

- A placebo-controlled, randomized, blinded clinical study published in Gastroenterology in 2015 showed that repetitive fecal microbiota transplant, or FMT, delivered via enema weekly for 6 weeks could induce clinical remissions in patients with active ulcerative colitis (Moayyedi et al., Gastroenterology, 2015) This study used an established measure of colonic mucosal healing to assess the efficacy of FMT compared to placebo, thus demonstrating the role of the microbiome in treating active ulcerative colitis.

- A placebo-controlled, randomized, blinded clinical study published in Gastroenterology in 2012 showed that administration of FMT derived from lean donors to obese subjects with metabolic syndrome could transiently increase insulin sensitivity (Vrieze et al, Gastro, 2012). This study furthermore identified changes in the microbiome of the small intestine that might have caused the effect.

- Two studies in mouse cancer models, both published in Science in 2015, demonstrated that the anti-tumor response to checkpoint inhibitors could be enhanced by altering the microbiome (Velizou et al., Science 2015; Slvan et al., Science 2015). In addition, a prospective study in melanoma patients receiving anti-CTLA4 therapy for their cancer was published in Nature in 2016 and showed that a difference in the microbiome prior to treatment of patients who suffer from anti-CTLA4 induced colitis compared to patients who do not experience colitis (Dubin et al., Nature, 2016). Taken together, these results suggest that microbiome therapies might improve the safety and efficacy of checkpoint inhibitors in immuno-oncology treatments.

- A study published in the Journal of Clinical Investigation in 2015 demonstrated that the microbiome of mice could be engineered to treat hyperammonemia, a clinical consequence of a set of rare genetic diseases known as Urea Cycle Disorders (Shen et al., JCI, 2015). In this preclinical model, gut microbes that lack a functional urease gene were able to alter ammonia balance in the blood, suggesting a new route to novel therapeutics.

There are currently no microbiome therapeutics approved by the FDA. We believe that the ability to develop drugs that are able to modulate the microbiome and return a dysbiotic microbiome to its healthy state presents a significant opportunity to improve human health.

Our Microbiome Therapeutics Platform

We are developing a new approach to restoring health in settings of microbiome dysbiosis by using our microbiome therapeutics platform to develop Ecobiotic microbiome therapeutics. Our microbiome therapeutics platform is premised on the hypothesis that the proximal cause or significant contributor to multifactorial diseases is a dysbiosis of the colonic microbiome. We believe this represents a paradigm shift in approaching the way the underlying disease is defined and can be treated. Our microbiome therapeutics are a novel class of biological drugs designed to treat disease by restoring a dysbiotic microbiome to a state of health. They represent rationally defined ecological compositions, consisting of discrete combinations of beneficial microorganisms with targeted functional properties that provide the ability to re-establish keystone features of a functional microbiome in settings of disease.

Our microbiome therapeutics platform integrates genomic and related data sets, proprietary algorithms and computational analysis, sequencing and screening and clinical insights. This platform allows us to rationally design, test, optimize, formulate and manufacture Ecobiotic microbiome therapeutics. Our microbiome therapeutics platform provides a framework that we believe can significantly reduce the time typically required to advance therapeutics to the clinic. The following diagram depicts the steps in our fully end-to-end microbiome therapeutics platform:

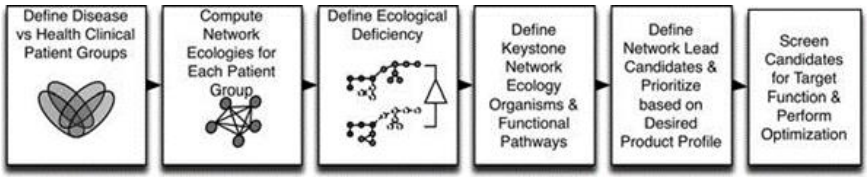
Clinical Trials and Cohort Studies

Our discovery process begins with human data derived from clinical trials and cohort studies, which we use as a basis for designing our Ecobiotic microbiome therapeutics. This allows us to compare the colonic microbiome of healthy normal individuals to those in a dysbiotic state, revealing the ecological and functional signatures of microbiome differences that we target using our Ecobiotic microbiome therapeutics. Additionally, our experience with SER-109 serves as a critical dataset for humans, instructing us on how the introduction of certain keystone microbes can facilitate and augment the restoration of a dysbiotic colonic microbiome for other indications. Using these proprietary insights and tools we can evaluate emerging data sets that link a change in the microbiome

with various diseases and define therapeutic lead candidates.. By using our genomic data sets and our proprietary tools combined with our experience with SER-109, we integrate clinical results into bench research to design our Ecobiotic microbiome therapeutics.

Ecobiotic Candidate Design

We have developed a candidate design program to assist us in identifying the keystone structural and functional elements of healthy microbiomes, the deficiencies present in disease states and the functional profile of a microbial ecological network that can return the microbiome to a healthy state. The following diagram depicts the steps in our candidate design program:



Our candidate design program applies computational comparative genomics and systems biology methods to analyze existing clinical data sets, such as those derived from the SER-109 Phase 1b/2 clinical study, to elucidate the structure and function of a healthy microbiome relative to a microbiome in a disease state. The structure is defined in terms of the organisms that comprise the ecology of the microbiome while the function is defined in terms of the genes and metabolic pathways inherent to the organisms that comprise that ecology. Structure and functional properties of a microbiome are determined using our proprietary algorithms that derive actual ecological networks that characterize the microbiome of subjects with a particular disease or that are in a state of health. Our algorithms define those organisms that impact the structure of the microbial communities and the health of the microbiome, which we refer to as keystone organisms, and their associated critical, functional biological pathways. Keystone organisms and their associated critical, functional biological pathways may exist in low, moderate, or high abundance in an ecology of microbes, but are often missing or at reduced levels in an individual with disease. By comparing the ecologies in healthy and disease states, we are able to identify the ecological deficiencies and missing keystone components that characterize the disease state and are the target of our Ecobiotic microbiome therapeutics.

Ecobiotic microbiome therapeutics are rationally designed to solve for the microbiome ecological deficiencies identified between disease and health states. Rational design involves the determination, prioritization and optimization of microbial network ecologies with the greatest therapeutic potential based on critical factors, such as the evolutionary relationships of the microbes, theoretical and empirically defined functional capabilities, safety profile of strains and various bioprocessing parameters. We maintain a proprietary design and discovery database that captures and integrates key information about microbial strains. Our design algorithms in combination with our functional screening capabilities enable us to identify lead candidate compositions that possess the necessary functional profile to restore the ecological deficiency that causes the dysbiosis.

Strain Library Screening and Lead Optimization and Ecobiotic Candidate Nomination

To facilitate the screening of network ecologies and individual strains, we have developed and maintain proprietary know-how on the isolation, cultivation and fermentation of microbial strains. Our proprietary library comprises over 13,000 strains isolated from healthy donors. Using information from our strain library, we develop and execute moderate- to high-throughput *in vitro* and *ex vivo* screens that evaluate the efficacy and functional properties of candidates and individual microbial strains that comprise the lead candidate ecologies. Once we have a lead candidate we optimize its efficacy and functional properties by screening variants in disease relevant models, including *in vivo* models on a reduced set of candidates that are relevant to the disease indications we are investigating. The final candidate that meets our predefined criteria is nominated for clinical development.

Bioprocess and Formulation

Our Ecobiotic microbiome therapeutics in development consist of combinations of bacteria or bacterial spores rather than single strains. As a result, we must be able to produce, purify and formulate multiple strains of bacteria economically and be able to test the composition of a combination product for quality control. Our bioprocess development and manufacturing processes are designed to address each of these elements.

- *Fermentation*: We employ platform fermentation processes as starting conditions for current good manufacturing processes, or cGMP, production schemes and, when required, develop strain specific process parameters.

- *Purification*: Similar to fermentation, we use small-scale purification operations to complete bench-scale manufacturing and quickly assess the final process yield, quality and robustness.
- *Formulation*: Our Ecobiotic microbiome therapeutics are combinations of cells and bacterial spores and can be administered by a number of methods and by different routes to effect the primary goal of delivering the bacteria to the intended location in a condition where they are able to replicate and correct dysbiosis. Currently, our Ecobiotic microbiome therapeutics are designed to be administered in oral form.
- *Analytical*: We address quality control requirements for our Ecobiotic microbiome therapeutics using proprietary microbiological and sequence-based testing schemes, including high-throughput quantitative analytics to assess the identity, potency and purity of the final product.

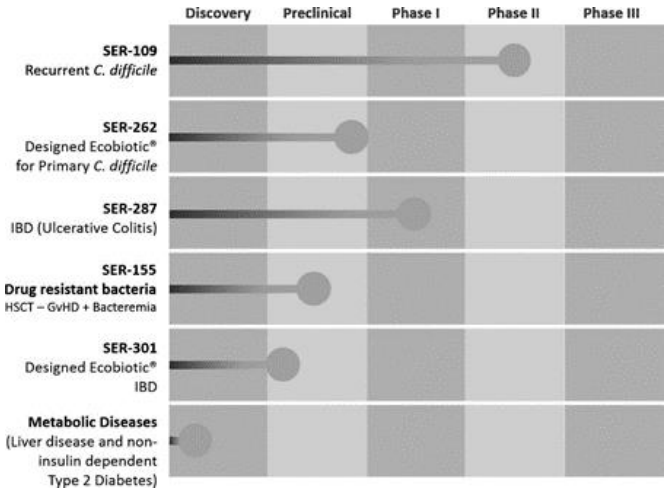
Pre-clinical and Clinical Testing

One of the key competitive advantages of microbiome therapeutics is that we believe they will not need to undergo the same pre-clinical testing that other modalities such as small molecules require. Because the components of our Ecobiotic microbiome therapeutics are found naturally in the body, we do not expect to need carcinogenicity studies or studies designed to evaluate how our Ecobiotic microbiome therapeutics interact with other drugs. Further, we expect that we will not need to conduct traditional Phase 1 pharmacokinetic studies. Clinical pharmacokinetic studies are performed to examine the absorption, distribution, metabolism and excretion of a drug under investigation. Because our Ecobiotic microbiome therapeutics are not absorbed and, therefore, remain in the colonic microbiome, we believe such trials will not be necessary and we expect to proceed directly to patients with the disease that we are studying. These pre-clinical and clinical studies are costly and time- consuming and the ability to proceed in development without them provides an advantage as compared to traditional drug development. For example, based on our correspondence with the FDA, further pre-clinical studies will not be needed for SER-109. In addition, we have confirmed with the FDA that we do not need Phase 2 dose ranging studies for SER-109. We were also not required to perform pre-clinical toxicology studies on SER-287, our investigational product for ulcerative colitis, and we have received written feedback from FDA that traditional pre-clinical toxicology will not be required for SER-262, our Ecobiotic drug candidate for primary CDI. We believe many of the same requirements may apply across our future product candidates.

Our Product Pipeline

We believe our Ecobiotic microbiome therapeutics represent a novel approach with potential application across a broad range of human diseases. Our most advanced drug development program, SER-109, focuses on recurrent CDI. SER-109 is in a Phase 2 study in the U.S. and has been designated as a Breakthrough Therapy and an Orphan Drug by FDA. SER-262 is an Ecobiotic drug candidate under development for treatment of dysbiosis following primary CDI, in order to prevent recurrence, and we expect to initiate a Phase 1b study in mid-2016. SER-287 is under development for the treatment of active mild-to-moderate ulcerative colitis and we commenced a Phase 1b study in the fourth quarter of 2015. We are designing and developing SER-155, an Ecobiotic microbiome therapeutic candidate for the prevention of transplant-related mortality (due to infection and GvHD) in allogeneic hematopoietic stem cell transplant (HSCT) recipients; for the treatment of metabolic disorders such as non-alcoholic fatty liver disease and early-stage and non-insulin dependent diabetes; for inflammatory conditions such as Crohn’s disease; for enhancing the safety and efficacy of immuno-oncology agents including checkpoint inhibitors used in cancer treatment; and for treating rare genetic disorders such as urea cycle disorders.

The following chart summarizes our current product pipeline:



Our CDI Product Candidates

We are developing SER-109 as an Ecobiotic microbiome therapeutic designed to prevent further recurrences of CDI in patients suffering from recurrent CDI, defined as at least three occurrences of CDI in a nine-month period, by restoring the dysbiotic microbiome to a healthy state. In our Phase 1b/2 clinical study, 26 of 30 patients, or 87% of patients, achieved the primary efficacy endpoint of experiencing no diarrhea associated with a positive *C. difficile* test during the eight weeks post-treatment. Additionally, 29 of 30 patients, or 97% of patients, achieved a clinical cure, which we defined as the absence of CDI requiring antibiotic treatment during the eight- week period after SER-109 dosing. The results of the trial suggest a favorable safety profile with no serious adverse events considered by the investigators to be attributable to SER-109. We also performed an analysis of the microbiome using next-generation sequencing technology and microbiological analysis. These studies demonstrated a re-establishment of keystone organisms and a rapid increase in bacterial diversity, which enable the restoration of the microbiome towards a healthy state. SER-109 has been granted Orphan Drug and Breakthrough Therapy designation by the FDA. We initiated a Phase 2 clinical study of SER-109 for recurrent CDI and dosed the first patient in May 2015. We expect initial study results in the middle of 2016. We have conducted manufacturing process pre- validation studies of SER-109 to support a Phase 3 clinical trial and a potential biologics license application and commercial launch.

We are also developing SER-262 to be used following antibiotic treatment of primary CDI to prevent an initial recurrence of CDI. Pre-clinical studies of SER-262 have demonstrated efficacy similar to SER-109 in mouse models of CDI. We intend to initiate clinical studies of SER-262 in the middle of 2016.

If approved, we believe these two product candidates will enable us to provide a more effective and safer treatment for preventing the recurrence of CDI than the current standard of care.

Clostridium difficile Infection, or CDI

C. difficile is a Gram-positive, toxin-producing, spore forming bacterium that causes severe and persistent diarrhea in infected individuals, but can also lead to more severe outcomes, such as pseudomembraneous colitis, toxic megacolon and death. *C. difficile* bacteria express toxins that disrupt the structural architecture of cells causing leakage of fluids through the gastrointestinal epithelium. The cells disrupted by these toxins eventually undergo apoptosis and die, releasing their contents into the colon, resulting in inflammation of the colon, severe and persistent diarrhea and, in the most serious cases, death.

CDI is generally not present in healthy adults, although approximately 1% to 5% of adults may carry low levels of *C. difficile* without clinical symptoms. CDI is most often associated with the prior use of antibiotics, although age and poor immune status are

important risk factors as well. Antibiotics are thought to decrease resistance to CDI by causing dysbiosis in the microbiome. Since *C. difficile* spores are able to survive for long periods of time outside the body, and because healthcare settings are often sites of significant antibiotic use, CDI transmission rates in hospitals, long-term acute care facilities and nursing homes have been increasing. CDI is also a cause of morbidity and mortality among hospitalized cancer patients and bone marrow transplant patients as their immune systems are suppressed by cytotoxic drugs, which are drugs that inhibit or prevent the function of cells, and they may be heavily treated with antibiotics to prevent or treat infections. More recently, the rise of community-acquired CDI has been recognized as a growing problem.

The CDC has identified *C. difficile* as one of the top three most urgent antibiotic-resistant bacterial threats in the United States. It is the most common cause of hospital acquired infection in the United States, having overtaken MRSA. CDI is responsible for the deaths of approximately 29,000 Americans each year. CDI is also very costly to the healthcare system. According to a study published in Clinical Infectious Diseases, the economic burden of CDI in 2008 in U.S. acute care facilities alone was estimated to be as much as $4.8 billion. In addition, a summary of studies published in 2009 in *The Journal of Hospital Infection*, calculated that the treatment cost per episode of primary CDI was as much as $5,000 and as much as $18,000 per recurrence of CDI (Ghantoji et al., 2010).

The CDC estimates the incidence of primary CDI by focusing on 10 catchment areas covering 11 million residents. Based on this analysis, it is estimated that there are approximately 453,000 new cases of primary CDI per year. Further, according to a 2014 article in the *American Journal of Infection Control*, from 2001 to 2010, incidence of CDI per 1,000 patients discharged increased from 4.5 to 8.2 with an average hospital stay of eight days. We believe the CDC method underestimates incidence based on several factors. First, residents who are diagnosed outside of their catchment area are not included in estimates. Second, many of the CDC diagnostic labs use a lower sensitivity test, which results in about 20% lower detection rates than the current most sensitive method. In addition, the CDC approach misses community cases, which are estimated to account for 30% to 40% of total cases. As a result, we estimate the incidence of primary CDI in the United States is between 640,000 and 820,000 patients per year. Additional research suggests that the risk of recurrence is approximately 25% after primary CDI, 40% after a first recurrence and greater than 60% for those experiencing two or more recurrences. In addition, in a recent randomized trial comparing two antibiotics for primary CDI, 8% of patients receiving fidaxomicin and 9% of patients receiving vancomycin did not respond after completing their antibiotic regimen. We estimate that the addressable population of patients in the United States with recurrent CDI, defined as patients who have experienced at least three occurrences of CDI in the past nine months, is between 85,000 and 110,000 patients per year.

The European Hospital and Healthcare Federation, or HOPE, estimates that there are approximately 172,000 cases of CDI per year in the EU. In 2013, CDI was estimated to occur in one in 435 admissions per hospital. Based on a 2010 report from HOPE and other studies on the incidence of CDI in the EU, we estimate that the annual incidence rate of CDI in the EU is 4.1 per 10,000 individuals.

Current and developing treatment alternatives and their limitations

Patients with CDI utilize antibiotics, fecal microbiota transplantation FMT, and unapproved over-the-counter probiotics. Several therapeutic antibodies and vaccines are also being developed.

Antibiotics

The current standard of care for CDI is to treat with antibiotics, such as metronidazole and vancomycin. Metronidazole has been found to be effective for primary CDI, but approximately 29% of patients experience recurrence. It is not recommended for severe disease, nor is it used beyond first recurrence due to lack of efficacy. Vancomycin is more expensive, with a reported relapse rate of 25%. In addition, fidaxomicin, an approved antibiotic for CDI, may have higher initial efficacy compared to metronidazole, but it does not have a label claim to reduce or prevent CDI recurrence. No antibiotic therapeutics are currently approved for treatment of recurrence of CDI.

Recurrent CDI, defined as three or more occurrences of CDI in a nine-month period, is not well addressed by any of the available antibiotics. When a patient has recurred two or more times after the initial occurrence, antibiotic relapse rates are greater than 60% and the probability of additional relapse increases with successive cycles. Some physicians resort to pulse-taper regimens of vancomycin lasting six weeks or more, but there are no well-controlled clinical studies that show such regimens are effective. In extreme cases, patients are treated continuously for years with vancomycin, even while they continue to experience gastrointestinal symptoms including diarrhea and abdominal discomfort.

The primary limitation of antibiotics is that their use appears to exacerbate dysbiosis. Recent research in animal models has shown that antibiotic use not only eliminates many healthy bacteria in the gastrointestinal tract, but also leads to the release of nutrients that facilitate the growth of *C. difficile*. Antibiotics have also been shown to change the ratio of primary versus secondary

bile acids in the colon by killing bacteria required to metabolize bile acids. This shift to a predominance of primary bile acids further facilitates the growth of *C. difficile*, as it requires primary bile acids for germination of its spores. As a result, antibiotic use may induce a lasting dysbiosis that makes it possible for *C. difficile* to colonize a person and then cause, or further perpetuate, disease.

Fecal microbiota transplantation

FMT, also known as a stool transplantation, is a procedure during which donated stool, including fecal microbes, is typically instilled via colonoscopy into a patient with CDI. We believe that the efficacy of FMT, which has resulted in cure rates for recurrent CDI of 81% in a randomized controlled study reported in 2013 in the New England Journal of Medicine, essentially confirms the role of dysbiosis as a cause of CDI recurrence. However, FMT presents several challenges for effective treatment of the disease. FMT has the potential to transmit infectious or allergenic agents between hosts, involves the transmission of potentially hundreds of unknown strains of bacteria, fungi and viruses from donor to subject, and is difficult to perform on a mass scale. Additionally, FMT is inherently non-standardized so that different desired and/or undesired material may be transmitted in any given donation. FMT is not approved by the FDA and we believe it may be unable to gain such approval since the product, to our knowledge, cannot be standardized and characterized according to current regulatory requirements for identity, potency, purity and safety.

Probiotic therapies

Probiotics represent a group of products typically available over the counter in supplements and in some foods, which contain a small number of species of bacteria. However, to date there have been no clinical studies that have established the ability of probiotics to repair a dysbiosis of the microbiome. Further, there is neither a legally recognized definition of, nor a standard of identity for, the term probiotic in the United States or Europe. Recently, the European Food Safety Authority rejected many of the claims of health benefits associated with probiotics because the microbes had not been sufficiently characterized, the claimed effect was not considered beneficial and human studies in support of the claims had not been made available. As a result, after December 14, 2012, food and nutritional supplements companies were no longer allowed to communicate health benefits for their products on account of probiotic content in the EU.

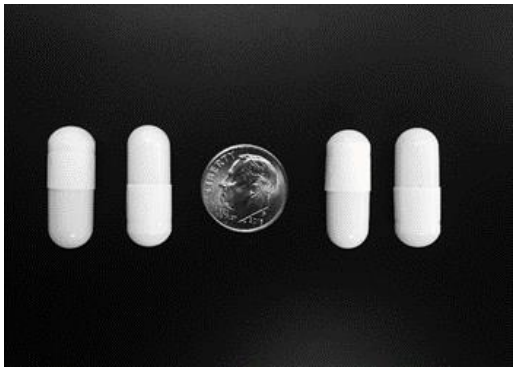
Antibodies and vaccines

Antibodies and vaccines are also in development to treat CDI. Antibodies suppress toxins to alleviate the symptoms of CDI, but they do not address the underlying dysbiosis of the microbiome, which we believe is the cause of recurrent CDI. Antibodies also require intravenous infusion and are more costly to produce relative to other treatments, such as antibiotics. The efficacy of vaccines in treating CDI in humans currently remains unproven. In addition, it is difficult to define a target population for a CDI vaccine, given that the at-risk patient population is largely elderly individuals who typically respond less robustly to vaccination therapies.

SER-109

SER-109 is a bacterial spore ecology consisting of an average of approximately 50 bacterial species derived from healthy donors' fecal matter that is designed to prevent further recurrences of CDI in patients suffering from recurrent CDI by restoring a dysbiotic microbiome to a state of health. In our open label Phase 1b/2 clinical study of SER-109, we evaluated the effect of treatment with SER-109 in patients with three or more occurrences of CDI in a 12-month period. Of the 30 patients enrolled in the trial, 29, or 97%, achieved a clinical cure, which we defined as the absence of CDI requiring antibiotic treatment during the eight-week period after SER-109 dosing. In the trial SER-109 was well- tolerated and had a favorable safety profile with no serious adverse events considered by the investigators to be attributable to the SER-109 treatment. We also performed an analysis of the microbiome using next-generation sequencing technology and microbiological analysis. These studies demonstrated a re-establishment of keystone organisms and a rapid increase in bacterial diversity, which enable the restoration of the microbiome to a healthy state.

SER-109 is formulated as oral capsules for single-dose administration after completion of antibiotics. A single dose of SER-109 comprises 100 million spores that are delivered in four small oral capsules. The spores in SER-109 are intended to germinate in the gastrointestinal tract and immediately compete for the same nutrients required by *C. difficile*. The spore forming organisms from SER-109 are also intended to shift the balance of bile acids toward secondary acids that are less efficient for promoting germination of *C. difficile* spores. The following picture is a commercial prototype of a single dose of SER-109:



Phase 1b/2 clinical study design

The Phase 1b/2 clinical study was a two part trial designed to evaluate the safety and efficacy of SER-109 in 30 patients with recurrent CDI, defined as three or more occurrences of CDI in the previous 12 months.

Part 1 of the study evaluated a single dose of SER-109 administered orally in 30 capsules over two days, with the dose derived from approximately 75 grams of stool. Part 2 of the study evaluated a single dose of SER-109 administered orally in a range of one to 12 capsules over one day. The dose in Part 2 was based on spore count, as opposed to fecal mass, which is expected to allow for a more precise dosing regimen. The target dose in Part 2 was $1x10^8$ spores per dose, which was approximately 17-fold lower than the mean dose in Part 1. The SER-109 doses were derived from seven different healthy human donors. Prior to receiving treatment with SER-109, patients were on antibiotic therapy consisting of either fidaxomicin, vancomycin or metronidazole. At least 24 hours prior to starting treatment with SER-109, antibiotic therapy was discontinued.

The trial was designed to enroll patients between the ages of 18 and 90 years, with relapsed, laboratory-confirmed CDI with three or more occurrences in the previous 12 months. Enrolled patients must have undergone treatment for CDI with at least three courses of antibiotic therapy in the last 12 months and have a life expectancy of greater than three months. Patients with acute leukemia, recent bone marrow transplant or recent chemotherapy, as well as patients with a history of IBD or IBS with diarrhea, total colectomy or liver cirrhosis were excluded from the trial. The following table identifies patient demographics following enrollment in the trial:

Cohort	Mean Dose (spore units)	Male/Female	Age Median (Range)	Number of CDI Recurrences in Prior 12 months Median (Range)
1	$1.7x10^9$	5 / 10	71 years (22 – 88)	3 (2 – 6)
2	$1.0x10^8$	5 / 10	58 years (39 – 83)	3 (2 – 5)

The primary safety measures were an evaluation of adverse events, laboratory values, vital signs and physical examination of findings prior to and after dosing with SER-109 over a 24-week time period. Evaluations occurred by telephone calls, in-home assessments or clinic visits by qualified personnel. Patients were assessed at Days 2 and 4 and Weeks 1, 2, 4, 8 and 24 post-treatment. The primary efficacy measure was the absence of CDI (defined in this study as more than three unformed bowel movements in a 24-hour period with laboratory confirmation of the presence of *C. difficile* toxin in the stool) during the eight weeks after initiating therapy. Eight weeks was selected as the measurement period for the primary endpoint based on our clinical advisory board's experience that a significant majority of CDI recurrences occur within eight weeks. Secondary efficacy measures included minimum effective dose, time to CDI recurrence following SER-109, time without diarrhea during the follow-up period and change in diversity

of the colonic microbiome at Day 4 and Weeks 1, 2, 4 and 8 as measured by deep sequencing of patient stool samples. Stool samples were collected pre- treatment and on Day 4 and Weeks 1, 2, 4, 8 and 24 post-treatment.

Phase 1b/2 clinical study results

Efficacy. Twenty-six of 30 patients, or 87% of patients, in the Phase 1b/2 clinical study achieved the primary efficacy endpoint of experiencing no recurrence of CDI during the eight weeks post- treatment. These 26 patients consisted of 13 patients in each of Part 1 and Part 2 of the study. Among the 26 patients was one patient who experienced an initial recurrence on Day 26 and was re-treated, per protocol, with a dose from the same donor. Following re-treatment, this patient also achieved the primary efficacy endpoint. Efficacy results were not dependent upon the initial human donor or the dose over the range of $3.4x10^7$ to $2.3x10^{10}$ spores.

Of those patients who did not meet the primary efficacy endpoint, one patient had a recurrence of CDI on Day 5 and did not receive a second treatment with SER-109. The three other patients who failed the protocol-defined primary efficacy endpoint were determined by their attending investigator to be recovering from their diarrheal episode by the time they submitted their stool sample for CDI testing. In each case, the investigator advised the patient to refrain from antibiotic use and the patients' condition resolved without antibiotic therapy. All three patients were determined to be clinically CDI free at eight weeks. As a result, the clinical cure rate for the study, which we defined as the absence of CDI requiring antibiotic treatment during the eight-week period after SER-109 dosing, was 97%, or 29 of 30 patients.

We also tested a total of 27 patients at Week 8 for *C. difficile* carriage, where a patient carries the *C. difficile* bacterium but does not experience symptoms related to *C. difficile*. Of the 27 patients tested, 24 patients, or 89% of patients, tested negative for *C. difficile* carriage. Among the three patients who were not tested for *C. difficile* carriage, one patient did not continue with the study to Week 8 and samples were not collected for two patients at Week 8. In addition, 22 patients continued to participate in the Phase 1b/2 clinical study and did not receive additional antibiotics. Of these patients, 20, or 91% of patients, experienced no recurrence of CDI 24 weeks after treatment.

The results of the SER-109 Phase1b/2 clinical study were published in the *Journal of Infectious Diseases* (Khanna et al., A Novel Microbiome Therapeutic Increases Gut Microbial Diversity and Prevents Recurrent *Clostridium difficile* Infection, Journal of Infectious Disease) in February 2016.

We also performed an analysis of the microbiome using next-generation sequencing technology and microbiological analysis to evaluate long-term changes in the microbiome, including the restoration of bacterial diversity in the colon of patients. These studies demonstrated a rapid increase in bacterial diversity and a restructuring of the microbiome towards a healthy state. Upon introduction, SER-109 appears to engraft its bacterial species into the microbiome, with some of these species persisting in the patient's gastrointestinal tract for at least 24 weeks after dosing. In addition, in some patients we noted the repopulation of organisms that were not in SER-109 and had not been detected in the patient prior to treatment. We believe this phenomenon, which we refer to as augmentation, is an important element for restoration of bacterial diversity and repair of dysbiosis. Engraftment and augmentation, as well as the clinical resolution of CDI, were not dependent on the dose of SER-109 administered.

We believe the engraftment and augmentation observed with SER-109 could have important medical implications for treating other infectious agents. For example, in the Phase 1b/2 clinical study, we observed that some patients were not only infected with *C. difficile*, but were also colonized with other harmful organisms at high levels. Importantly, after SER-109 treatment, levels of these organisms declined by as much as 100,000-fold. For example, we identified multiple patients in the trial with high levels of VRE, which are drug-resistant bacteria that colonize the gastrointestinal tract and can cause serious bloodstream infections. In patients identified with VRE, the VRE was reduced below the limit of detection of our assays after treatment.

Safety. In Part 1 of the study, 80% of the patients experienced at least one adverse event, all of which were treatment emergent adverse events, or TEAEs. A TEAE was defined as an adverse event that started or worsened at or during the time of or after the date of the first dose of SER-109 through the final follow-up visit. Five, or 33%, of the patients were judged by the investigator to have a TEAE attributable to SER-109 and all were mild or moderate. In Part 2, 100% of the patients experienced at least one adverse event, all of which were TEAEs. Nine, or 60%, of the patients were judged by the investigator to have a TEAE attributable to SER-109 and all were mild or moderate. The most common adverse events were gastrointestinal disorders and diarrhea. The majority of TEAEs were mild in severity and consistent with post-antibiotic recovery from CDI. One patient in Part 2 had a severe adverse event of chest pain, which was not considered related to SER-109. Two patients each in Part 1 and Part 2 had more than one serious adverse event, none of which was considered related to SER-109. There were no deaths in Part 1 or Part 2.

Clinical development plan

In May 2015, we initiated a SER-109 Phase 2 clinical study. We expect initial clinical study results in the middle of 2016. Following the analysis of the data to come from our Phase 2 clinical study, we plan to meet with the FDA to present Phase 2 safety and efficacy results and a proposed protocol for the Phase 3 clinical trial. We are conducting pre-validation studies of our manufacturing process for SER-109, and we expect to obtain sufficient data from these studies for a Phase 3 clinical trial. We plan to initiate the Phase 3 clinical trial in the second half of 2016.

The FDA has indicated that we do not need to conduct further pre-clinical studies of SER-109. We believe this conclusion is the result of several factors, including the following:

- gastrointestinal bacteria are host-specific and animal data would not be more representative than our human clinical data;
- SER-109's favorable safety profile in patients in the Phase 1b/2 clinical study;
- ecobiotic microbiome therapeutics are unlikely to result in systemic exposure because they are not absorbed outside of the gastrointestinal tract;
- engraftment of spores is not dependent on dose based on the range of doses evaluated in our Phase 1b/2 study; and
- SER-109 comprises spores from microbes found in a healthy human gastrointestinal tract. Taken together, we believe these parameters allow for rapid and inexpensive development relative to typical drug discovery and development.

Phase 2 clinical study design

The Phase 2 clinical study is a randomized, double-blinded, placebo-controlled, parallel-group trial with two treatment arms enrolling a total of 87 patients. We plan to enroll eligible patients at approximately 36 sites in the United States. Patients will be randomized 2:1 to receive either a single oral dose of SER-109 in four capsules or a matching placebo in four capsules. Based on the assumptions we have made for the recurrence rate of CDI and assuming we conduct final analyses for a minimum of 78 patients, our Phase 2 clinical study is sufficiently large, with the power of the study over 90%, to demonstrate that SER-109 is superior to placebo. The SER-109 formulation of the inner capsule has been refined to enable production to meet commercial requirements. We believe that the manufacturing and formulation changes have resulted in a more pure form of SER-109 that is comparable in potency to that used in the Phase 1b/2 clinical study based on a pre-clinical mouse *C. difficile* model.

The Phase 2 clinical study is designed to enroll patients 18 years or older with a documented history of three or more occurrences of CDI in the previous nine months, as compared to 12 months in our Phase 1b/2 clinical study. Additionally, enrolled patients must have been clinically responsive to ten to 21 days of standard of care antibiotics and show no evidence of diarrhea for two or more consecutive days prior to randomization. In contrast, enrolled patients in our Phase 1b/2 clinical study were permitted to be on long-term antibiotic therapy. Inclusion and exclusion criteria for the Phase 2 clinical study are generally similar to our Phase 1b/2 clinical study, but are more restricted in some patient populations. For example, the criteria exclude patients on steroids (≥ 20 mg/d) or on maintenance immunotherapy and those with a history of untreated celiac disease or gluten enteropathy. However, the inclusion and exclusion criteria for the Phase 2 clinical study is less restrictive in other patient populations. For example, the criteria exclude patients with IBS or IBD only if active within the past 24 months, as compared to patients with any history of these diseases in our Phase 1b/2 clinical study, and patients with an absolute neutrophil count, or ANC, less than 500/mm3, as compared to patients with an ANC less than 1000/mm3 in the Phase 1b/2 clinical study.

The primary efficacy objective in the Phase 2 clinical study will be to demonstrate the superiority of SER-109 compared to placebo in the prevention of recurrent CDI in adult patients up to eight weeks after treatment. In this study, an episode of recurrent CDI will be defined as three or more unformed stools per day over two days with a positive *C. difficile* stool test and requiring antibiotic treatment. By comparison, our Phase 1b/2 clinical study defined an episode of recurrent CDI as three unformed stools over one day with a positive *C. difficile* stool test and did not require antibiotic treatment. The decision to treat with antibiotics will be based on the physician's clinical assessment of the patient in accordance with the guidelines set forth in our Phase 2 clinical study protocol. The primary safety objective will be to evaluate the safety of SER-109 in these patients up to 24 weeks after treatment as determined by clinical and laboratory safety assessments. During the follow-up period (Weeks 9-12), patients will be contacted by phone weekly and asked about adverse events and diarrheal symptoms. If diarrheal symptoms meeting the definition of recurrent CDI occur during the follow-up period, patients will be asked to return to the clinic for a clinical evaluation and a *C. difficile* test. In addition, patients will return to the clinic at Week 12 for safety evaluations. Following the Week 12 visit, patients will be contacted by phone at Weeks 16, 20 and 24 and asked about adverse events and diarrheal symptoms.

We also plan to evaluate secondary objectives including the time to CDI recurrence, if any, in patients who receive SER-109 compared to those who receive placebo, and the proportion of patients experiencing clinical CDI recurrence up to four, 12 and 24 weeks post-treatment in patients who receive SER-109 compared to placebo. In addition, exploratory objectives include comparing the changes in the composition of the gastrointestinal microbiome from baseline to 24 weeks post- treatment using metagenomic analysis and measuring quality of life and health outcomes up to 24 weeks post-treatment.

After all enrolled patients complete the Phase 2 clinical study, which will occur following dosing of each patient, or have discontinued before that time point, an analysis of the efficacy and safety endpoints will be performed. Following the analysis of this data, we plan to meet with the FDA to present Phase 2 safety and efficacy results and a proposed protocol for the Phase 3 clinical trial. We plan to initiate the Phase 3 clinical trial in the second half of 2016.

Open label extension study. Patients in either arm of the Phase 2 clinical study who relapse and experience an episode of recurrent CDI within eight weeks of treatment will be permitted to enroll in an open label extension study in which they will receive a single dose of SER-109. Participation in the open label extension will be conditioned upon the patient's continued satisfaction of the inclusion and exclusion criteria. We believe that providing the open label extension will assist in facilitating enrollment in the Phase 2 clinical study by providing participants the opportunity to ultimately receive SER-109 if they are initially enrolled in the placebo group. In addition, we believe the open label study will provide additional safety data and may provide us with greater understanding of the impact of a second dose of SER-109.

Manufacturing

SER-109 is a purified ecology of spores produced through a process of extraction from a natural human stool source, obtained from qualified, highly screened donors. The donor raw material is collected in a controlled setting, under a protocol that ensures that donors meet qualification criteria.

Donors are required to be in good health, and to possess a medical history and a lifestyle that minimizes the risk of exposure to and transmission of an infectious disease. Donors are tested for infectious agents and screened for gastrointestinal and other health factors. After initial qualification, the donor is eligible to donate for a defined period of time. Donors are monitored for health status changes during the donation period. At the end of the donation period, the qualification assessment is repeated to help ensure the donor has maintained their health status. After successful completion of an exit screening the donations are released from quarantine for use in manufacturing.

We initially process the donor material in our Kendall Square, Cambridge manufacturing facility, and then transfer the process intermediate to a Contract Manufacturing Organization, or CMO, to isolate and concentrate SER-109 for finishing to the oral capsule dosage form. The purified, concentrated Drug Substance is tested for identity, potency and purity, and subsequently formulated into Drug Product where it is again tested for identity, potency, and purity. The final Drug Product dosage form is four hard capsules for oral administration. Steps are specifically built into the process to remove and kill non-spore microbes. We have conducted validation studies demonstrating the ability of the process to inactivate and clear hypothetical extraneous pathogens of concern, and we believe we have sufficient data from these studies to support a Phase 3 clinical trial.

Raw materials, intermediates, drug substance and drug product are tested using cGMP assays developed with our know-how to assess the key quality attributes of identity, potency and purity of the natural product. Identity testing has been developed to assure the presence of specific live spore forms in the product. Potency assays assure the dose of spores, and assess stability of the spores and the product form during storage. Proprietary microbiological purity assays have been developed to enable testing for microbial contaminants in the presence of the live spore product.

Once ingested, a single dose of SER-109 spores administered to a patient multiply rapidly within the gastrointestinal tract. Therefore, the dosage required to treat a patient is modest. As a result, we believe we can address market demand with a relatively small- scale manufacturing process. Additionally, the need for donors to address anticipated market supply is also modest. If approved, we anticipate that we will be able to produce a sufficient commercial supply of SER- 109 to meet estimated demand in the U.S. using donations from fewer than 20 human donors.

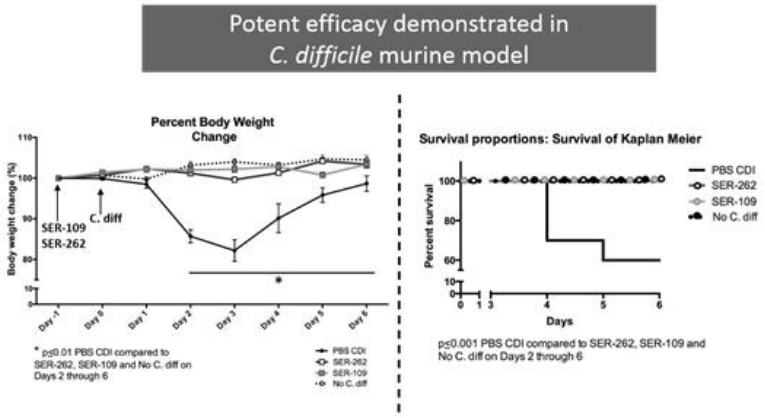
SER-262

We are developing SER-262, which is a synthetic fermented, multi-strain Ecobiotic microbiome therapeutic intended to be used following antibiotic treatment of primary CDI to prevent an initial recurrence of CDI. We are designing SER-262 to increase and improve diversity in the colonic microbiome after antibiotics following CDI. The results of our Phase 1b/2 clinical study of SER-109 provided multiple insights that employed in designing the spore ecology used in SER-262, which consists of a subset of bacteria found

in SER-109. Pre-clinical studies of SER-262 have demonstrated that it is comparable in efficacy to SER-109 in the mouse model of CDI..

As part of our selection of SER-262 we screened multiple candidates for efficacy in animal models using SER-109 as a reference compound. SER-262 provided significant protection against CDI with reduced mortality, minimum weight loss and clinical score measures of efficacy. Strains in SER-262 have met initial bioprocess specifications for spore titer and yield, and each organism has been characterized by whole genome sequencing and a battery of in vitro tests and characterizations.

The results of some of these pre-clinical studies are depicted in the diagrams below.



We have discussed our pre-clinical data and intended Phase 1b study protocol with FDA and intend to initiate a SER-262 clinical study in the middle of 2016. Each of the strains used in our pre-clinical studies were purified from a qualified donor who participated in the SER-109 Phase 1b/2 clinical study. Given our ability to grow the spores in bacterial fermenters, we will not require any additional donations from human donors for purposes of manufacturing SER-262.

SER-262 represents the continued evolution of our platform and capabilities, validating our ability to extend our technology to new indications. SER-262, unlike SER-109, is made in bacterial fermenters and in a rational *in vitro* design similar to a fixed dose combination of small or large molecules. We intend to use this approach going forward for future Ecobiotic microbiome therapeutics, which will eliminate the need for ongoing human donors in the CMC process. There are several advantages to using a synthetic approach to developing microbiome therapeutics. Synthetically derived product candidates can be manufactured in a reliable, reproducible manner, with extremely well-defined characteristics. Based on our metagenomics expertise, vast proprietary bacterial library, and advanced manufacturing capabilities, we are able to specifically design synthetically produced microbiome therapies for specific target indications. Importantly, our unique capabilities provide Seres with a significant competitive advantage in developing synthetically produced microbiome therapies.

Manufacturing

To manufacture SER-262, bacterial components for formulation are fermented and purified as spores. The bacteria originate from cell banks that have been manufactured starting from proprietary research strain banks. Research strain banks have been made by clonal isolation and multiple rounds of streaking for purity, followed by banking and testing for identity and purity. The strains are cultured in controlled fermentations to meet projected initial clinical testing needs. The intended processes have been piloted to demonstrate the Phase 1 production process, and the cGMP campaign for production of supplies has been initiated. cGMP Drug Product processing is similar to SER-109 for initial proof-of-concept clinical trial materials, with the addition of a blending step to combine the individually fermented drug substances. Drug Substance and Drug Product will be tested for identity, purity, and potency Optimization of the fermentation and purification processes, and the dosage form are ongoing to refine manufacturing processes for future needs.

SER-287

Recent published third-party research reported changes in the microbiome in a cohort of patients with IBD, including ulcerative colitis, compared to healthy individuals. The changes include higher levels of *Enterobacteriaceae* and lower levels of *Clostridiales*. The changes in these organisms are a form of dysbiosis, and we believe that if we can repopulate keystone organisms and functional pathways we could restore the microbiome thereby treating ulcerative colitis. Ulcerative colitis is a serious chronic condition affecting approximately 700,000 individuals in the United States. The disease results in inflammation of the colon and rectum and can result in debilitating symptoms, including abdominal pain, bowel urgency and diarrhea.

Based on this research and our experience with SER-109, we believe that we can use a complex spore ecology to restore the underlying dysbiosis of ulcerative colitis. SER-109 is comprised of organisms in the class of *Clostridiales*, which engraft after treatment with SER-109. SER-109 has also been shown to reduce the colonization of *Enterobacteriaceae* in CDI patients. We developed SER-287 to treat ulcerative colitis using data generated in our studies of SER-109.

We initiated our Phase 1b study in December 2015 and are enrolling subjects with mild to moderate ulcerative colitis to evaluate the safety and efficacy of SER-287 added to standard of care treatment. The study will examine the safety and tolerability, effect on composition of the intestinal microbiome, the engraftment of SER-287 bacteria into the intestinal microbiome, and the clinical response, complete remission and endoscopic improvement in subjects following treatment with SER-287 compared to placebo.

Phase 1b clinical study design

The broad objectives of the SER-287 Phase 1b clinical study are to determine the safety and tolerability of SER-287, and microbiome dynamics, in patients with active mild-to-moderate ulcerative colitis.

The Phase 1b clinical study is a multicenter, randomized, double-blind, placebo-controlled multiple dose study utilizing weekly or daily dosing with SER-287 conducted in 55 adult subjects with mild-to-moderate ulcerative colitis. We plan to enroll eligible subjects at approximately 20 sites in the United States. The Phase 1b clinical study is designed to enroll adults 18 years of age and older who have mild-to-moderate ulcerative colitis as defined by a total modified Mayo score between 4 and 10, inclusive, with a modified Mayo endoscopic subscore ≥ 1.

Patients will be randomized to one of four study arms:

- Pre-treatment with placebo for 6 days, followed by weekly dosing of SER-287 for 8 weeks
- Pre-treatment with placebo for 6 days, followed by daily dosing with placebo for 8 weeks
- Pre-treatment with vancomycin for 6 days, followed by daily dosing of SER-287 for 8 weeks
- Pre-treatment with vancomycin for 6 days, followed by weekly dosing of SER-287 for 8 weeks

The primary objectives of the study are to evaluate the safety and tolerability of SER-287 compared to placebo; to compare the baseline composition of the intestinal microbiome to the composition at 8 weeks post-initiation of SER-287 or placebo; and to determine the engraftment of SER-287 bacteria into the intestinal microbial community in each of the SER-287 arms compared to the placebo arm.

The secondary objectives of the study are to determine the proportion of subjects in each of the treatment arms who at eight weeks post-initiation of treatment achieve a clinical response, complete remission, and endoscopic improvement; to assess changes in serum and fecal biomarkers from baseline throughout treatment; to determine the complement of metabolic pathways from stool, urine and blood in each of the treatment arms from baseline throughout treatment; and to compare the changes in exploratory biomarkers from mucosal biopsies, stool and oral swabs in each of the treatment arms from baseline through eight weeks

This study will provide a safety profile of SER-287 compared to placebo for the ulcerative colitis population, describe the changes in the microbiome as a result of treatment with SER-287 and provide potential predictive biomarkers for future studies. Ulcerative colitis is characterized by a decrease in microbial diversity and richness, with a lower prevalence of spore-forming organisms within the phylum Firmicutes. Preliminary data suggest that microbial interventions can affect clinical outcomes in ulcerative colitis, and this study will evaluate whether the ecology of bacterial spores in SER-287 can correct the dysbiosis in ulcerative colitis, increase microbial diversity and safely lead to a clinical response in ulcerative colitis patients with mild-to-moderate disease.

Other Product Candidates and Products in Discovery

SER-155

We have an active pre-clinical program to discover and develop Ecobiotic microbiome therapeutics for other infectious diseases. The Phase 1b/2 clinical study of SER-109 provided initial evidence suggesting that Ecobiotic microbiome therapeutics have the potential to eliminate colonization by potential microbial pathogens, such as VRE and Gram-negative *Enterobacteriaceae*. *Enterobacteriaceae*, such as *Klebsiella*, *Morganella* and *Proteus*. These may be present at low levels in the healthy colon, but like *C. difficile*, they can overgrow after antibiotic use. *Enterobacteriaceae* can include multidrug resistant organisms, or MDROs, that represent significant public health concerns. For example, carbapenem resistant *Enterobacteriaceae*, or CRE, is a significant problem in the United States and has been identified as an urgent priority by the Centers for Disease Control. VRE, CRE and other MDROs colonize the gastrointestinal tract after antibiotic use and can spread through contact with patients and healthcare workers both in institutional and in community settings.

We are currently designing and developing SER-155, an Ecobiotic microbiome therapeutic that is expected to have activity against Gram-positive and Gram-negative enteric bacterial pathogens. We expect to develop SER-155 for the prevention of transplant-related mortality in recipients of allogeneic hematopoietic stem cell transplant (HSCT) due to invasive infection and graft versus host disease (GvHD). The selection of patient population will be based on pre-clinical data, and the assessment of clinical development plan, regulatory path and market opportunities. We plan to conduct studies in animal models as well as conduct further *in vitro* characterization of individual strains, in order to define and nominate a composition for clinical development.

Sales and Marketing

In January 2016 we hired Wael Hashad as Chief Commercial Officer and Executive Vice President. In this newly created role, Mr. Hashad will be responsible for all activities related to the anticipated commercialization of our products in development. If SER-109 is approved in the United States, we plan to commercialize it with our own focused specialty sales force. We believe we can effectively commercialize SER-109 with a commercial team of 100 or fewer sales representatives that will target gastrointestinal and infectious disease physicians, which are the two primary groups of physicians who treat multiple recurrent CDI patients.

In January 2016 we entered into an agreement with NHS for the development and commercialization outside of the United States and Canada of our product candidates in development for CDI and IBD, including ulcerative colitis and Crohn's disease. The agreement will support the development of our portfolio of products for CDI and IBD in markets outside of the United States and Canada and provide financial support for our ongoing research and development.

Manufacturing

The production of live bacterial products is highly specialized. Owing to their hardiness and environmental persistence, production of spore-forming organisms poses unique considerations for product, personnel and facility protection. Manufacturing activities with spores are subject to specialized regulations. We believe that many of the challenges associated with manufacturing bacterial combinations are overcome by the low dose requirements of our product. For example, we expect that a typical commercial fermentation will yield on the order of hundreds or thousands of doses per liter depending on the product and its composition. Additionally, because a given total dose is split between several strains, the per-strain requirements for production may be even lower. As a result, we believe the high productivity relative to the dose level will enable production scales for both clinical and commercial supply to be modest.

We have developed a supply chain for producing and testing materials to ensure the availability of future clinical trial supplies. Our development processes are designed to ensure that the raw materials, process technologies and analytical tests we use are scalable and transferable to a cGMP manufacturing environment. These include the following core elements:

- *Fermentation.* We are using that microscale screening to optimize culture of the bacterial strains of interest in our current and foreseeable product candidates. These screens can identify the fermentation platform that is best-suited for optimization and scale- up of the strains. Small-scale fermentation systems (0.1 L to 20 L) enable the optimization of a wide variety of culture conditions and have been demonstrated to be scalable to commercial fermentation processes and enable technology transfer to clinical and final manufacturing scales. We employ platform fermentation processes as starting points for cGMP production processes, and develop strain specific processes as required. To develop master cell banks, working cell banks, and bulk drug substance for commercial product, we are using bacterial strains originating from a unique research cell bank precursor, so we expect the research cell banks and final drug product should be genetically and physiologically similar.

- *Purification.* Similar to fermentation, we believe small-scale purification operations are available for assessing large-scale cGMP manufacturing of live cells, and to quickly assess downstream process yield, quality and robustness. For our oral products, purification is typically less complex than for parenteral biologics such as monoclonal antibodies that must purify away very similar components from the culturing process. Separation of microbes from soluble fermentation broth components is much simpler.
- *Formulation.* Our Ecobiotic microbiome therapeutics are combinations of live bacteria and can be administered by a number of methods and by different routes. The primary goal in developing formulation is to deliver the bacteria to the intended location in a condition where they are able to replicate and correct dysbiosis. Formulation development generally uses approved excipients and preservatives, and will include screening of liquid, solid, and suspension formulations to maximize the opportunity for extended stability with minimal cold-chain requirements.
- *Analytical*. We intend to address quality control requirements for our Ecobiotic microbiome therapeutics using proprietary microbiological and molecular sequence-based testing schemes. We have available and are further developing quality control and in-process analytical tools that can quantitatively measure the composition of spore, vegetative microbe and spore/vegetative combinations, which we believe enable a wide variety of drug products to be manufactured. Throughout the bioprocess and formulation development platform we use and will expand on high- throughput quantitative analytics to assess the identity, potency and purity of the final product.

We currently have a small scale pilot manufacturing facility at our Cambridge Kendall Square location where we conduct process development, scale-up activities and a portion of the cGMP manufacture of Ecobiotic microbiome therapeutics to support Phase 1 clinical supplies. We are expanding capacity with construction of a larger cGMP manufacturing facility at our new headquarters, with the goal to perform both Drug Substance and Drug Product manufacturing for Phase 1 and 2 clinical development. We intend to establish further manufacturing facilities that will serve late-phase clinical and commercial supply for our product candidates. We may do this by expanding our current and planned facilities, or by purchasing or building additional facilities.

Intellectual Property

We strive to protect the proprietary technology that is important to our business, including seeking and, if granted, maintaining patents intended to cover our product candidates and compositions, their methods of use and processes for their manufacture and any other aspects of inventions that are commercially important to the development of our business. We also utilize regulatory exclusivity as well as trade secrets to protect aspects of our business.

We plan to continue to expand our intellectual property estate by filing patent applications directed to compositions, methods of treatment, methods of manufacture and methods for patient selection created or identified from our ongoing development of our product candidates. Our success will depend on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business, defend and enforce any patents that we may obtain, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how and continuing technological innovation to develop and maintain our proprietary position and, in the future, may rely on or leverage in-licensing opportunities. We seek to obtain domestic and international patent protection, and endeavor to promptly file patent applications for new commercially valuable inventions.

The patent positions of biopharmaceutical companies like us are generally uncertain and involve complex legal, scientific and factual questions. In addition, the coverage claimed in a patent may be challenged in courts after issuance. Moreover, many jurisdictions permit third parties to challenge issued patents in administrative proceedings, which may result in further narrowing or even cancellation of patent claims. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or at all, whether the claims of any patent applications, should they issue, will cover our product candidates, or whether the claims of any issued patents will provide sufficient protection from competitors or otherwise provide any competitive advantage.

Because patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months or potentially even longer, and because publication of discoveries in the scientific or patent literature often lags behind actual discoveries and patent application filings, we cannot be certain of the priority of inventions covered by pending patent applications. Accordingly, we may not have been the first to invent the subject matter disclosed in some of our patent applications or the first to file patent applications covering such subject matter, and we may have to participate in interference proceedings or derivation proceedings declared by the United States Patent and Trademark Office, or USPTO, to determine priority of invention.

Our patent portfolio includes patent applications in the early stages of prosecution and four issued U.S. patents. For our pending Patent Cooperation, or PCT, applications, we anticipate determining, in advance of the applicable deadlines, whether to pursue these applications and if so will pursue them in the United States and selected ex-U.S. jurisdictions. We believe that issued claims will provide protection for SER-109, SER-262, SER-287 and SER-155.

Our patent estate leverages both offensive and defensive strategies. As of February 5, 2016, we owned a total of thirteen patent application families that include Patent Cooperation Treaty, or PCT, applications and/or U.S. patent applications and ex-US patent applications. Some of these families are briefly described below. Four of the patent application families that include only U.S. provisional applications that will not themselves be examined and for which the deadline to file PCT applications and/or U.S. non-provisional applications has not yet expired. The pending patent applications as of February 5, 2016 in six of the patent application families in our portfolio are described briefly below. We expect to pursue additional applications in these families over time.

- A family related to binary combinations of microbes that includes the following issued and pending applications: (i) an issued U.S. patent, which claims therapeutic compositions that include selected binary combinations of microbes; (ii) an issued U.S. patent, which claims methods of using such compositions to treat or prevent CDI; (iii) a continuation U.S. patent application and (iv) national stage applications based on the PCT application in 14 ex-U.S. jurisdictions. Patents issuing from or based on these applications, if any, are expected to expire in 2033, assuming all required maintenance fees are paid and absent any applicable patent term extension or patent term adjustment. We expect this patent application family to provide patent protection for SER-109, SER-262, SER-287 and SER-155.
- A family related to combinations of bacterial spores that includes the following issued and pending applications: (i) two issued U.S. patents and one U.S. application that claim certain methods of treatment of gastrointestinal diseases, including Crohn's disease and colitis, using combinations of bacterial spores and (ii) national stage applications based on the PCT application in 12 ex-U.S. jurisdictions claiming similar methods, as well as related compositions. Patents issuing from or based on these applications, if any, are expected to expire in 2034, assuming all required maintenance fees are paid and absent any applicable patent term extension or patent term adjustment. We expect this patent application family to provide patent protection for SER-109, SER-262, SER-287 and SER-155.
- A family that includes a pending U.S. and a European national stage application based on a PCT application related to compositions of matter and methods for new combinations of microbes for treating gastrointestinal diseases. Patents based on these applications, if granted, are expected to expire in 2034, assuming all required maintenance fees are paid and absent any applicable patent term extension or patent term adjustment.
- A family that includes pending national stage applications in the U.S. and Europe, related to quality control of Ecobiotic products and characterization methods. Patents based on these applications, if granted, are expected to expire in 2034, assuming all required maintenance fees are paid and absent any applicable patent term extension or patent term adjustment.
- A family that includes pending national stage applications in the U.S. and 6 ex-U.S. jurisdictions, related to methods of restructuring of a host microbiome using microbial populations identified using our network-based discovery platforms. Patents based on these applications, if granted, are expected to expire in 2034, assuming all required maintenance fees are paid, and absent any applicable patent term extension or patent term adjustment.
- A family that includes a pending PCT application related to compositions of matter and methods of treating disorders with compositions that include, for example, ternary combinations of microbes. The time period for electing to pursue U.S. and foreign patent protection by filing national stage applications in individual jurisdictions based on this PCT application has not yet expired, and we will need to decide whether and where to pursue U.S. and ex-U.S. protection before expiration of the applicable deadlines. If we do pursue protection in one or more jurisdictions, patents based on this application, if granted, are expected to expire in 2034, assuming all required maintenance fees are paid and absent any applicable patent term extension or patent term adjustment.

Patent term

The base term of a U.S. patent is 20 years from the filing date of the earliest-filed non-provisional, patent application from which the patent claims priority. The term of a U.S. patent can be lengthened by patent term adjustment, which compensates the owner of the patent for administrative delays at the USPTO. In some cases, the term of a U.S. patent is shortened by terminal disclaimer that reduces its term to that of an earlier-expiring patent.

The term of a U.S. patent may be eligible for patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Act, to account for at least some of the time the drug is under development

and regulatory review after the patent is granted. With regard to a drug for which FDA approval is the first permitted marketing of the active ingredient, the Hatch-Waxman Act allows for extension of the term of one U.S. patent that includes at least one claim covering the composition of matter of such an FDA-approved drug, an FDA- approved method of treatment using the drug and/or a method of manufacturing the FDA-approved drug. The extended patent term cannot exceed the shorter of five years beyond the non-extended expiration of the patent or fourteen years from the date of the FDA approval of the drug, and a patent cannot be extended more than once or for more than a single product. During the period of extension, if granted, the scope of exclusivity is limited to the approved product for approved uses. Some foreign jurisdictions, including Europe and Japan, have analogous patent term extension provisions, which allow for extension of the term of a patent that covers a drug approved by the applicable foreign regulatory agency. In the future, if and when our product candidates receive FDA approval, we expect to apply, if appropriate, for patent term extension on patents covering those product candidates, their methods of use and/or methods of manufacture.

Trade secrets

In addition to patents, we rely on trade secrets and know-how to develop and maintain our competitive position. We typically utilize trade secrets to protect aspects of our business. We protect trade secrets and know-how by establishing confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and collaborators. These agreements provide that all confidential information developed or made known during the course of an individual or entities' relationship with us must be kept confidential during and after the relationship. These agreements also provide that all inventions resulting from work performed for us or relating to our business and conceived or completed during the period of employment or assignment, as applicable, shall be our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary information by third parties.

Competition

The development and commercialization of new drug and biologic products is highly competitive and is characterized by rapid and substantial technological development and product innovations. We face competition with respect to our current product candidates, and will face competition with respect to any product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. We are aware of a number of large pharmaceutical and biotechnology companies, as well as smaller, early-stage companies, that are pursuing the development of products, including microbiome therapeutics, for the prevention of CDI, IBD and other disease indications we are targeting. Some of these competitive products and therapies are based on scientific approaches that are similar to our approach, and others may be based on entirely different approaches. For example, FMT is a procedure that is currently used for recurrent CDI and has resulted in high cure rates for recurrent CDI and our competitors and physicians may continue to seek to standardize and implement this procedure. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources, established presence in the market and expertise in research and development, manufacturing, pre-clinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors.

These third parties compete with us in recruiting and retaining qualified scientific, clinical, manufacturing sales and marketing and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

The key competitive factors affecting the success of SER-109, SER-287 and any other product candidates that we develop, if approved, are likely to be their efficacy, safety, convenience, price, the level of competition and the availability of reimbursement from government and other third-party payors.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market, especially for any competitor developing a microbiome therapeutic which will likely share our same regulatory approval requirements.

In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of lower cost products.

Government Regulation

The FDA and other regulatory authorities at federal, state and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring and post-approval reporting of drugs and biologics such as those we are developing. We, along with our contract manufacturers, will be required to navigate the various pre-clinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval for our product candidates. The process of obtaining regulatory approvals and ensuring subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources.

In the United States, the FDA regulates drug and biologic products under the Federal Food, Drug and Cosmetic Act, its implementing regulations and other laws, including, in the case of biologics, the Public Health Service Act. Our product candidates are subject to regulation by the FDA as biologics. Biologics require the submission of a biologics license application, or BLA, and approval by the FDA before being marketed in the United States. None of our product candidates has been approved by the FDA for marketing in the United States, and we currently have no BLAs pending. If we fail to comply with applicable FDA or other requirements at any time during product development, clinical testing, the approval process or after approval, we may become subject to administrative or judicial sanctions. These sanctions could include the FDA's refusal to approve pending applications, suspension or revocation of approved applications, warning letters, product recalls, product seizures, total or partial suspensions of manufacturing or distribution, injunctions, fines, civil penalties or criminal prosecution. Any FDA enforcement action could have a material adverse effect on us.

The process required by the FDA before our biologic product candidates may be marketed in the United States generally involves the following:

- completion of pre-clinical laboratory tests and animal studies performed in accordance with the FDA's good laboratory practice, or GLP, regulations;
- submission to the FDA of an IND, which must become effective before clinical trials in the United States may begin;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the product candidate for each proposed indication, conducted in accordance with the FDA's good clinical practice, or GCP, regulations;
- submission to the FDA of a BLA;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP regulations; and
- FDA review and approval of the BLA prior to any commercial marketing, sale or shipment of the product.

The testing and approval process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our product candidates will be granted on a timely basis, if at all.

Pre-clinical and Clinical Trials

Once a product candidate is identified for development, it enters the pre-clinical testing stage. Pre-clinical studies include laboratory evaluations of drug chemistry, formulation and stability, as well as studies to evaluate toxicity in animals, which must be conducted in accordance with GLP requirements. The results of the pre-clinical studies, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises concerns or questions about the conduct of the clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Submission of an IND may result in the FDA not allowing clinical trials to commence or not allowing clinical trials to commence on the terms originally specified in the IND. A separate submission to an existing IND must also be made for each successive clinical trial conducted during product development, and the FDA must grant permission, either explicitly or implicitly by not objecting, before each clinical trial can begin.

Clinical trials involve the administration of the product candidate to human subjects under the supervision of qualified investigators. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial and the parameters and criteria to be used in monitoring safety and evaluating effectiveness. Each protocol must be submitted to the FDA as part of the IND. An independent institutional review board, or IRB, for each investigator site proposing to participate in a clinical trial must also review and approve the clinical trial before it can begin at that site, and the IRB must monitor the clinical trial until it is completed. The FDA, the IRB, or the sponsor may suspend or discontinue a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive GCP requirements, including requirements for informed consent.

For purposes of BLA approval, clinical trials are typically conducted in three sequential phases, which may overlap or be combined.

- *Phase 1* — Phase 1 clinical trials involve initial introduction of the investigational product into healthy human subjects or patients with the target disease or condition. These studies are typically designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.
- *Phase 2* — Phase 2 clinical trials typically involve administration of the investigational product to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks.
- *Phase 3* — Phase 3 clinical trials typically involve administration of the investigational product to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval.

In some cases, the FDA may condition approval of a BLA on the sponsor's agreement to conduct additional clinical trials to further assess the biologic's safety and effectiveness after BLA approval. Such post-approval clinical trials are typically referred to as Phase 4 clinical trials.

Although most clinical research performed in the United States in support of a BLA must be authorized in advance by the FDA, under the IND regulations and procedures described above, there are certain circumstances under which clinical trials can be conducted without submission of an IND. For example, a sponsor who wishes to conduct a clinical trial outside the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. Similarly, the FDA may exercise enforcement discretion to permit sponsors to conduct certain types of clinical investigations without an IND. Pursuant to the FDA guidance document "Enforcement Policy Regarding Investigational New Drug Requirements for Use of Fecal Microbiota for Transplantation to Treat *Clostridium difficile* Infection Not Responsive to Standard Therapies" (July 2013), the FDA currently exercises enforcement discretion regarding the IND requirements for the use of FMT to treat CDI not responsive to standard therapies, provided that the treating physician obtains adequate informed consent from the patient or his or her legally authorized representative for the use of FMT products. The FDA provided confirmation that it intends to exercise enforcement discretion with respect to our Phase 1b/2 clinical study of SER-109,and accordingly, we did not conduct this trial under an IND. However, the guidance document states that the FDA will continue to work with any sponsors who wish to submit INDs for this use of FMT, and we intend to conduct all future clinical studies of SER-109, including our Phase 2 clinical study and our planned Phase 3 clinical trial, under an IND.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the biologic and finalize a process for manufacturing the biologic in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and manufacturers must develop, among other things, methods for testing the identity, strength, quality and purity of the final biological product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

BLA Submission and FDA Review

The results of pre-clinical studies and clinical trials, together with other detailed information, including extensive manufacturing information and information on the composition of the biologic, are submitted to the FDA in the form of a BLA requesting approval to market the biologic for one or more specified indications. The submission of a BLA requires payment of a substantial user fee unless a waiver is granted. However, an orphan-designated product, such as our SER-109, is not subject to an application user fee unless the human drug application includes an indication for other than a rare disease or condition. Each BLA submitted to the FDA is reviewed

for administrative completeness and reviewability within 60 days of the FDA's receipt of the application. If the BLA is found to be complete, the FDA will file the BLA, triggering a full review of the application. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission.

Once a BLA has been accepted for filing, by law the FDA has 180 days to review the application and respond to the applicant. However, the review process is often significantly extended by FDA requests for additional information or clarification. Under the Prescription Drug User Fee Act, the FDA has a goal of reviewing BLAs within ten months of the 60-day filing date for standard review or six months for priority review, but the overall timeframe is often extended by FDA requests for additional information or clarification. The FDA reviews a BLA to determine, among other things, whether the biological product is safe, pure and potent and whether the facility or facilities in which it is manufactured meet standards designed to assure the product's continued safety, purity and potency. The FDA may refer the application to an advisory committee for review, evaluation and recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. Before approving a BLA, the FDA will inspect the facility or the facilities at which the biologic product is manufactured, and will not approve the product unless cGMP compliance is satisfactory. The FDA may also inspect the sites at which the clinical trials were conducted to assess their compliance with GCP requirements, and will not approve the biologic unless compliance with such requirements is satisfactory.

The FDA may deny approval of a BLA if the applicable statutory and regulatory criteria are not satisfied, or it may require additional pre-clinical or clinical data. Even if such data are submitted, the FDA may ultimately decide that the BLA does not satisfy the criteria for approval. Data from clinical trials are not always conclusive and the FDA may interpret data differently than sponsors. Once the FDA approves a BLA, such approval defines the indicated uses for which the biologic may be marketed. The FDA may also require implementation of a Risk Evaluation and Mitigation Strategy, or REMS, which can include a medication guide, communication plan, or elements to assure safe use, such as restricted distribution methods, physician training, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling claims or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing regulatory standards is not maintained or if problems occur after the product reaches the market. The FDA may require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing based on the results of these post-marketing studies.

The biologic testing and approval processes encompasses significant risk, and requires substantial time, effort and financial resources, and each may take several years to complete. The FDA may not grant approval on a timely basis, or at all. Even if we believe a clinical trial has demonstrated safety and efficacy of one of our product candidates for the treatment of a disease or condition, the results may not be satisfactory to the FDA. Pre-clinical and clinical data may be interpreted by the FDA in different ways, which could delay, limit or prevent regulatory approval. We may encounter difficulties or unanticipated costs in our efforts to secure necessary governmental approvals which could delay or preclude us from marketing our product candidates. The FDA may limit the indications for use or place other conditions on any approvals that could restrict the commercial application of our products. After approval, certain changes to the approved biologic, such as adding new indications, manufacturing changes or additional labeling claims, are subject to further FDA review and approval. Depending on the nature of the change proposed, a BLA supplement must be filed and approved before the change may be implemented. For many proposed post-approval changes to a BLA, the FDA has up to 180 days to review the application. As with new BLAs, the review process is often significantly extended by the FDA requests for additional information or clarification.

Expedited Development and Review Programs

The FDA maintains several programs intended to facilitate and expedite development and review of new drugs and biologics to address unmet medical needs in the treatment of serious or life- threatening diseases or conditions. These programs include Fast Track designation, Breakthrough Therapy designation, Priority Review designation and Accelerated Approval, and the purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures. SER-109 has obtained Breakthrough Therapy, as well as Orphan Drug, designations.

A new drug or biologic is eligible for fast track designation if it is intended to treat a serious or life- threatening disease or condition and demonstrates the potential to address unmet medical needs for such disease or condition. Fast Track designation provides increased opportunities for sponsor meetings with the FDA during pre-clinical and clinical development, in addition to the potential for rolling review once a marketing application is filed, meaning that the agency may review portions of the marketing application before the sponsor submits the complete application, as well as Priority Review, discussed below. In addition, a new drug or biologic may be eligible for breakthrough therapy designation if it is intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development.

Breakthrough Therapy designation provides all the features of Fast Track designation in addition to intensive guidance on an efficient drug development program beginning as early as Phase 1, and FDA organizational commitment to expedited development, including involvement of senior managers and experienced review staff in a cross-disciplinary review, where appropriate.

Any product submitted to the FDA for approval, including a product with Fast Track or Breakthrough Therapy designation, may also be eligible for additional FDA programs intended to expedite the review process, including Priority Review designation and accelerated approval. A product is eligible for Priority Review if it has the potential to provide a significant improvement in safety or effectiveness in the treatment, diagnosis or prevention of a serious disease or condition. The FDA aims to review applications for new products designated for priority review within six months, compared to ten months under standard review. Additionally, products intended to treat serious or life-threatening diseases or conditions may receive accelerated approval. Products are eligible for accelerated approval if they can be shown to have an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or an effect on a clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality which is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. Accelerated Approval is usually contingent on a sponsor's agreement to conduct additional post-approval studies to verify and describe the product's clinical benefit. In addition, the FDA currently requires, as a condition for accelerated approval, pre-approval of all promotional materials intended for dissemination or publication within 120 days following marketing approval, which could adversely impact the timing of commercial launch of the product.

Fast Track designation, Breakthrough Therapy designation, Priority Review designation and Accelerated Approval do not change the standards for approval but may expedite the development or review process. We have received Breakthrough Therapy designation for SER-109, and we may apply for one or more of the FDA's expedited programs for our other product candidates. The FDA may disagree that our product candidates satisfy the criteria for such programs, such programs may fail to result in expedited development or review timelines, or the FDA may ultimately refuse to approve our product candidates despite their inclusion in any expedited programs. In addition, if the Breakthrough Therapy designation for SER-109 is no longer supported by subsequent data, FDA may rescind the designation.

Post-Approval Requirements

Approved biologics that are manufactured or distributed in the United States are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product distribution, advertising and promotion and reporting of adverse experiences with the product. There also are continuing, annual user fee requirements for products and the establishments at which such products are manufactured, as well as new application fees for certain supplemental applications.

Any biologics manufactured or distributed by us or our contract manufactures pursuant to FDA approvals would be subject to continuing regulation by the FDA, including recordkeeping requirements and reporting of adverse experiences associated with the product. Manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMP, which impose certain procedural and documentation requirements upon us and our contract manufacturers. Failure to comply with statutory and regulatory requirements can subject a manufacturer to possible legal or regulatory action, such as warning letters, suspension of manufacturing, product seizures, injunctions, civil penalties or criminal prosecution. We cannot be certain that we or our present or future third-party manufacturers or suppliers will be able to comply with the cGMP regulations and other ongoing FDA regulatory requirements. If we or our present or future third-party manufacturers or suppliers are not able to comply with these requirements, the FDA may halt our clinical trials, require us to recall a product from distribution or withdraw approval of the BLA for that product.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, requirements for post-market studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve applications or supplements to approved applications, or suspension or revocation of product approvals;

- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA closely regulates the post-approval marketing and promotion of biologics, including standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities, and promotional activities involving the internet and social media. A company can make only those claims relating to safety and efficacy that are approved by the FDA. Physicians may prescribe legally available biologics for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, impose stringent restrictions on manufacturers' communications regarding off-label use. Failure to comply with these requirements can result in adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties.

Biosimilars and Regulatory Exclusivity

We believe that any of our product candidates approved under a BLA should qualify for a 12-year period of exclusivity against biosimilar competition currently permitted by the Biologics Price Competition and Innovation Act, or BPCIA. Specifically, as part of the Patient Protection and Affordable Care Act enacted in 2010, as amended by the Health Care and Education Affordability Reconciliation Act, collectively the Affordable Care Act, the BPCIA established an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The new abbreviated regulatory pathway provides legal authority for the FDA to review and approve biosimilar biologics based on their similarity to an existing brand product, referred to as a reference product, including the possible designation of a biosimilar as interchangeable with a brand product. Under the BPCIA the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological drug products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. The BPCIA is complex and is only beginning to be interpreted and implemented by the FDA. As a result, its ultimate impact, implementation and meaning is subject to uncertainty. While it is uncertain when any such processes may be fully adopted by the FDA, any such processes that operate to limit the scope or length of exclusivity afforded by the BPCIA could have a material adverse effect on the future commercial prospects for our biological products. In addition, the period of exclusivity provided by the BPCIA only operates against third parties seeking approval via the abbreviated pathway, but would not prevent third parties from pursuing approval via the traditional approval pathway. In addition, foreign regulatory authorities may also provide for exclusivity periods for approved biological products. For example, biological products in the EU may be eligible for at least a ten-year period of exclusivity.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the United States, or if it affects more than 200,000 individuals in the United States, there is no reasonable expectation that the cost of developing and making the product available in the United States for the disease or condition will be recovered from sales of the product. Orphan designation must be requested before submitting a BLA. Orphan designation does not convey any advantage in or shorten the duration of the regulatory review and approval process, though companies developing orphan products are eligible for certain incentives, including tax credits for qualified clinical testing and waiver of application fees.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to a seven-year period of marketing exclusivity during which the FDA may not approve any other applications to market the same therapeutic agent for the same indication, except in limited circumstances, such as a subsequent product's showing of clinical superiority over the product with orphan exclusivity. Competitors, however, may receive approval of different therapeutic agents for the indication for which the orphan product has exclusivity or obtain approval for the same therapeutic agent for a different indication than that for which the orphan product has exclusivity. Orphan product exclusivity could block the approval of one of our products for seven years if a competitor obtains approval for the same therapeutic agent for the same indication before we do, unless we are able to demonstrate that our product is clinically superior. Further, if a designated orphan product receives marketing approval for an indication broader than the rare disease or condition for which it received orphan designation, it may not be entitled to orphan exclusivity.

In August 2015, the FDA granted orphan drug designation to SER-109.

We may seek orphan designation for one or more of our product candidates, but the FDA may disagree with our analysis of the prevalence of a disease or condition or other criteria for designation and refuse to grant orphan status. We cannot guarantee that we will obtain designation or approval for any product candidate, or that we will be able to secure orphan product exclusivity if we do obtain approval.

Government Regulation Outside of the United States

To market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials, marketing authorization, manufacturing, commercial sales and distribution of our products.

For instance, in the EEA (comprised of the 28 EU Member States plus Iceland, Liechtenstein and Norway) medicinal products must be authorized for marketing by using either the centralized authorization procedure or national authorization procedures.

Centralized procedure—Under the centralized procedure, following the opining of the EMA's Committee for Medicinal Products for Human Use, or, CHMP, the European Commission issues a single marketing authorization valid across the EEA. The centralized procedure is compulsory for human medicines derived from biotechnology processes advanced therapy medicinal products (such as gene therapy, somatic cell therapy and tissue engineered products), products that contain a new active substance indicated for the treatment of certain diseases, such as HIV/AIDS, cancer, neurodegenerative disorders, diabetes, autoimmune diseases and other immune dysfunctions, viral diseases, and officially designated orphan medicines. For medicines that do not fall within these categories, an applicant has the option of submitting an application for a centralized marketing authorization to the EMA, as long as the medicine concerned contains a new active substance not yet authorized in the EEA, is a significant therapeutic, scientific or technical innovation, or if its authorization would be in the interest of public health in the EEA. Under the centralized procedure the maximum timeframe for the evaluation of an MAA by the EMA is 210 days, excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the CHMP. Accelerated assessment might be granted by the CHMP in exceptional cases, when a medicinal product is expected to be of a major public health interest, particularly from the point of view of therapeutic innovation. The timeframe for the evaluation of an MAA under the accelerated assessment procedure is 150 days, excluding clock stops.

National authorization procedures—There are also two other possible routes to authorize medicinal products in several countries, which are available for products that fall outside the scope of the centralized procedure:

- *Decentralized procedure*. Using the decentralized procedure, an applicant may apply for simultaneous authorization in more than one EU country of medicinal products that have not yet been authorized in any EU country and that do not fall within the mandatory scope of the centralized procedure.
- *Mutual recognition procedure*. In the mutual recognition procedure, a medicine is first authorized in one EU Member State, in accordance with the national procedures of that country. Following this, further marketing authorizations can be sought from other EU countries in a procedure whereby the countries concerned recognize the validity of the original, national marketing authorization.

In the EEA, new products authorized for marketing (*i.e.*, reference products) qualify for eight years of data exclusivity and an additional two years of market exclusivity upon marketing authorization. The data exclusivity period prevents generic or biosimilar applicants from relying on the preclinical and clinical trial data contained in the dossier of the reference product when applying for a generic or biosimilar marketing authorization in the EU during a period of eight years from the date on which the reference product was first authorized in the EU. The market exclusivity period prevents a successful generic or biosimilar applicant from commercializing its product in the EU until ten years have elapsed from the initial authorization of the reference product in the EU. The ten-year market exclusivity period can be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

The criteria for designating an "orphan medicinal product" in the EEA are similar in principle to those in the United States. In the EEA a medicinal product may be designated as orphan if (1) it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition; (2) either (a) such condition affects no more than five in 10,000 persons in the EU when the application is made, or (b) the product, without the benefits derived from orphan status, would not generate sufficient return in the EU to justify investment; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the EU, or if such a method exists, the product will be of significant benefit to those affected by the condition. Orphan medicinal products are eligible for financial incentives such as reduction of fees or fee waivers and are, upon grant of a marketing authorization, entitled to ten years of market exclusivity for the approved therapeutic indication. During this ten year orphan market exclusivity period, no similar medicinal product for the same indication may be placed on the market. An orphan product can also obtain an additional two years of market exclusivity in the EU for pediatric studies. The ten year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation, for example, if the product is sufficiently profitable not to justify maintenance of market exclusivity. Additionally, marketing authorization may be granted to a similar product for the same indication at any time if (i) the second applicant can establish that its product, although similar, is safer, more effective or otherwise clinically superior; (ii) the applicant consents to a second orphan medicinal product application; or (iii) the applicant cannot supply enough orphan medicinal product.

Other Healthcare Laws

Although we currently do not have any products on the market, if our product candidates are approved and we begin commercialization, we will be subject to healthcare regulation and enforcement by the federal government and the states in which we conduct our business. These laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, privacy and security and physician sunshine laws and regulations.

The federal Anti-Kickback Statute prohibits the offer, receipt, or payment of remuneration in exchange for or to induce the referral of patients or the use of products or services that would be paid for in whole or part by Medicare, Medicaid or other federal healthcare programs. Remuneration has been broadly defined to include anything of value, including cash, improper discounts and free or reduced price items and services. The government has enforced the Anti-Kickback Statute to reach large settlements with healthcare companies based on sham research or consulting and other financial arrangements with physicians. Further, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act (discussed below). Many states have similar laws that apply to their state healthcare programs as well as private payors.

The False Claims Act, or FCA, imposes liability on persons who, among other things, present or cause to be presented false or fraudulent claims for payment by a federal health care program. The FCA has been used to prosecute persons submitting claims for payment that are inaccurate or fraudulent, that are for services not provided as claimed, or for services that are not medically necessary. Actions under the FCA may be brought by the Attorney General or as a qui tam action by a private individual in the name of the government. Violations of the FCA can result in significant monetary penalties and treble damages. The federal government is using the FCA, and the accompanying threat of significant liability, in its investigation and prosecution of pharmaceutical and biotechnology companies throughout the country, for example, in connection with the promotion of products for unapproved uses and other sales and marketing practices. The government has obtained multi-million and multi–billion dollar settlements under the FCA in addition to individual criminal convictions under applicable criminal statutes. In addition, companies have been forced to implement extensive corrective action plans, and have often become subject to consent decrees or corporate integrity agreements, severely restricting the manner in which they conduct their business. Given the significant size of actual and potential settlements, it is expected that the government will continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws.

In addition, there has been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The Affordable Care Act, among other things, imposed new reporting requirements on certain drug manufacturers for payments made by them to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Failure to submit required information may result in civil monetary penalties of up to an aggregate of $150,000 per year (or up to an aggregate of $1 million per year for "knowing failures"), for all payments, transfers of value or ownership or investment interests that are not timely, accurately and completely reported in an annual submission. Drug must submit reports by the 90th day of each subsequent calendar year. Certain states also mandate implementation of compliance programs, impose restrictions on drug manufacturer marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians.

We may also be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and their respective implementing regulations, including the final omnibus rule published on January 25, 2013, imposes specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

The shifting commercial compliance environment and the need to build and maintain robust systems to comply with different compliance and/or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may violate one or more of the requirements. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

Coverage and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In both domestic and foreign markets, sales and reimbursement of any approved products will depend, in part, on the extent to which third-party payors, such as government health programs, commercial insurance and managed healthcare organizations provide coverage, and establish adequate reimbursement levels for, such products. Third-party payors are increasingly challenging the prices charged for medical products and services and imposing controls to manage costs. Third-party payors may limit, or hinder, coverage to specific products on an approved list, also known as a formulary, which might not include all of the FDA-approved products for a particular indication. Additionally, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products, as well as provide rebates and discounts which may impact the net selling price of our products. If third-party payors do not consider our products to be cost-effective compared to other therapies, the payors may not cover our products as a benefit under their plans or, if they do, the level of reimbursement may not be sufficient to allow us to sell our products on a profitable basis.

The containment of healthcare costs also has become a priority of federal and state governments and the prices of drugs have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results.

Outside the United States, ensuring adequate coverage and payment for our products will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of our product candidates or products to other available therapies. Conducting such a clinical trial could be expensive and result in delays in our commercialization efforts. Third-party payors are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly approved healthcare products. Recent budgetary pressures in many countries are also causing governments to consider or implement various cost-containment measures, such as price freezes, increased price cuts and rebates. If budget pressures continue, governments may implement additional cost-containment measures. Cost-control initiatives could decrease the price we might establish for products that we may develop or sell, which would result in lower product revenues or royalties payable to us. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products.

Healthcare Reform

In the United States, there have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biological products, government control and other changes to the healthcare system. It is uncertain what legislative proposals will be adopted or what actions federal, state or private payors for medical goods and services may take in

response to any healthcare reform proposals or legislation. We cannot predict the effect medical or healthcare reforms may have on our business, and no assurance can be given that any such reforms will not have a material adverse effect.

By way of example, in March 2010, the Affordable Care Act was signed into law, which, among other things, includes changes to the coverage and payment for drug products under government health care programs. Among other things, the Affordable Care Act:

- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of ''average manufacturer price,'' or AMP, for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices;
- extended Medicaid drug rebates, previously due only on fee-for-service utilization, to Medicaid managed care utilization, and created an alternate rebate formula for new formulations of certain existing products that is intended to increase the amount of rebates due on those drugs;
- expanded the types of entities eligible for the 340B drug discount program that mandates discounts to certain hospitals, community centers and other qualifying providers. With the exception of children's hospitals, these newly eligible entities will not be eligible to receive discounted 340B pricing on orphan drugs. In addition, because 340B pricing is determined based on AMP and Medicaid drug rebate data, the revisions to the Medicaid rebate formula and AMP definition described above could cause the required 340B discounts to increase; and
- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 50% point-of-sale-discount off the negotiated price of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments, will remain in effect through 2024 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several providers, including hospitals. Adoption of other new legislation at the federal or state level could further limit reimbursement for pharmaceuticals, including our product candidates if approved.

As of December 31, 2015, we had 86 full-time permanent employees. Thirteen employees work in administration and operations and seventy-three work in research and development.

Our Corporate Information

We were incorporated in the State of Delaware in 2010 under the name Newco LS21, Inc. In October 2011, we changed our name to Seres Health, Inc., and in May 2015, we changed our name to Seres Therapeutics, Inc. Our principal executive offices are located at 215 First Street, Cambridge, Massachusetts 02142 and our telephone number is (617) 945-9626. Our website address is *www.serestherapeutics.com*. The information contained in, or accessible through, our website does not constitute a part of this annual report on Form 10-K.

Item 1A. Risk Factors

Our business faces significant risks and uncertainties. Accordingly, in evaluating our business, you should carefully consider the risk factors discussed below, as well as the other information in this Annual Report on Form 10-K, including our consolidated financial statements and the related notes and "Management's Discussion and Analysis of Results of Operations and Financial Condition.". The occurrence of any of the events or developments described below or elsewhere in this report could harm our business, financial condition, results of operations or growth prospects.

Risks Related to Our Financial Position and Need for Additional Capital

We are a development-stage company and have incurred significant losses since our inception. We expect to incur losses for the foreseeable future and may never achieve or maintain profitability.

Since inception, we have incurred significant operating losses. Our net loss was $6.1 million for the year ended December 31, 2013, $16.7 million for the year ended December 31, 2014 and $54.8 million for the year ended December 31, 2015, respectively. As of December 31, 2015, we had an accumulated deficit of $82.6 million. To date, we have financed our operations through the initial public offering of our common stock, private placements of our preferred stock, and the issuance of convertible promissory notes and borrowings under a loan and security agreement with Comerica Bank, or the loan and security agreement. We have devoted substantially all of our financial resources and efforts to developing our microbiome therapeutics platform, identifying potential product candidates and conducting pre-clinical studies and clinical trials. We are in the early stages of development of our product candidates, which we call Ecobiotic microbiome therapeutics, and we have not completed development of any Ecobiotic microbiome therapeutics or other drugs or biologics. We expect to continue to incur significant expenses and operating losses for the foreseeable future. We anticipate that our expenses will increase substantially as we:

- conduct our Phase 2 clinical study of SER-109, our lead product candidate, and potentially advance to Phase 3 clinical studies;
- conduct our Phase 1 clinical study of SER-287;
- continue the research and development of our other product candidates, including completing pre-clinical studies and commencing clinical trials for SER-262 and SER-155;
- seek to enhance our microbiome therapeutics platform and discover and develop additional product candidates;
- seek regulatory approvals for any product candidates that successfully complete clinical trials;
- potentially establish a sales, marketing and distribution infrastructure and scale-up manufacturing capabilities to commercialize any products for which we may obtain regulatory approval;
- maintain, expand and protect our intellectual property portfolio;
- add clinical, scientific, operational, financial and management information systems and personnel, including personnel to support our product development and potential future commercialization efforts and to support our operation as a public company; and
- experience any delays or encounter any issues with any of the above, including but not limited to failed studies, complex results, safety issues or other regulatory challenges.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing pre-clinical testing and clinical trials of our product candidates, discovering additional product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing and selling any products for which we may obtain regulatory approval. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenue that is significant enough to achieve profitability.

Because of the numerous risks and uncertainties associated with pharmaceutical product and biological development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. If we are required by the U.S. Food and Drug Administration, or FDA, or the European Medicines Agency, or EMA, or other regulatory authorities to perform studies in addition to those currently expected, or if there are any delays in completing our clinical trials or the development of any of our product candidates, our expenses could increase and revenue could be further delayed.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress our value and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product offerings or even continue our operations.

We will need additional funding in order to complete development of our product candidates and commercialize our products, if approved. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

We expect our expenses to increase in connection with our ongoing activities, particularly as we conduct our Phase 2 clinical study of SER-109 and our Phase 1 clinical study of SER-287, and continue to research, develop and initiate clinical trials of SER-262 and SER-155 and our other product candidates. In addition, if we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Furthermore, we have incurred and expect to continue to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

We expect that our existing cash, cash equivalents and investments will enable us to fund our operating expenses and capital expenditure requirements well into 2018. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- the progress and results of our Phase 2 clinical study of SER-109 and our Phase 1b clinical study of SER-287, as well as future clinical studies for these candidates;
- the cost of manufacturing clinical supplies of our product candidates;
- the scope, progress, results and costs of pre-clinical development, laboratory testing and clinical trials for our other product candidates, including SER-262 and SER-155;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in businesses, products and technologies, including entering into licensing or collaboration arrangements for product candidates

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness could result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell, or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborators or others at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay, or discontinue one or more of our research or development programs or the commercialization of any product candidates, or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

Since our inception in October 2010, we have devoted substantially all of our resources to developing SER-109 and SER-287, researching SER-262, building our intellectual property portfolio, developing our supply chain, planning our business, raising capital and providing general and administrative support for these operations. All but two of our product candidates, SER-109 and SER-287, are still in pre-clinical development. We have completed our Phase 1b/2 clinical study of SER-109, our lead product candidate, but have not completed any other clinical trials for this or any other product candidate. We have not yet demonstrated our ability to successfully complete any Phase 2 clinical study or any Phase 3 or other pivotal clinical trials, obtain regulatory approvals, manufacture a commercial scale product, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Additionally, we expect our financial condition and operating results to continue to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

Risks Related to the Discovery, Development and Regulatory Approval of Our Product Candidates

We are very early in our development efforts and may not be successful in our efforts to use our microbiome therapeutics platform to build a pipeline of product candidates and develop marketable drugs.

We are using our microbiome therapeutics platform to develop Ecobiotic microbiome therapeutics, with an initial focus on developing SER-109 for the prevention of further recurrences of CDI in patients suffering from recurrent CDI and SER-287 for the treatment of ulcerative colitis. While we believe our pre-clinical and Phase 1b/2 clinical data to date has validated our platform to a degree, we are at an early stage of development and our platform has not yet, and may never lead to, approvable or marketable drugs. We are developing additional product candidates that we intend to be used to prevent non-*Clostridium difficile* infection and to treat inflammatory and metabolic diseases. We may have problems applying our technologies to these other areas, and our new product candidates may not be as effective in preventing infection and disease as our initial product candidates. Even if we are successful in identifying additional product candidates, they may not be suitable for clinical development, including as a result of their harmful side effects, limited efficacy or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance. The success of our product candidates will depend on several factors, including the following:

- completion of pre-clinical studies and clinical trials with positive results;
- receipt of marketing approvals from applicable regulatory authorities;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- making arrangements with third-party manufacturers for, or establishing our own, commercial manufacturing capabilities;
- launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- entering into new collaborations throughout the development process as appropriate, from pre- clinical studies through to commercialization;
- acceptance of our products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining coverage and adequate reimbursement by third-party payors, including government payors, for our products, if approved;
- protecting our rights in our intellectual property portfolio;
- operating without infringing or violating the valid and enforceable patents or other intellectual property of third parties;
- maintaining a continued acceptable safety profile of the products following approval; and
- maintaining and growing an organization of scientists and business people who can develop and commercialize our products and technology.

If we do not successfully develop and commercialize product candidates based upon our technological approach, we will not be able to obtain product revenue in future periods, which likely would result in significant harm to our financial position and adversely affect our stock price.

Our product candidates are based on microbiome therapeutics, which is an unproven approach to therapeutic intervention.

All of our product candidates are based on microbiome therapy, a therapeutic approach that is designed to treat disease by restoring the function of a dysbiotic microbiome. We have not, nor to our knowledge has any other company, received regulatory approval for a therapeutic based on this approach. We cannot be certain that our approach will lead to the development of approvable or marketable products. In addition, our Ecobiotic microbiome therapeutics may have different effectiveness rates in various indications and in different geographical areas. Finally, the FDA or other regulatory agencies may lack experience in evaluating the safety and efficacy of products based on microbiome therapeutics, which could result in a longer than expected regulatory review process, increase our expected development costs and delay or prevent commercialization of our product candidates.

Our microbiome therapeutics platform relies on third parties for biological materials, including human stool. Some biological materials have not always met our expectations or requirements, and any disruption in the supply of these biological materials could materially adversely affect our business. For example, if any supplied biological materials are contaminated with disease organisms, we would not be able to use such biological materials. Although we have control processes and screening procedures, biological materials are susceptible to damage and contamination and may contain active pathogens. Improper storage of these materials, by us or any third-party suppliers, may require us to destroy some of our raw materials or products, which could delay the development or commercialization of our product.

Clinical drug development involves a risky, lengthy and expensive process, with an uncertain outcome. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

We dosed the first patient in a Phase 2 clinical study of our lead product, SER-109, in May 2015. In December 2015, we initiated a Phase 1b clinical trial evaluating SER-287 in mild-to-moderate ulcerative colitis. Our other product candidates are in pre-clinical development. It is impossible to predict when or if any of our product candidates will prove effective and safe in humans or will receive regulatory approval, and the risk of failure through the development process is high. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete pre-clinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. A failed clinical trial can occur at any stage of testing. The outcome of pre-clinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. For example, in anticipation of our Phase 2 clinical study of SER-109, we have refined the formulation of the inner capsule and changed the manufacturing process that we expect to use for commercial production. This formulation has not previously been clinically tested. The Phase 2 clinical study is the first clinical trial using this formulation and we cannot assure you that the results of this new formulation will be consistent with those experienced in the Phase 1b/2 clinical study of SER-109. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier studies, and we cannot be certain that we will not face similar setbacks.

In addition, we cannot be certain as to what type and how many clinical trials the FDA, or other regulators, will require us to conduct before we may successfully gain approval to market SER-109 or any of our other product candidates. Prior to approving a new therapeutic product, the FDA generally requires that safety and efficacy be demonstrated in two adequate and well-controlled clinical trials. In some situations, evidence from a Phase 2 trial and a Phase 3 trial or from a single Phase 3 trial can be sufficient for FDA approval, such as in cases where the trial or trials provide highly reliable and statistically strong evidence of an important clinical benefit. In the course of our discussions with the FDA, the FDA has indicated that we may be required to conduct more than one Phase 3 clinical trial of SER-109 in order to gain approval. Additional clinical trials could cause us to incur significant development costs, delay or prevent the commercialization of SER-109 or otherwise adversely affect our business.

We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize our product candidates, including:

- regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- clinical trials of our product candidates may demonstrate undesirable side effects or produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;

- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- we may have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding that the participants are being exposed to unacceptable health risks;
- regulators or institutional review boards may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our product candidates may be greater than we anticipate;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate;
- regulators may revise the requirements for approving our product candidates, or such requirements may not be as we anticipate; and
- regarding trials managed by any future collaborators, our collaborators may face any of the above issues, and may conduct clinical trials in ways they view as advantageous to them but potentially suboptimal for us.

If we are required to conduct additional clinical trials or other testing of our product candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our product candidates;
- lose the support of current or any future collaborators, requiring us to bear more of the burden of development of certain compounds;
- not obtain marketing approval at all;
- obtain marketing approval in some countries and not in others;
- obtain approval for indications or patient populations that are not as broad as we intend or desire;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements;
- be subject to increased pricing pressure ; or
- have the product removed from the market after obtaining marketing approval.

We completed our Phase 1b/2 clinical study of SER-109 in 2014 and dosed the first patient in a Phase 2 clinical study for this product candidate in May 2015. Although most clinical research performed in the United States must be authorized in advance by the FDA under its investigational new drug application, or IND, regulations, we did not conduct our Phase 1b/2 clinical study under an IND pursuant to the FDA's exercise of enforcement discretion with regard to IND requirements for use of fecal microbiota for transplantation to treat CDI not responsive to standard therapies. Although the FDA provided confirmation that it intends to exercise enforcement discretion with respect to our Phase 1b/2 clinical study of SER-109, it stated that continued clinical evaluation of SER-109 will require an IND. In April 2015, the FDA authorized the conduct of our Phase 2 clinical study of SER-109 under an IND. We intend to conduct all future clinical studies of SER-109 under this IND. Unlike with SER-109, we expect that the FDA will require an IND before we initiate clinical testing of our other product candidates and may also require us to conduct more extensive pre-clinical tests prior to the start of clinical trials than were required for SER-109.

Our product development costs will increase if we experience delays in clinical testing or marketing approvals. We do not know whether any of our pre-clinical studies or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant pre- clinical or clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, potentially impairing our ability to successfully commercialize our product candidates and harming our business and results of operations.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. We are developing our lead product candidate, SER-109, to prevent further recurrences of CDI in patients suffering from recurrent CDI. We estimate the addressable population of patients with recurrent CDI to be between 85,000 and 110,000 patients per year in the United States, and accordingly, there is a limited number of patients from which to draw for clinical studies.

Patient enrollment is also affected by other factors including:

- the severity of the disease under investigation;
- the patient eligibility criteria for the study in question;
- the perceived risks and benefits of the product candidate under study;
- the availability of other treatments for the disease under investigation;
- the existence of competing clinical trials;
- the efforts to facilitate timely enrollment in clinical trials;
- our payments for conducting clinical trials;
- the patient referral practices of physicians;
- the burden, or perceived burden, of the clinical study;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize our product candidates or will not be able to do so as soon as anticipated, and our ability to generate revenue will be materially impaired.

Our product candidates and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by the EMA and similar regulatory authorities outside the United States. Failure to obtain marketing approval for a product candidate in any jurisdiction will prevent us from commercializing the product candidate in that jurisdiction, and may affect our plans for commercialization in other jurisdictions as well. We have not received approval to market any of our product candidates from regulatory authorities in any jurisdiction. We have only limited experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third parties to assist us in this process. Securing marketing approval requires the submission of extensive pre-clinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities. Our product candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, risky and may take many years. The scope and amount of clinical data required to obtain marketing approvals can vary substantially from jurisdiction to jurisdiction, and it may be difficult to predict whether a particular regulatory body will require additional or different studies than those conducted by a sponsor, especially for novel product candidates such as our Ecobiotic microbiome therapeutics. The FDA or foreign regulatory authorities may delay, limit, or deny approval to market our product candidates for many reasons, including: our inability to demonstrate that the clinical benefits of our product candidates outweigh any safety or other perceived risks; the regulatory authority's disagreement with the interpretation of data from nonclinical or clinical studies; the regulatory agency's requirement that we conduct additional pre-clinical studies and clinical trials; changes in marketing approval policies during the development period;

changes in or the enactment of additional statutes or regulations, or changes in regulatory review process for each submitted product application; or the regulatory authority's failure to approve the manufacturing processes or third-party manufacturers with which we contract. Regulatory authorities have substantial discretion in the approval process and may refuse to accept a marketing application as deficient. In addition, varying interpretations of the data obtained from pre-clinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable. Of the large number of drugs in development, only a small percentage successfully complete the FDA or other regulatory approval processes and are commercialized.

Furthermore, our product candidates may not receive marketing approval even if they achieve their specified endpoints in clinical trials. Clinical data is often susceptible to varying interpretations and many companies that have believed that their products performed satisfactorily in clinical trials have nonetheless failed to obtain regulatory agency approval for their products. The FDA or foreign regulatory authorities may disagree with our trial design and our interpretation of data from nonclinical and clinical studies. Upon the FDA's review of data from any pivotal trial, it may request that the sponsor conduct additional analyses of the data and, if it believes the data are not satisfactory, could advise the sponsor to delay filing a marketing application.

Even if we eventually complete clinical testing and receive approval of a biologics license application, or BLA, or foreign marketing authorization for one of our product candidates, the FDA or the applicable foreign regulatory agency may grant approval contingent on the performance of costly additional clinical trials which may be required after approval. The FDA or the applicable foreign regulatory agency may also approve our therapeutic candidates for a more limited indication and/or a narrower patient population than we originally request, and the FDA, or applicable foreign regulatory agency, may not approve the labeling that we believe is necessary or desirable for the successful commercialization of our therapeutic candidates. Any delay in obtaining, or inability to obtain, applicable regulatory approval would delay or prevent commercialization of our therapeutic candidates and would materially adversely impact our business and prospects.

The development of therapeutic products targeting the underlying biology of the human microbiome is an emerging field, and it is possible that the FDA and other regulatory authorities could issue regulations or new policies in the future affecting our Ecobiotic microbiome therapeutics that could adversely affect our product candidates.

If we experience delays in obtaining approval or if we fail to obtain approval of our product candidates, the commercial prospects for our product candidates may be harmed and our ability to generate revenues will be materially impaired.

A Fast Track designation by the FDA may not actually lead to a faster development or regulatory review or approval process.

We may seek Fast Track designation for some of our product candidates. If a drug or biologic is intended for the treatment of a serious or life-threatening condition and nonclinical or clinical data demonstrate the potential to address unmet medical needs for this condition, the drug or biologic sponsor may apply for FDA Fast Track designation. Fast Track designation provides increased opportunities for sponsor meetings with the FDA during pre-clinical and clinical development, in addition to the potential for rolling review once a marketing application is filed. The FDA has broad discretion whether or not to grant this designation, and even if we believe a particular product candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive Fast Track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. Fast Track designation does not assure ultimate approval by the FDA. The FDA may withdraw Fast Track designation if it believes that the designation is no longer supported by data from our clinical development program.

A Breakthrough Therapy designation by the FDA for our product candidates may not lead to a faster development, regulatory review or approval process, and it does not increase the likelihood that our product candidates will receive marketing approval.

We have received Breakthrough Therapy designation for SER-109, and we may seek a Breakthrough Therapy designation for our other product candidates. A Breakthrough Therapy is defined as a drug or biologic that is intended to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug or biologic may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed in early clinical development. For drugs that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor can help to identify the most efficient path for clinical development. Drugs designated as breakthrough therapies by the FDA are also eligible for rolling review of the associated marketing application, meaning that the agency may review portions of the marketing application before the sponsor submits the complete application, as well as priority review, where the agency aims to act on the application within eight months.

Designation as a Breakthrough Therapy is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for designation as a Breakthrough Therapy, the FDA may disagree and instead determine not to make

such designation. The availability of Breakthrough Therapy designation was established recently with the passage of the Food and Drug Administration Safety and Innovation Act of 2012, and the FDA has only recently released additional guidance as to the criteria it uses in designating drugs as breakthrough therapies. As a result, we cannot be sure that our evaluation of our product candidates as qualifying for Breakthrough Therapy designation will meet the FDA's expectations. In any event, the receipt of a Breakthrough Therapy designation for a product candidate may not result in a faster development process, review or approval compared to conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, not all products designated as breakthrough therapies ultimately will be shown to have the substantial improvement over available therapies suggested by the preliminary clinical evidence at the time of designation. As a result, if the Breakthrough Therapy designation for SER-109 or any future designation we receive is no longer supported by subsequent data, the FDA may rescind the designation.

We may seek orphan drug designation for some of our product candidates, but may not be able to obtain it.We have obtained orphan drug designation for SER-109 for recurrent *C. difficile* infection and may seek orphan drug designation and exclusivity for some of our future product candidates. Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs and biologics for relatively small patient populations as orphan drugs. In the United States, the FDA may designate a drug or biologic as an orphan drug if it is intended to treat a rare disease or condition, which is defined as a disease or condition that affects fewer than 200,000 individuals annually in the United States.

Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the EMA or the FDA from approving another marketing application for the same drug or biologic for that time period. The applicable period is seven years in the United States and ten years in Europe. The European exclusivity period can be reduced to six years if a product no longer meets the criteria for orphan drug designation or if the product is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure a sufficient quantity of the drug or biologic to meet the needs of patients with the rare disease or condition.

Orphan drug exclusivity for a product may not effectively protect the product from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Risks Related to our Dependence on Third Parties and Manufacturing

The Collaboration and License Agreement, or the License Agreement, with Nestec Ltd., or NHS, is important to our business. If we or NHS fail to adequately perform under the License Agreement, or if we or NHS terminate the License Agreement, the development and commercialization of our CDI and IBD product candidates, including SER-109 and SER-287, would be delayed or terminated and our business would be adversely affected

The License Agreement may be terminated:

- by NHS in the event of serious safety issues related to SER-109, SER-262, SER-287, SER-301 or other specific products added under the License Agreement, or, collectively, the NHS Collaboration Products;
- by us if NHS challenges the validity or enforceability of any of our licensed patents; and
- by either NHS or us in the event of the other party's uncured material breach or insolvency.

Upon termination of the License Agreement, all licenses granted to NHS by us will terminate, and all rights in and to the NHS Collaboration Products held by NHS will revert to us. If we commit a material breach of the License Agreement, NHS may elect not to terminate the License Agreement but instead apply specified adjustments to its payment obligations and other terms and conditions of the License Agreement. If NHS were to make such adjustments, the funding from and benefits of the License Agreement could be diminished, which could adversely affect our financial condition. Unless the License Agreement is terminated by us for NHS' uncured material breach, upon termination of the License Agreement, NHS will be eligible to receive post-termination royalties from us until NHS has recouped certain development costs related to the NHS Collaboration Products and specified percentages of any milestone payments paid to us under the License Agreement prior to termination, which could have a material adverse effect on our business.

Termination of the License Agreement could cause significant delays in our product development and commercialization efforts that could prevent us from commercializing our CDI and IBD product candidates, including SER-109 and SER-287, outside of

the United States and Canada, without first expanding our internal capabilities or entering into another agreement with a third party. Any alternative collaboration or license could also be on less favorable terms to us. In addition, under the License Agreement, NHS agreed to provide funding for certain clinical development activities. If the License Agreement were terminated, we may need to refund those payments and seek additional financing to support the research and development of any terminated products or discontinue any terminated products, which could have a material adverse effect on our business.

Under the License Agreement, we are dependent upon NHS to successfully commercialize any NHS Collaboration Products, including SER-109 and SER-287, outside of the United States and Canada. We cannot directly control NHS' commercialization activities or the resources it allocates to our product candidates. Our interests and NHS' interests may differ or conflict from time to time, or we may disagree with NHS' level of effort or resource allocation. NHS may internally prioritize our product candidates differently than we do or it may not allocate sufficient resources to effectively or optimally commercialize them. If these events were to occur, our business would be adversely affected.

We rely, and expect to continue to rely, on third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We expect to continue to rely on third parties, such as contract research organizations, or CROs, clinical data management organizations, medical institutions and clinical investigators, to conduct and manage our clinical trials.

Our reliance on these third parties for research and development activities will reduce our control over these activities but does not relieve us of our responsibilities. For example, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with regulatory standards, commonly referred to as good clinical practices, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, safety and welfare of trial participants are protected. Other countries' regulatory agencies also have requirements for clinical trials with which we must comply. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, *ClinicalTrials.gov*, within specified timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. If these third parties do not successfully carry out their contractual duties, do not meet expected deadlines, experience work stoppages, terminate their agreements with us or need to be replaced, or do not conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we may need to enter into new arrangements with alternative third parties, which could be difficult, costly or impossible, and our clinical trials may be extended, delayed, or terminated or may need to be repeated. If any of the foregoing occur, we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates and may not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential product revenue.

We rely on third parties for the manufacture of our product candidates for pre-clinical and clinical testing and expect to continue to do so for the foreseeable future. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or that such quantities may not be available at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates for pre-clinical and clinical testing, as well as for commercial manufacture if any of our product candidates receive marketing approval. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates on a timely basis or at all, or that such quantities will be available at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts.

We may be unable to establish any agreements with third-party manufacturers on acceptable terms or at all. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- failure of third-party manufacturers to comply with regulatory requirements and maintain quality assurance;
- breach of manufacturing agreements by the third-party manufacturers;
- failure to manufacture our product according to our specifications;

- failure to manufacture our product according to our schedule or at all;
- misappropriation or disclosure of our proprietary information, including our trade secrets and know-how; and
- termination or nonrenewal of agreements by third-party manufacturers at times that are costly or inconvenient for us.

Third-party manufacturers may not be able to comply with current good manufacturing processes, or cGMP, regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocations, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products. The contract manufacturer we rely on to produce SER-109 and SER-287 has never produced a FDA-approved therapeutic. If our contract manufacturer is unable to comply with cGMP regulation or if the FDA does not approve their facility upon a pre-approval inspection, our therapeutic candidates may not be approved or may be delayed in obtaining approval. In addition, there are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing our products. Therefore, our product candidates and any future products that we may develop may compete with other products for access to manufacturing facilities. Any failure to gain access to these limited manufacturing facilities could severely impact the clinical development, marketing approval and commercialization of our product candidates.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. Except for a backup facility in California, we do not currently have arrangements in place for redundant supply or a second source for required raw materials used in the manufacture of our product candidates or for the manufacture of finished SER-109 product. If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers and we may be unable to replace them on a timely basis or at all. Our current and anticipated future dependence upon others for the manufacture of our product candidates or products could delay, prevent or impair our development and commercialization efforts.

We have no experience manufacturing our product candidates at commercial scale, and if we decide to establish our own manufacturing facility, we cannot assure you that we can manufacture our product candidates in compliance with regulations at a cost or in quantities necessary to make them commercially viable.

We have a pilot manufacturing facility at our Cambridge location where we conduct process development, scale-up activities and a portion of the manufacture of Ecobiotic microbiome therapeutics. The FDA and other comparable foreign regulatory agencies must, pursuant to inspections that are conducted after submitting a BLA or relevant foreign marketing submission, confirm that the manufacturing processes for the product meet cGMP. We do not have any manufacturing facilities that meet the FDA's cGMP requirements for the production of any product candidates used in humans.

We may establish a manufacturing facility for our product candidates for production at a commercial scale. We have no experience in commercial-scale manufacturing of our product candidates. We currently intend to develop our manufacturing capacity in part by expanding our current facility or building additional facilities. We expect our new headquarters in Cambridge, MA to expand our existing clinical supply manufacturing capabilities. This activity will require substantial additional funds and we would need to hire and train significant numbers of qualified employees to staff these facilities. We may not be able to develop commercial-scale manufacturing facilities that are adequate to produce materials for additional later-stage clinical trials or commercial use.

The equipment and facilities employed in the manufacture of pharmaceuticals are subject to stringent qualification requirements by regulatory agencies, including validation of facility, equipment, systems, processes and analytics. We may be subject to lengthy delays and expense in conducting validation studies, if we can meet the requirements at all.

Risks Related to Commercialization of Our Product Candidates and Other Legal Compliance Matters

Even if any of our product candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, hospitals, third-party payors and others in the medical community necessary for commercial success.

If any of our product candidates receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. For example, current CDI treatment involves the use of antibiotics that are well established in the medical community or the use of fecal microbiota transplantation, or FMT, and physicians may continue to rely on these treatments. If our product candidates receive approval but do not achieve an adequate level of

acceptance, we may not generate significant product revenue and we may not become profitable. The degree of market acceptance of our approved product candidates, if any, will depend on a number of factors, including:

- their efficacy, safety and other potential advantages compared to alternative treatments;
- the clinical indications for which our products are approved;
- our ability to offer them for sale at competitive prices;
- their convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- the availability of third-party coverage and adequate reimbursement for our product candidates;
- the prevalence and severity of their side effects and their overall safety profiles;
- any restrictions on the use of our products together with other medications;
- interactions of our products with other medicines patients are taking; and
- inability of certain types of patients to take our product.

We currently have a limited sales organization. If we are unable to establish effective sales, marketing and distribution capabilities or enter into agreements with third parties with such capabilities, we may not be successful in commercializing our product candidates if and when they are approved.

We have limited sales or marketing infrastructure and have no experience in the sale, marketing or distribution of pharmaceutical products. To achieve commercial success for any product for which

we obtain marketing approval, we will need to establish a sales and marketing organization or make arrangements with third parties to perform sales and marketing functions and we may not be successful in doing so.

In the future, we expect to build a focused sales and marketing infrastructure to market or co- promote our product candidates in the United States and potentially elsewhere, if and when they are approved. There are risks involved with establishing our own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time-consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our products on our own include:

- our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to or educate physicians on the benefits of our products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines;
- unforeseen costs and expenses associated with creating an independent sales and marketing organization; and
- inability to obtain sufficient coverage and reimbursement from third-party payors and governmental agencies.

Outside the United States, we rely and may increasingly on third parties, including NHS, to sell, market and distribute our product candidates. We may not be successful in entering into arrangements with such third parties or may be unable to do so on terms that are favorable to us. In addition, our product revenue and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute any products that we develop ourselves. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we do not establish sales, marketing and distribution capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

We face substantial competition, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.

The development and commercialization of new drug and biologic products is highly competitive and is characterized by rapid and substantial technological development and product innovations. We face competition with respect to our current product candidates, and will face competition with respect to any product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. We are aware of a number of large pharmaceutical and biotechnology companies, as well as smaller, early-stage companies, that are pursuing the development of products, including microbiome therapeutics, for the prevention of CDI and other disease indications we are targeting. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach, and others may be based on entirely different approaches. For example, FMT is a procedure that has resulted in high cure rates for recurrent CDI and our competitors and physicians may continue to seek to standardize and implement this procedure. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources, established presence in the market and expertise in research and development, manufacturing, pre-clinical testing, conducting clinical trials, obtaining regulatory approvals and reimbursement and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors.

These third parties compete with us in recruiting and retaining qualified scientific, sales and marketing and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market, especially for any competitor developing a microbiome therapeutic which will likely share our same regulatory approval requirements. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic or biosimilar products.

Even if we are able to commercialize any product candidates, the products may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, any of which would harm our business.

Our ability to commercialize any product candidates successfully will depend, in part, on the extent to which coverage and reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and impact reimbursement levels.

Obtaining and maintaining adequate reimbursement for our products may be difficult. We cannot be certain if and when we will obtain an adequate level of reimbursement for our products by third- party payors. Even if we do obtain adequate levels of reimbursement, third-party payors, such as government or private healthcare insurers, carefully review and increasingly question the coverage of, and challenge the prices charged for, drugs. Reimbursement rates from private health insurance companies vary depending on the company, the insurance plan and other factors. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for drugs. We may also be required to conduct expensive pharmacoeconomic studies to justify coverage and reimbursement or the level of reimbursement relative to other therapies. If coverage and reimbursement are not available or reimbursement is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval, and the royalties resulting from the sales of those products may also be adversely impacted.

There may be significant delays in obtaining reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including

research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost treatment approaches and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

The regulations that govern marketing approvals, pricing, coverage and reimbursement for new drug products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be reimbursed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control, including possible price reductions, even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain marketing approval. There can be no assurance that our product candidates, if they are approved for sale in the United States or in other countries, will be considered medically necessary for a specific indication or cost-effective, or that coverage or an adequate level of reimbursement will be available.

Product liability lawsuits against us could cause us to incur substantial liabilities and limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- regulatory investigations, product recalls or withdrawals, or labeling, marketing or promotional restrictions;
- decreased demand for any product candidates or products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize any products that we may develop.

We currently hold $3.0 million in product liability insurance coverage in the aggregate, with a per occurrence limit of $3.0 million, which may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our product candidates. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

We may face competition from biosimilars, which may have a material adverse impact on the future commercial prospects of our product candidates.

Even if we are successful in achieving regulatory approval to commercialize a product candidate faster than our competitors, we may face competition from biosimilars. In the United States, the Biologics Price Competition and Innovation Act, or BCPIA, enacted in 2010 as part of the Patient Protection and Affordable Care Act, created an abbreviated approval pathway for biological products that are demonstrated to be “highly similar,” or biosimilar, to or “interchangeable” with an FDA-approved biological product. Under

the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of their product. This new pathway could allow competitors to reference data from innovative biological products 12 years after the time of approval of the innovative biological product. This data exclusivity does not prevent another company from developing a product that is highly similar to the innovative product, generating its own data and seeking approval. Data exclusivity only assures that another company cannot rely upon the data within the innovator's application to support the biosimilar product's approval.

We believe that any of our product candidates approved as a biological product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. In each of his proposed budgets for fiscal years 2013 through 2015, President Obama has proposed to cut this 12-year period of exclusivity down to seven years. He also proposed to prohibit additional periods of exclusivity due to minor changes in product formulations, a practice often referred to as "evergreening." It is possible that Congress may take these or other measures to reduce or eliminate periods of exclusivity. The BCPIA is complex and only beginning to be interpreted and implemented by the FDA. As a result, its ultimate impact is subject to uncertainty. The FDA has issued several guidance documents to date discussing the biosimilar pathway, and the FDA approved the first biosimilar under the BCPIA in March 2015. However, several issues still remain unclear with respect to the FDA's final implementation of the BCPIA, and such FDA implementation could have a material adverse effect on the future commercial prospects for our product candidates.

In Europe, the European Commission has granted marketing authorizations for several biosimilars pursuant to a set of general and product class-specific guidelines for biosimilar approvals issued over the past few years. In Europe, a competitor may reference data supporting approval of an innovative biological product, but will not be able to get on the market until 10 years after the time of approval of the innovative product. This 10-year marketing exclusivity period will be extended to 11 years if, during the first eight of those 10 years, the marketing authorization holder obtains an approval for one or more new therapeutic indications that bring significant clinical benefits compared with existing therapies. In addition, companies may be developing biosimilars in other countries that could compete with our products. If competitors are able to obtain marketing approval for biosimilars referencing our products, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and consequences.

Failure to obtain marketing approval in international jurisdictions would prevent our product candidates from being marketed abroad.

In order to market and sell our products in the European Union, or EU, and many other jurisdictions, we or our collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval in foreign countries may differ substantially from that required to obtain FDA approval. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We or our collaborators may not obtain approvals for our product candidates from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. However, a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our products in any market.

Any product candidate for which we obtain marketing approval could be subject to post- marketing restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to the continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. We and our contract manufacturers will also be subject to continual review and periodic inspections to assess

compliance with cGMP. Accordingly, we and others with whom we work must continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control.

Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to specific conditions of approval, including a requirement to implement a risk evaluation and mitigation strategy, or REMS, which could include requirements for a medication guide, communication plan, or restricted distribution system. If any of our product candidates receives marketing approval, the accompanying label may limit the approved use of our drug, which could limit sales of the product.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of our approved products. The FDA closely regulates the post-approval marketing and promotion of drugs and biologics to ensure they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use, and if we market our products outside of their approved indications, we may be subject to enforcement action for off-label marketing. Violations of the FDA's restrictions relating to the promotion of prescription drugs may also lead to investigations alleging violations of federal and state health care fraud and abuse laws, as well as state consumer protection laws.

In addition, if a regulatory agency or we later discover previously unknown problems with our products, such as adverse events of unanticipated severity or frequency, problems with manufacturers or manufacturing processes, or failure to comply with regulatory requirements, the regulatory agency may impose restrictions on the products or us, including requiring withdrawal of the product from the market. Any failure to comply with applicable regulatory requirements may yield various results, including:

- litigation involving patients taking our products;
- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters;
- withdrawal of products from the market;
- suspension or termination of ongoing clinical trials;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- damage to relationships with potential collaborators;
- unfavorable press coverage and damage to our reputation;
- refusal to permit the import or export of our products;
- product seizure or detention;
- injunctions; or
- imposition of civil or criminal penalties.

Noncompliance with similar EU requirements regarding safety monitoring or pharmacovigilance can also result in significant financial penalties. Similarly, failure to comply with U.S. and foreign regulatory requirements regarding the development of products for pediatric populations and the protection of personal health information can also lead to significant penalties and sanctions.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response, and could generate negative publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely

affect our ability to commercialize and generate revenues. If regulatory sanctions are applied or if regulatory approval is withheld or withdrawn, the value of our company and our operating results will be adversely affected.

Our relationships with customers, physicians and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, exclusion from governmental healthcare programs, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our future arrangements with third-party payors, physicians and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute any products for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- the federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program, such as Medicare and Medicaid; a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act (described below);
- the federal False Claims Act imposes criminal and civil penalties, including civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of these statutes or specific intent to violate them to have committed a violation;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal Physician Payment Sunshine Act requires applicable manufacturers of covered drugs to report payments and other transfers of value to physicians and teaching hospitals, and ownership and investment interests held by physicians and their immediate family members; manufacturers are required to submit reports to the government by the 90th day of each calendar year;
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and
- state and foreign laws that govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

The risk of our being found in violation of these laws is increased by the fact that many of them have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. The shifting compliance environment and the need to build and maintain a robust system to comply with multiple jurisdictions with different compliance and reporting requirements increases the possibility that a healthcare company may violate one or more of the requirements.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be

subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, changed the way Medicare covers and pays for pharmaceutical products. The MMA expanded Medicare coverage for outpatient drug purchases by those covered by Medicare under a new Part D and introduced a new reimbursement methodology based on average sales prices for Medicare Part B physician-administered drugs. In addition, the MMA authorized Medicare Part D prescription drug plans to limit the number of drugs that will be covered in any therapeutic class in their formularies. The MMA's cost reduction initiatives and other provisions could decrease the coverage and price that we receive for any approved products. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in Medicare reimbursement may result in a similar reduction in payments from private payors. Similar regulations or reimbursement policies may be enacted in international markets which could similarly impact our business.

More recently, in 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the Affordable Care Act, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of the Affordable Care Act of importance to our potential product candidates are the following:

- establishment of a new pathway for approval of lower-cost biosimilars to compete with biologic products, such as those we are developing;
- an annual, nondeductible fee payable by any entity that manufactures or imports specified branded prescription drugs and biologic agents;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti- Kickback Statute, new government investigative powers and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices;
- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- new requirements to report financial arrangements with physicians and teaching hospitals;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect on

April 1, 2013 and, due to subsequent legislative amendments, will remain in effect through 2025 unless additional Congressional action is taken. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers, including hospitals. These new laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain.

We expect that the Affordable Care Act, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.

In some countries, particularly the countries of the EU, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after coverage and reimbursement have been obtained. Reference pricing used by various EU member states and parallel distribution or arbitrage between low-priced and high- priced member states, can further reduce prices. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. If coverage and reimbursement of our products are unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed, possibly materially.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials such as human stool. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Risks Related to Our Intellectual Property

If we are unable to adequately protect our proprietary technology, or obtain and maintain issued patents that are sufficient to protect our product candidates, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.

Our success depends in large part on our ability to obtain and maintain patent and other intellectual property protection in the United States and other countries with respect to our proprietary technology and products. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our novel technologies and product candidates. We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost, in a timely manner, or in all jurisdictions. Prosecution of our patent portfolio is at a very early stage, and we are just beginning to reach the statutory deadlines for deciding whether and where to initiate prosecution in specific foreign jurisdictions by filing national state applications based on our Patent Cooperation Treaty, or PCT, applications. As those deadlines come due, we will have to decide whether and where to pursue patent protection for the various inventions claimed in our patent portfolio, and we will only have the opportunity to obtain patents in those jurisdictions where we pursue protection. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. It is possible that defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, such as, with respect to proper priority claims, inventorship, claim scope or patent term adjustments. If there are material defects in the form or preparation of our patents or patent applications, such patents or applications may be invalid and unenforceable. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business, financial condition and operating results.

If, in the future, we obtain licenses from third parties, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from third parties. We may also require the cooperation of our licensors to enforce any licensed patent rights, and such cooperation may not be provided. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Moreover, if we do obtain necessary licenses, we will likely have obligations under those licenses, and any failure to satisfy those obligations could give our licensor the right to terminate the license. Termination of a necessary license could have a material adverse impact on our business.

Our patent portfolio is in the early stages of prosecution. We currently have four issued U.S. patents. Although we have numerous patent applications pending, substantive prosecution has begun in only a small number of those applications. We cannot provide any assurances that any of our pending patent applications will mature into issued patents and, if they do, that such patents or our current patents will include claims with a scope sufficient to protect our product candidates or otherwise provide any competitive advantage. For example, we are pursuing claims to therapeutic, binary compositions of certain bacterial populations. Any claims that may issue may provide coverage for such binary compositions and/or their use. However, such claims would not prevent a third party from commercializing alternative compositions that do not include both of the bacterial populations claimed in pending applications, potential applications or patents that have or may issue. There can be no assurance that any such alternative composition will not be equally effective. Further, given that our SER-109 product candidate is a complex composition with some variation from lot-to-lot and that, likewise, third-party compositions may have similar complexity and variability, it is possible that a patent claim may provide coverage for some but not all lots of a product candidate or third-party product. These and other factors may provide opportunities for our competitors to design around our patents, should they issue.

Moreover, other parties have developed technologies that may be related or competitive to our approach, and may have filed or may file patent applications and may have received or may receive patents that may overlap or conflict with our patent applications, either by claiming similar methods or by claiming subject matter that could dominate our patent position. In addition, given the early stage of prosecution of our portfolio, it may be some time before we understand how patent offices react to our patent claims and whether they identify prior art of relevance that we have not already considered.

Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in any owned patents or pending patent applications, or that we were the first to file for patent protection of such inventions, nor can we know whether those from whom we may license patents were the first to make the inventions claimed or were the first to file. For these and other reasons, the issuance, scope, validity, enforceability and commercial value of our patent rights are subject to a level of uncertainty. Our pending and future

patent applications may not result in patents being issued which protect our technology or products, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

We may be subject to a third-party preissuance submission of prior art to the United States Patent and Trademark Office, or USPTO, or become involved in opposition, derivation, reexamination, inter partes review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates. Furthermore, an adverse decision in an interference proceeding can result in a third party receiving the patent right sought by us, which in turn could affect our ability to develop, market or otherwise commercialize our product candidates. The issuance, scope, validity, enforceability and commercial value of our patents are subject to a level of uncertainty.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. Due to legal standards relating to patentability, validity, enforceability and claim scope of patents covering biotechnological and pharmaceutical inventions, our ability to obtain, maintain and enforce patents is uncertain and involves complex legal and factual questions. Even if issued, a patent's validity, inventorship, ownership or enforceability is not conclusive. Accordingly, rights under any existing patent or any patents we might obtain or license may not cover our product candidates, or may not provide us with sufficient protection for our product candidates to afford a commercial advantage against competitive products or processes, including those from branded and generic pharmaceutical companies.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- any of our pending patent applications, if issued, will include claims having a scope sufficient to protect our product candidates or any other products or product candidates;
- any of our pending patent applications will issue as patents at all;
- we will be able to successfully commercialize our product candidates, if approved, before our relevant patents expire;
- we were the first to make the inventions covered by any existing patent and pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not develop similar or alternative technologies that do not infringe or design around our patents;
- others will not use pre-existing technology to effectively compete against us;
- any of our patents, if issued, will be found to ultimately be valid and enforceable;
- third parties will not compete with us in jurisdictions where we do not pursue and obtain patent protection;
- we will be able to obtain and/or maintain necessary or useful licenses on reasonable terms or at all;
- any patents issued to us will provide a basis for an exclusive market for our commercially viable products, will provide us with any competitive advantages or will not be challenged by third parties;
- we will develop additional proprietary technologies or product candidates that are separately patentable; or
- our commercial activities or products will not infringe upon the patents or proprietary rights of others.

Any litigation to enforce or defend our patent rights, even if we were to prevail, could be costly and time-consuming and would divert the attention of our management and key personnel from our business operations. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful. Even if we are successful, domestic or foreign litigation, or USPTO or foreign patent office proceedings, may result in substantial costs and distraction to our management. We may not be able, alone or with our licensors or potential collaborators, to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or other proceedings, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation

or other proceedings. In addition, during the course of this kind of litigation or proceedings, there could be public announcements of the results of hearings, motions or other interim proceedings or developments or public access to related documents. If investors perceive these results to be negative, the market price for our common stock could be significantly harmed.

If we are unable to protect the confidentiality of our trade secrets and know-how, our business and competitive position may be harmed.

In addition to seeking patents for some of our technology and product candidates, we also utilize on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect these trade secrets, in part, by entering into non- disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties. We also seek to enter into confidentiality and invention or patent assignment agreements with our employees, advisors and consultants. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Our trade secrets may also be obtained by third parties by other means, such as breaches of our physical or computer security systems. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. Moreover, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involves both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, recent patent reform legislation could further increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The USPTO recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, in particular the first to file provisions, only became effective on March 16, 2013. A third party that files a patent application in the USPTO after that date but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by the third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Thus, for our U.S. patent applications containing a priority claim after March 16, 2013, there is a greater level of uncertainty in the patent law. Moreover, some of the patent applications in our portfolio will be subject to examination under the pre-Leahy- Smith Act law and regulations, while other patents applications in our portfolio will be subject to examination under the law and regulations, as amended by the Leahy-Smith Act. This introduces additional complexities into the prosecution and management of our portfolio.

In addition, the Leahy-Smith Act limits where a patentee may file a patent infringement suit and provides opportunities for third parties to challenge any issued patent in the USPTO. These provisions apply to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in U.S. federal court necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a federal court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims because it may be easier for them to do so relative to challenging the patent in a federal court action. It is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

In addition, recent United States Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. From time to time, the U.S. Supreme Court, other federal courts, the United States Congress, or the USPTO, may change the standards of patentability and any such changes could have a negative impact on our business.

A number of recent cases decided by the Supreme Court have involved questions of when claims reciting abstract ideas, laws of nature, natural phenomena and/or natural products are eligible for a patent, regardless of whether the claimed subject matter is

otherwise novel and inventive. These cases include *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 12-398 (2013) or Myriad; *Alice Corp. v. CLS Bank International*, 573 U.S. 13-298 (2014); and *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, or Prometheus, 566 U.S. 10-1150 (2012). In response to these cases, the USPTO has issued guidance to the examining corps.

The full impact of these decisions is not yet known. The Myriad decision, issued on June 13, 2013, is the most recent Supreme Court decision to address patent eligibility of natural products. Our current product candidates include natural products, therefore, this decision and its interpretation by the courts and the USPTO may impact prosecution, defense and enforcement of our patent portfolio. In Myriad, the Court held that claims to isolated genomic DNA are not patentable, but claims to complementary DNA, or cDNA, molecules, which are not genomic sequences, may be patent eligible because they are not a natural product. The effect of the decision on patents for other isolated natural products is uncertain. However, on March 4, 2014, the USPTO issued a memorandum to patent examiners providing guidance for examining claims that recite laws of nature, natural phenomena or natural products under the Myriad and Prometheus decisions. The guidance did not limit the application of Myriad to DNA but, rather, applied the decision broadly to other natural products, which may include our product candidates. The March 4, 2014 memorandum and the USPTO's interpretation of the cases and announced examination rubric received widespread criticism from stakeholders during a public comment period and was superseded by interim guidance published on December 15, 2014. Additional guidance was published in July 2015 (July 2015 Update: Subject Matter Eligibility). The USPTO's interpretation of the case law and new guidelines for examination may influence, possibly adversely, prosecution and defense of certain types of claims in our portfolio.

In addition to increasing uncertainty with regard to our ability to obtain future patents, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on these and other decisions by Congress, the federal courts and the USPTO, the laws and regulations governing patents could change or be interpreted in unpredictable ways that would weaken our ability to obtain new patents or to enforce any patents that may issue to us in the future. In addition, these events may adversely affect our ability to defend any patents that may issue in procedures in the USPTO or in courts.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability, and the ability of our collaborators, to develop, manufacture, market and sell our product candidates and use our proprietary technologies without infringing the proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries. While no such litigation has been brought against us and we have not been held by any court to have infringed a third party's intellectual property rights, we cannot guarantee that our technology, products or use of our products do not infringe third-party patents.

We are aware of numerous patents and pending applications owned by third parties in the fields in which we are developing product candidates, both in the United States and elsewhere. However, we may have failed to identify relevant third-party patents or applications. For example, applications filed before November 29, 2000 and certain applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Moreover, it is difficult for industry participants, including us, to identify all third-party patent rights that may be relevant to our product candidates and technologies because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. We may fail to identify relevant patents or patent applications or may identify pending patent applications of potential interest but incorrectly predict the likelihood that such patent applications may issue with claims of relevance to our technology. In addition, we may be unaware of one or more issued patents that would be infringed by the manufacture, sale or use of a current or future product candidate, or we may incorrectly conclude that a third-party patent is invalid, unenforceable or not infringed by our activities. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our technologies, our products or the use of our products. We are aware of several pending patent applications containing one or more claims that could be construed to cover some of our product candidates or technology, should those claims issue in their original form or in the form presently being pursued. In addition, we are aware of a third-party patent family that includes issued and allowed patents, including in the United States, with claims that, if valid and enforceable, could be construed to cover some of our product candidates or their methods of use.

The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that our product candidates or the use of our technologies infringes patent claims or other intellectual property rights held by them or that we are employing their proprietary technology without authorization. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our products and technology, including interference or derivation proceedings before the USPTO and similar bodies in other countries. Third parties may assert infringement claims against us based on existing intellectual property rights and intellectual property rights that may be granted in the future. If we were to challenge the validity of an issued U.S. patent in court, such as an issued U.S. patent of

potential relevance to some of our product candidates or methods of use, we would need to overcome a statutory presumption of validity that attaches to every U.S. patent. This means that in order to prevail, we would have to present clear and convincing evidence as to the invalidity of the patent's claims. There is no assurance that a court would find in our favor on questions of infringement or validity.

Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. If we are found, or believe there is a risk we may be found, to infringe a third party's intellectual property rights, we could be required or may choose to obtain a license from such third party to continue developing and marketing our products and technology. However, we may not be able to obtain any such license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court, or redesign our products. Patent litigation is costly and time-consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, intellectual property litigation or claims could force us to do one or more of the following:

- cease developing, selling or otherwise commercializing our product candidates;
- pay substantial damages for past use of the asserted intellectual property;
- obtain a license from the holder of the asserted intellectual property, which license may not be available on reasonable terms, if at all; and
- in the case of trademark claims, redesign, or rename, some or all of our product candidates or other brands to avoid infringing the intellectual property rights of third parties, which may not be possible and, even if possible, could be costly and time-consuming.

Any of these risks coming to fruition could have a material adverse effect on our business, results of operations, financial condition and prospects.

Issued patents covering our product candidates could be found invalid or unenforceable or could be interpreted narrowly if challenged in court.

Competitors may infringe our intellectual property, including our patents or the patents of our licensors. As a result, we may be required to file infringement claims to stop third-party infringement or unauthorized use. This can be expensive, particularly for a company of our size, and time-consuming. If we initiated legal proceedings against a third party to enforce a patent, if and when issued, covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include alleged failures to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement, or failure to claim patent eligible subject matter. Grounds for unenforceability assertions include allegations that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review and equivalent proceedings in foreign jurisdictions, such as opposition proceedings. Such proceedings could result in revocation or amendment of our patents in such a way that they no longer cover our product candidates or competitive products. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to validity, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Moreover, even if not found invalid or unenforceable, the claims of our patents could be construed narrowly or in a manner that does not cover the allegedly infringing technology in question. Such a loss of patent protection would have a material adverse impact on our business.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for noncompliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent and, in some jurisdictions, during the pendency of a patent application. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

It is our policy to enter into confidentiality and intellectual property assignment agreements with our employees, consultants, contractors and advisors. These agreements generally provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. For example, even if we have a consulting agreement in place with an academic advisor pursuant to which such academic advisor is required to assign any inventions developed in connection with providing services to us, such academic advisor may not have the right to assign such inventions to us, as it may conflict with his or her obligations to assign all such intellectual property to his or her employing institution.

Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may be subject to claims by third parties asserting that our employees or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We may also engage advisors and consultants who are concurrently employed at universities or other organizations or who perform services for other entities. Although we try to ensure that our employees, advisors and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, advisors or consultants have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such party's former or current employer or in violation of an agreement with another party. Although we have no knowledge of any such claims being alleged to date, if such claims were to arise, litigation may be necessary to defend against any such claims.

In addition, while it is our policy to require our employees, consultants, advisors and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property. Similarly, we may be subject to claims that an employee, advisor or consultant performed work for us that conflicts with that person's obligations to a third party, such as an employer, and thus, that the third party has an ownership interest in the intellectual property arising out of work performed for us. Litigation may be necessary to defend against these claims. Although we have no knowledge of any such claims being alleged to date, if such claims were to arise, litigation may be necessary to defend against any such claims.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to management.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our registered or unregistered trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential collaborators or customers in our markets of interest. At times, competitors may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely impact our financial condition or results of operations.

We will not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.

Filing, prosecuting and defending patents on product candidates in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States could be less extensive than in the United States, assuming that rights are obtained in the United States and assuming that rights are pursued outside the United States. The statutory deadlines for pursuing patent protection in individual foreign jurisdictions are based on the priority date of each of our patent applications. For all of the patent families in our portfolio, including the families that may provide coverage for our lead product candidates, the relevant statutory deadlines have not yet expired. Therefore, for each of the patent families that we believe provide coverage for our lead product candidates, we will need to decide whether and where to pursue protection outside the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, even if we do elect to pursue patent rights outside the United States, we may not be able to obtain relevant claims and/or we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

Competitors may use our technologies in jurisdictions where we do not pursue and obtain patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Even if we pursue and obtain issued patents in particular jurisdictions, our patent claims or other intellectual property rights may not be effective or sufficient to prevent third parties from so competing.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property protection, especially those relating to biotechnology. This could make it difficult for us to stop the infringement of our patents, if obtained, or the misappropriation of our other intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, many countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit. Patent protection must ultimately be sought on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain countries, and we will not have the benefit of patent protection in such countries.

If our ability to obtain and, if obtained, enforce our patents to stop infringing activities is inadequate, third parties may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Accordingly, our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property we develop or license.

Risks Related to Employee Matters and Managing Growth and Other Risks Related to Our Business

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on Roger Pomerantz, our President and Chief Executive Officer and Chairman of the Board of Directors, as well as the other principal members of our management, scientific and clinical team, including Eric Shaff, our Chief Financial Officer and Executive Vice President, David Cook, our Chief Scientific Officer and Executive Vice President of Research & Development, John Aunins, our Chief Technology Officer and Executive Vice President of Bioprocess & Manufacturing, Michele Trucksis, our Chief Medical Officer and Executive Vice President, Wael Hashad, our Chief Commercial Officer, and Executive Vice President, and Matthew Henn, our Head of Drug Discovery & Bioinformatics and Senior Vice President. Although we have entered into employment agreements with our executive officers, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other employees.

Recruiting and retaining qualified scientific, clinical, manufacturing and sales and marketing personnel will also be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize products. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We expect to expand our operational capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of lead discovery and product development, regulatory affairs, clinical affairs and manufacturing and, if any of our product candidates receives marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

A variety of risks associated with operating internationally could materially adversely affect our business.

We currently have limited international operations, but our business strategy incorporates potentially expanding internationally if any of our product candidates receive regulatory approval. We currently plan to rely on collaborators, including NHS, to commercialize any approved products outside of the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting and changing laws and regulations, such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining protection and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors or patient self-pay systems;

- limits in our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions;
- certain expenses including, among others, expenses for travel, translation and insurance; and
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, or FCPA, its books and records provisions, or its anti-bribery provisions.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our results of operations.

Our business and operations would suffer in the event of information technology and other system failures.

Despite the implementation of security measures, our internal computer systems and those of our current and future contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we are not aware of any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on third parties to manufacture our product candidates and conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

Acquisitions or joint ventures could disrupt our business, cause dilution to our stockholders and otherwise harm our business.

We may acquire other businesses, products or technologies as well as pursue strategic alliances, joint ventures, technology licenses or investments in complementary businesses. We have not made any acquisitions to date, and our ability to do so successfully is unproven. Any of these transactions could be material to our financial condition and operating results and expose us to many risks, including:

- disruption in our relationships with future customers or with current or future distributors or suppliers as a result of such a transaction;
- unanticipated liabilities related to acquired companies;
- difficulties integrating acquired personnel, technologies and operations into our existing business;
- diversion of management time and focus from operating our business to acquisition integration challenges;
- increases in our expenses and reductions in our cash available for operations and other uses;
- possible write-offs or impairment charges relating to acquired businesses; and
- inability to develop a sales force for any additional product candidates.

Foreign acquisitions involve unique risks in addition to those mentioned above, including those related to integration of operations across different cultures and languages, currency risks and the particular economic, political and regulatory risks associated with specific countries.

Also, the anticipated benefit of any acquisition may not materialize. Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses or write-offs of goodwill, any of which could harm our financial condition. We cannot predict the number, timing or size of future joint ventures or acquisitions, or the effect that any such transactions might have on our operating results.

Risks Related to Our Common Stock

The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock.

Our stock price is likely to be volatile. The stock market in general and the market for smaller biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the price you paid for your common stock. The market price for our common stock may be influenced by many factors, including:

- the success of competitive products or technologies;
- actual or anticipated changes in our growth rate relative to our competitors;
- results of clinical trials of our product candidates or those of our competitors;
- developments related to any future collaborations;
- regulatory or legal developments in the United States and other countries;
- development of new product candidates that may address our markets and may make our product candidates less attractive;
- changes in physician, hospital or healthcare provider practices that may make our product candidates less useful;
- announcements by us, our partners or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- failure to meet or exceed financial estimates and projections of the investment community or that we provide to the public;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this “Risk Factors” section.

Our executive officers, directors and principal stockholders, if they choose to act together, have the ability to control or significantly influence all matters submitted to stockholders for approval.

Our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock and their respective affiliates, in the aggregate, hold shares representing approximately 70.2% of our outstanding voting stock. As a result, if these stockholders were to choose to act together, they would be able to control or significantly influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would control or significantly influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership control may:

- delay, defer or prevent a change in control;
- entrench our management and the board of directors; or
- impede a merger, consolidation, takeover or other business combination involving us that other stockholders may desire.

A significant portion of our total outstanding shares are eligible to be sold into the market, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. Approximately 30.5 million shares of our common stock recently became eligible to be sold into the market, unless held by one of our affiliates, in which case the resale of those securities is subject to volume limitations under Rule 144 of the Securities Act. Moreover, holders of an aggregate of approximately 22.9 million shares of our common stock as of the completion of the initial public offering of our common stock on July 1, 2015 have rights, subject to specified conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders, until such shares can otherwise be sold without restriction under Rule 144 or until the rights terminate pursuant to the terms of the investors' rights agreement between us and such holders. We have also registered and intend to continue to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

We are an "emerging growth company," and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of the closing of the initial public offering of our common stock. However, if certain events occur prior to the end of such five-year period, including if we become a "large accelerated filer," our annual gross revenues exceed $1.0 billion or we issue more than $1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be reduced or more volatile. In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of these accounting standards until they would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We will continue to incur increased costs as a result of being a public company, and our management will continue to devote substantial time to compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we have incurred and will continue to incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The NASDAQ Global Select Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel devote and will need to continue to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations have increased and will continue to increase our legal and financial compliance costs and make some activities more time-

consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to maintain director and officer liability insurance, which in turn could make it more difficult for us to attract and retain qualified members of our board of directors.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we will be required to furnish a report by our management on our internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

If securities or industry analysts issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our clinical studies and operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Provisions in our restated certificate of incorporation and amended and restated bylaws and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our restated certificate of incorporation and our amended and restated bylaws may discourage, delay or prevent a merger, acquisition or other change in control of our company that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions include those establishing:

- classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from filling vacancies on our board of directors;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the ability of our board of directors to alter our bylaws without obtaining stockholder approval;
- the required approval of the holders of at least two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or repeal the provisions of our restated certificate of incorporation regarding the election and removal of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;

- the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors, the chief executive officer, the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and
- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. Furthermore, our restated certificate of incorporation specifies that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving actions brought against us by stockholders. We believe this provision benefits us by providing increased consistency in the application of Delaware law by chancellors particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, the provision may have the effect of discouraging lawsuits against our directors and officers. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our restated certificate of incorporation to be inapplicable or unenforceable in such action.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Research and Offices

Our corporate headquarters are located in Cambridge, Massachusetts, where we currently sublease approximately 7,461 square feet of office space under a sublease that expires in May 2016. We also maintain a research and development facility in Cambridge, Massachusetts, where we lease approximately 13,568 square feet of space for office and laboratory facilities under a lease that expires in January 2018 and approximately 7,484 square feet under a lease that expires in April 2020.

We have entered into a lease for 83,396 square feet of office, laboratory and pilot manufacturing space at in Cambridge, Massachusetts. The lease term is expected to commence in March 2016 and end in November 2023, and we expect to move our corporate headquarters to this location in mid-2016.

Clinical Manufacturing

We currently conduct part of our manufacturing operations in our leased laboratory facilities in Cambridge, Massachusetts. We believe our current laboratory facilities and contract relationships are sufficient to meet our current bioprocess development and

manufacturing needs. During the fourth quarter of 2015, we entered into a lease for 83,396 square feet of office, laboratory and pilot manufacturing space in Cambridge, Massachusetts, that will also house our corporate headquarters. We expect the pilot facility will represent an important addition to our existing manufacturing network by broadening our capabilities in bioprocess development and manufacturing, in particular, the production of synthetic microbiome candidates. We expect to utilize our new manufacturing facility to prepare for commercialization of SER-109, SER-262, SER-287, SER-155. Other product candidates may be brought into the facility for economies of operation, or may remain external with contract manufacturing organizations, depending on business dynamics and development needs.

We plan to control the production of SER-109 under current good manufacturing practices by making strategic investments in manufacturing, which may include collaborations with third parties, the design and renovation of existing facilities and the construction of additional new facilities.

Item 3. Legal Proceedings

We are not party to any material legal proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

Executive Officers of the Registrant

Roger J. Pomerantz, M.D., has served as our President and Chief Executive Officer since June 2014 and as Chairman of our board of directors since November 2013. Since July 2014, Dr. Pomerantz has been a Senior Partner at Flagship Ventures, an early-stage venture capital firm. From January 2011 to September 2013, Dr. Pomerantz was Worldwide Head of Licensing and Acquisitions and Senior Vice President at Merck & Co., Inc., or Merck, a pharmaceutical company, where he oversaw licensing and acquisitions for Merck Research Laboratories, the research and development division of Merck. From February 2010 to February 2013, Dr. Pomerantz served as Global Head of Infectious Diseases and Senior Vice President at Merck, where he oversaw pharmaceutical development and discovery of antibiotics, antivirals, antifungals and antiparasitic agents. Prior to Merck, Dr. Pomerantz was Global Head of Infectious Diseases for the pharmaceutical division of Johnson & Johnson, Inc., a multinational medical device, consumer goods and pharmaceutical corporation, where he was responsible for anti-infective agents worldwide. He joined Johnson & Johnson, Inc. in August 2005 as President of Tibotec Pharmaceuticals, Inc., now Janssen Therapeutics and a subsidiary of Johnson & Johnson, Inc., a pharmaceutical company focused on the treatment of infectious diseases. Dr. Pomerantz has developed nine approved infectious disease drugs for diseases including HIV, HCV and tuberculosis. He also serves on the board of directors of Contrafect Corporation. Dr. Pomerantz received his B.A. in Biochemistry from The Johns Hopkins University and his M.D. from The Johns Hopkins School of Medicine. We believe Dr. Pomerantz's extensive academic and clinical experience, as well as his knowledge of the pharmaceutical industry, qualifies him to serve on our board of directors.

John G. Aunins, Ph.D., has served as our Chief Technology Officer and Executive Vice President of Bioprocess Development since December 2012. Prior to joining our company, Dr. Aunins served on our Scientific Advisory Board from February 2012 to December 2012. From April 1989 to November 2011, Dr. Aunins served in various roles at Merck, most recently as Executive Science Director. At Merck, Dr. Aunins led process and product development teams for six licensed vaccines and multiple vaccine candidates. He is a Fellow of the American Institute for Medical and Biological Engineering and an adjunct Full Professor at the Instituto de Tecnologia Quimica e Biologica in Oeiras, Portugal. Dr. Aunins received his B.S. from the University of Kansas and his Ph.D. in Chemical Engineering from the Massachusetts Institute of Technology.

David N. Cook, Ph.D., has served as our Chief Scientific Officer and Executive Vice President of Research & Development since October 2012. From February 2010 to October 2012, Dr. Cook was the Chief Operating Officer at the International AIDS Vaccine Initiative, a global not-for-profit, research and development organization focused on the development of a safe and accessible vaccine for HIV. As Chief Operating Officer, Dr. Cook acted as the head of operations, overseeing seven international offices and research facilities. Dr. Cook received his A.B. from Harvard College and his Ph.D. in Chemistry from the University of California, Berkeley.

Eric D. Shaff has served as our Chief Financial Officer and Executive Vice President since November 2014. From January 2012 to November 2014, Mr. Shaff was Vice President of Corporate Finance for Momenta Pharmaceuticals, a biotechnology company, where he helped manage Momenta's accounting, finance, planning, and procurement functions, as well as contributing to Momenta's investor relations efforts. From June 2004 to December 2011, Mr. Shaff held a number of corporate development and finance positions with Genzyme Corporation, a biotechnology company, most recently as Vice President of Finance/Controller for the

Personalized Genetic Health division. Mr. Shaff received his B.A. from the University of Pennsylvania and his MBA from Cornell University.

Michele Trucksis, Ph.D., M.D., has served as our Chief Medical Officer and Executive Vice President since January 2015. Dr. Trucksis was an Associate Clinical Professor at Harvard Medical School from January 2005 to April 2015. From December 2006 to December 2014, Dr. Trucksis held various positions of increasing seniority at Merck Research Laboratories, the research and development division of Merck. Most recently, from June 2014 to December 2014, Dr. Trucksis served as Executive Director, Team Leader & Clinical Lead, Antifungals and Antibacterials where she was responsible for medical, clinical and global product development and strategy. From July 2011 to June 2014, Dr. Trucksis was Project Leader, Antifungals and Antibacterials, and from December 2006 to July 2011, she was Director in Clinical Pharmacology. Dr. Trucksis received her B.S. in Medical Technology from Youngstown State University, her Ph.D. in Biochemistry from Kent State University and her M.D. from Case Western Reserve University School of Medicine.

Wael Hashad has served as our Chief Commercial Officer since January 2016. He has over 20 years of experience as a commercial leader and has held senior marketing and general management positions in the pharmaceutical and biotechnology industry. Prior to joining Seres, from July 2013 to September 2015, he served as Vice President and General Manager for Middle East and Africa at Amgen, Inc., a pharmaceutical company, where he lead a team of more than 200 to expand markets, launch new products and grow existing products. Prior to that he served as Vice President – Regional Commercial Head for Japan, China and Asia Pacific at Amgen, from October 2012 to June 2013, where he expanded commercial opportunities through strategic partnerships and implementation of go-to-market strategies. From August 2011 to June 2013, Mr. Hashad was Vice President – Head of Global Marketing for General Medicine at Amgen, where he optimized the launch of Repatha (Evolocumab). Prior to Amgen, Mr. Hashad worked at Boehringer Ingelheim, a pharmaceutical company, from April 2009 to August 2011, as Vice President – US Cardiovascular and Metabolic Disorders and at Eli Lilly, a pharmaceutical company, from 1989 to 2009, where he held various roles. At Boehringer Ingelheim and Eli Lilly, Mr. Hashad launched several products in the U.S., most notably Pradaxa® and Cymbalta®. Mr. Hashad earned his B.Sc. in Pharmacy and Pharmaceutical Sciences from the University of Cairo and his MBA from the University of Akron.

Directors of the Registrant

Noubar B. Afeyan, Ph.D., has served as a member of our board of directors since October 2010. Since 1999, Dr. Afeyan has served as the Managing Partner and Chief Executive Officer of Flagship Ventures, an early-stage venture capital firm that he co-founded. Dr. Afeyan is serving or has served on the board of directors of several public and private companies, including BG Medicine, Inc., BIND Therapeutics, Inc., Eleven Biotherapeutics, Inc., Helicos Biosciences, Moderna Therapeutics, Inc. and Pronutria Biosciences, Inc. Dr. Afeyan received a B.S. from McGill University and a Ph.D. in Biochemical Engineering from the Massachusetts Institute of Technology. We believe Dr. Afeyan is qualified to serve on our board of directors because of his extensive investment experience and his knowledge of the biotechnology industry.

Dennis A. Ausiello, M.D., has served as a member of our board of directors since April 2015. Dr. Ausiello serves as the Director of the Center for Assessment Technology and Continuous Health (CATCH), Jackson Distinguished Professor of Clinical Medicine at Harvard Medical School and Physician-in-Chief Emeritus at Massachusetts General Hospital. From 1996 to April 2013, Dr. Ausiello served as the Chief of Medicine at Massachusetts General Hospital. Dr. Ausiello is a member of the Institute of Medicine of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences. Dr. Ausiello has also served on the board of directors of Pfizer Inc. since December 2006 and Alnylam Pharmaceuticals since April 2012, each a pharmaceutical company. Dr. Ausiello received his undergraduate degree from Harvard College and an M.D. from the University of Pennsylvania. We believe that Dr. Ausiello is qualified to serve on our board of directors because of his extensive experience as a physician and as a director of pharmaceutical companies.

Grégory Behar has served as a member of our board of directors since December 2014. Mr. Behar has served as Chief Executive Officer of Nestlé Health Science S.A., a health sciences company, since October 2014. From July 2011 to July 2014, Mr. Behar was President and Chief Executive Officer of Boehringer Ingelheim Pharmaceuticals Inc. (USA), a pharmaceutical company. From 2010 to July 2011, Mr. Behar was Corporate Vice President Region NECAR (North European Union, Canada and Australasia) for Boehringer-Ingelheim GmbH, a pharmaceutical company. Mr. Behar received his B.S. from the University of California, Los Angeles, a M.S. in Mechanical Engineering and Manufacturing from EPFL in Switzerland and an MBA from INSEAD in France. We believe that Mr. Behar is qualified to serve on our board of directors because of his extensive business experience in the health sciences and pharmaceutical industries.

Werner Cautreels, Ph.D., has served as a member of our board of directors since March 2013. Dr. Cautreels has served as President and Chief Executive Officer of Selecta Biosciences, a biotechnology company, since June 2010. From May 1998 to June 2010, Dr. Cautreels worked for Solvay Pharmaceuticals, the pharmaceutical division of the Solvay Group, which was acquired by Abbot Laboratories. Since 2009, Dr. Cautreels has served on the board of directors of Galapagos NV, a biotechnology company. Dr.

Cautreels received a B.S. and M.S. and a doctorate in Chemistry from the University of Antwerp and an eMBA from Harvard Business School. We believe Dr. Cautreels is qualified to serve on our board of directors because of his extensive experience in the biotechnology industry.

Peter Barton Hutt has served as a member of our board of directors since May 2013. Mr. Hutt is senior counsel at Covington & Burling LLP, specializing in food and drug law. Mr. Hutt has served as a member of the board of directors of Q Therapeutics, Inc. since 2002, Xoma Corporation since 2005, Concert Pharmaceuticals since 2006, BIND Therapeutics, Inc. since 2008 DBV Technologies since 2009 and Flex Pharma, Inc. since 2014. Mr. Hutt previously served on the board of directors of Momenta Pharmaceuticals, Inc., Celera Corporation, which was acquired by Quest Diagnostics in 2011, and ISTA Pharmaceuticals, which was acquired by Bausch & Lomb in 2012. Mr. Hutt received a B.A. from Yale University, an LL.B. from Harvard Law School and an LL.M. from the New York University School of Law. We believe that Mr. Hutt is qualified to serve on our board of directors because of his experience serving as a director of biotechnology companies and his legal and regulatory knowledge.

Richard N. Kender has served as a member of our board of directors since October 2014. From October 1978 to September 2013, Mr. Kender held positions in a variety of corporate areas at Merck, most recently serving as Senior Vice President of Business Development and Corporate Licensing. Mr. Kender serves on the board of directors of INC Research Holdings, Inc., a contract research organization, Poxel and Abide Therapeutics. Mr. Kender received a B.S. from Villanova University and an MBA from Fairleigh Dickinson University. We believe Mr. Kender is qualified to serve on our board of directors because of his extensive business experience and his knowledge of the pharmaceutical industry.

Lorence H. Kim, M.D., has served as a member of our board of directors since October 2014. Since April 2014, Dr. Kim has been the Chief Financial Officer of Moderna Therapeutics, a biotechnology company. From July 2000 to April 2014, Dr. Kim held a number of positions at Goldman, Sachs & Co., an investment bank, most recently as Managing Director and Co-Head of Biotechnology Investment Banking. Dr. Kim received an A.B. from Harvard University, an MBA in Healthcare Management from the Wharton School of the University of Pennsylvania and an M.D. from the University of Pennsylvania's School of Medicine. We believe Dr. Kim is qualified to serve on our board of directors because of his finance experience and knowledge of the biotechnology industry.

Kurt C. Graves has served on our Board of Directors since November 2015. Mr. Graves has been the Chairman, President and Chief Executive Officer of Intarcia Therapeutics, a biotechnology company, since April 2012. Mr. Graves served as Executive Chairman of Biolex Therapeutics, a biotechnology company, from November 2010 to March 2012, and served as Executive Chairman of Intarcia Therapeutics from August 2010 to April 2012. Previously, he served as Executive Vice President, Chief Commercial Officer and Head of Strategic Development at Vertex Pharmaceuticals Inc. from July 2007 to October 2009. Prior to joining Vertex, Mr. Graves held various leadership positions at Novartis pharmaceuticals from 1999 to June 2007. He was also the first Chief Marketing Officer for the Pharmaceuticals division from September 2003 to June 2007. He currently serves as a director of Intarcia Therapeutics, Radius Health, Pulmatrix Therapeutics and Achillion Pharmaceuticals. Mr. Graves received a B.S. in Biology from Hillsdale College. We believe Mr. Graves is qualified to serve as a member of our Board of Directors because of his extensive experience in the life sciences industry, membership on various boards of directors and his leadership and management experience

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

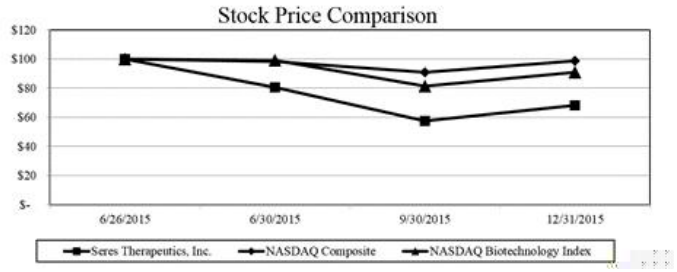
Our common stock has been traded on the Nasdaq Global Select Market under the symbol "MCRB" since our initial public offering on June 26, 2015. Prior to this time, there was no public market for our common stock. The following table shows the high and low sale prices per share of our common stock as reported on the Nasdaq Global Select Market for the periods indicated:

	High	Low
2015		
Second Quarter 2015 (beginning June 26, 2015)	$ 51.40	$ 28.11
Third Quarter 2015	$ 52.00	$ 26.95
Fourth Quarter 2015	$ 44.51	$ 25.00

On March 7, 2016, the last reported sale price for our common stock on the Nasdaq Global Select Market was $29.60 per share.

Stock Performance Graph

The graph set forth below compares the cumulative total stockholder return on our common stock between June 26, 2015 (the date of our initial public offering) and December 31, 2015, with the cumulative total return of (a) the Nasdaq Biotechnology Index and (b) the Nasdaq Composite Index, over the same period. This graph assumes the investment of $100 on June 26, 2015 in our common stock, the Nasdaq Biotechnology Index and the Nasdaq Composite Index and assumes the reinvestment of dividends, if any. The graph assumes our closing sales price on June 26, 2015 of $51.40 per share as the initial value of our common stock and not the initial offering price to the public of $18.00 per share.



Holders

As of March 7, 2016, there were approximately 33 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. The number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividends

We have not paid any cash dividends on our common stock since inception and do not anticipate paying cash dividends in the foreseeable future.

Use of Proceeds from Registered Securities

On July 1, 2015, we completed the initial public offering of our common stock and issued and sold 8,545,138 shares of our common stock at a public offering price of $18.00 per share, including 1,114,583 shares of our common stock pursuant to the underwriters' full exercise of their option to purchase additional shares of our common stock. We received aggregate net proceeds of

approximately $139.3 million after deducting underwriting discounts and commissions of $10.8 million and offering expenses of $3.7 million.

The offer and sale of all of the shares in the offering was registered under the Securities Act of 1933, as amended, pursuant to a registration statement on Form S-1 (File No. 333-204484), which was declared effective by the SEC on June 25, 2015, and a registration statement on Form S-1MEF (File No. 333-205238), which was automatically effective upon filing with the SEC on June 25, 2015. On September 17, 2015, we made a payment of $1.8 million to Comerica Bank to satisfy all amounts owed under our loan and security agreement. The payoff amount was comprised of $1.7 million of outstanding principal under the loan and security agreement and $0.1 million of final payment fees and accrued interest. There has been no material change in our planned use of the net proceeds from the offering as described in our final prospectus filed pursuant to Rule 424(b)(4) under the Securities Act with the SEC on June 26, 2015.

Purchases of Equity Securities by the Issuer or Affiliated Purchasers

There were no repurchases of shares of common stock made during the quarter ended December 31, 2015.

Item 6. Selected Consolidated Financial Data

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," our consolidated financial statements and related notes, and other financial information included in this Annual Report on Form 10-K. We have derived the consolidated statement of operations data for the years ended December 31, 2015, 2014 and 2013 and the consolidated balance sheet data as of December 31, 2015 and 2014 from our audited consolidated financial statements, which are included elsewhere in this Annual Report on Form 10-K. The consolidated statement of operations data for the year ended December 31, 2012 and the consolidated balance sheet data as of December 31, 2013 and 2012 are derived from our audited consolidated financial statements that are not included in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results that should be expected in the future.

	Year Ended December 31,			
	2015	2014	2013	2012
	(in thousands, except per share data)			
Consolidated Statement of Operations Data:				
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	38,095	10,718	4,805	2,077
General and administrative	16,761	4,364	1,247	956
Total operating expenses	54,856	15,082	6,052	3,033
Loss from operations	(54,856)	(15,082)	(6,052)	(3,033)
Other income (expense):				
Interest income	638	—	—	—
Interest expense	(555)	(209)	(42)	(93)
Revaluation of preferred stock warrant liability	(7)	(1,418)	(8)	—
Total other income (expense), net	76	(1,627)	(50)	(93)
Net loss	(54,780)	(16,709)	(6,102)	(3,126)
Accretion of convertible preferred stock to redemption value	—	(1,291)	(875)	(276)
Net loss attributable to common stockholders	$ (54,780)	$ (18,000)	$ (6,977)	$ (3,402)
Net loss per share attributable to common stockholders, basic and diluted[1]	$ (2.33)	$ (2.67)	$ (1.09)	$ (0.59)

(1) See Note 11 to our consolidated financial statements appearing at the end of this annual report on Form 10-K for further details on the calculation of basic and diluted net loss per share attributable to common stockholders.

	As of December 31,			
	2015	2014	2013	2012
	(in thousands)			
Consolidated Balance Sheet Data:				
Cash and cash equivalents	$ 73,933	$ 114,185	$ 1,654	$ 6,215
Investments	131,149	—	—	—
Working capital(1)	196,690	109,140	649	6,067
Total assets	216,900	117,345	2,125	6,538
Preferred stock warrant liability	—	1,582	164	—
Long-term debt, net of discount, including current portion	—	2,504	838	—
Convertible preferred stock(2)	—	136,077	11,583	10,708
Total stockholders' equity (deficit)	205,394	(26,721)	(11,116)	(4,348)

(1) We define working capital as current assets less current liabilities.

(2) Convertible preferred stock was converted into our common stock upon the listing of our common stock on NASDAQ on June 26, 2015. See Note 8 to our consolidated financial statements appearing at the end of this annual report on Form 10-K for further details.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of financial condition and results of operations together with Item 6 "Selected Consolidated Financial Data" and our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and other parts of this Annual Report on Form 10-K contain forward-looking statements that involve risks and uncertainties, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in Item 1A. Risk Factors.

Overview

We are a microbiome therapeutics platform company developing a novel class of biological drugs, which are designed to treat disease by restoring the function of a dysbiotic microbiome. Our lead product candidate, SER-109, is designed to prevent further recurrences of *Clostridium difficile* infection, or CDI, a debilitating infection of the colon, by treating the dysbiosis of the colonic microbiome and, if approved by the U.S. Food and Drug Administration, or FDA, could be a first-in-field drug. Using our microbiome therapeutics platform, we are developing additional product candidates, including SER-262 to prevent an initial recurrence of primary CDI, SER-287 to treat inflammatory bowel disease, or IBD, including ulcerative colitis and SER-155 to treat enteric bacterial pathogens. We are also conducting research on metabolic diseases, such as early-stage, non-insulin dependent diabetes; non-alcoholic steatohepatitis; obesity and metabolic syndrome; other inflammatory diseases, such as Crohn's disease; cancer chemotherapy and immune suppression; rare genetic diseases; and immune-oncology related applications.

Since our inception in October 2010, we have devoted substantially all of our resources to developing SER-109, researching SER-262 and SER-287, building our intellectual property portfolio, developing our supply chain, business planning, raising capital and providing general and administrative support for these operations. From our inception through June 30, 2015, we had financed our operations through private placements of our convertible preferred stock, the issuance of convertible promissory notes and borrowings under a loan and security agreement with Comerica Bank, or the loan and security agreement. Through June 30, 2015, we had received gross proceeds of $137.0 million from such transactions.

On July 1, 2015, we completed an initial public offering, or IPO, of our common stock, and issued and sold 8.5 million shares of common stock at a public offering price of $18.00 per share, resulting in net proceeds of approximately $139.3 million after deducting underwriting discounts and commissions and offering expenses. Upon the listing of our common stock on The NASDAQ Global Select Market, or NASDAQ, on June 26, 2015, all outstanding shares of our convertible preferred stock automatically converted into 22.9 million shares of our common stock. The shares issued upon closing of the IPO included 1.1 million shares of our common stock, pursuant to the underwriters' full exercise of their option to purchase additional shares of common stock.

As of December 31, 2015 we had repaid all amounts of the total $3.0 million borrowed under the loan and security agreement.

We are a development stage company and have not generated any revenue. All of our product candidates other than SER-109 and SER-287 are still in pre-clinical development. Our ability to generate product revenue sufficient to achieve profitability will depend heavily on the successful development and eventual commercialization of one or more of our product candidates. Since our inception, we have incurred significant operating losses. Our net loss was $6.1 million for the year ended December 31, 2013, $16.7 million for the year ended December 31, 2014 and $54.8 million for the year ended December 31, 2015. As of December 31, 2015, we had an accumulated deficit of $82.6 million.

We expect that our expenses will increase substantially in connection with our ongoing activities, particularly as we:

- advance the clinical development of SER-109 for the prevention of further recurrences of CDI in patients suffering from recurrent CDI, through a Phase 2 clinical study and beyond;
- initiate clinical development of SER-262 to be used following antibiotic treatment of primary CDI to prevent an initial recurrence of CDI;
- continue the Phase 1b clinical study of SER-287 for the treatment of ulcerative colitis;
- conduct research and continue pre-clinical development of additional Ecobiotic microbiome therapeutics, including SER-155 for the treatment of enteric bacterial pathogens;
- make strategic investments in manufacturing capabilities, including potentially planning and building a small-scale commercial manufacturing facility;

- maintain our current intellectual property portfolio and opportunistically acquire complementary intellectual property; and
- seek to obtain regulatory approvals for our product candidates.

In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Furthermore, we expect to continue to incur additional costs associated with operating as a public company.

As a result, we will need additional financing to support our continuing operations. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or private equity or debt financings or other sources, which may include collaborations with third parties. Adequate additional financing may not be available to us on acceptable terms, or at all. Our inability to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy. We will need to generate significant revenue to achieve profitability, and we may never do so.

In January 2016 we entered into a Collaboration and License Agreement, or the License Agreement, with Nestec Ltd., or NHS, for the development and commercialization of certain of our product candidates in development for the treatment and management of CDI and IBD, including ulcerative colitis and Crohn's disease. The License Agreement will support the development of our portfolio of products for CDI and IBD in markets outside of the United States and Canada, or the Licensed Territory, and is expected to provide substantial financial support for our ongoing research and development. We have retained full commercial rights to our entire portfolio of product candidates with respect to the United States and Canada, where we plan to build our own commercial organization.

Under the License Agreement, we granted to NHS an exclusive, royalty-bearing license to develop and commercialize, in the Licensed Territory, certain products based on our microbiome technology that are being developed for the treatment of CDI and IBD, including SER-109, SER-262, SER-287 and SER-301, or, collectively, the NHS Collaboration Products. We also granted to Nestlé a non-exclusive license to export, develop and make NHS Collaboration Products in the licensed fields worldwide solely for commercialization in the licensed fields and in the Licensed Territory.

In exchange for the license, NHS is obligated to pay the Company an upfront cash payment of $120 million, which the Company received in February 2016. NHS has also agreed to pay the Company tiered royalties, at percentages ranging from the high single digits to high teens, of net sales of NHS Collaboration Products in the Licensed Territory. Additionally, NHS has agreed to pay the Company up to $660 million for the achievement of certain development and regulatory milestones and up to an aggregate of $1.125 billion for the achievement of certain commercial milestones related to the sales of NHS Collaboration Products. We expect to receive a total of $30 million in milestone payments in 2016 associated with the planned initiation of a Phase 1b study for SER-262 in CDI and the anticipated initiation of the Phase 3 clinical trial for SER-109 in CDI. The full potential value of the up-front payment and milestone payments payable by NHS is over $1.9 billion, assuming all products receive regulatory approval and are successfully commercialized. NHS is also obligated to pay some of the costs related to our clinical trials. See "—Liquidity and Capital Resources."

We expect that our existing cash, cash equivalents and investments, will enable us to fund our operating expenses and capital expenditure requirements well into 2018. See "—Liquidity and Capital Resources."

Financial Operations Overview

Revenue

We have not generated any revenue since our inception and do not expect to generate any revenue from the sale of products in the near future.

Operating Expenses

Our operating expenses since inception have consisted primarily of research and development activities and general and administrative costs.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our discovery efforts, and the development of our product candidates, which include:

- expenses incurred under agreements with third parties, including contract research organizations, or CROs, that conduct research, pre-clinical activities and clinical trials on our behalf as well as contract manufacturing organizations, or CMOs, that manufacture drug products for use in our pre-clinical and clinical trials;
- salaries, benefits and other related costs, including stock-based compensation expense, for personnel in our research and development functions;
- costs of outside consultants, including their fees, stock-based compensation and related travel expenses;
- the cost of laboratory supplies and acquiring, developing and manufacturing pre-clinical study and clinical trial materials;
- costs related to compliance with regulatory requirements; and
- facility-related expenses, which include direct depreciation costs and allocated expenses for rent and maintenance of facilities and other operating costs.

We expense research and development costs as incurred. We recognize external development costs based on an evaluation of the progress to completion of specific tasks using information provided to us by our vendors and our clinical investigative sites. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected in our financial statements as prepaid or accrued research and development expenses.

Our primary focus of research and development since inception has been on our microbiome therapeutics platform and the subsequent development of SER-109, SER-287 and SER-262. Our direct research and development expenses are tracked on a program-by-program basis and consist primarily of external costs, such as fees paid to investigators, consultants and CROs in connection with our pre- clinical studies and clinical trials and regulatory fees. We do not allocate employee-related costs and other indirect costs to specific research and development programs because these costs are deployed across multiple product programs under development and, as such, are classified as costs of our microbiome therapeutics platform research, along with external costs directly related to our microbiome therapeutics platform.

The table below summarizes our research and development expenses incurred on our platform and by product development program.

	Year Ended December 31,		
	2015	2014	2013
	(in thousands)		
Microbiome therapeutics platform	$ 20,603	$ 7,584	$ 3,424
SER-109	13,828	3,122	729
SER-262	1,549	12	652
SER-287	2,115	—	—
Total research and development expenses	$ 38,095	$ 10,718	$ 4,805

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will continue to increase in the foreseeable future as we advance the clinical development of SER-287 and initiate clinical trials for certain product candidates, including SER-262, continue to discover and develop additional product candidates, including SER-155, and pursue later stages of clinical development of our product candidates.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in our executive, finance, corporate and business development and administrative functions. General and administrative expenses also include legal fees relating to patent and corporate matters; professional fees for accounting, auditing, tax and consulting services; insurance costs; travel expenses; and facility-related expenses, which include direct depreciation costs and allocated expenses for rent and maintenance of facilities and other operating costs.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support the expected growth in our research and development activities and the potential commercialization of our product candidates. We also expect to incur increased expenses associated with being a public company, including increased costs of accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and SEC requirements, director and officer insurance costs and investor and public relations costs.

Other Income (Expense), Net

Interest Income. Interest income consists of interest earned on our cash, cash equivalents and investments.

Interest Expense. Interest expense consists of interest expense incurred on our debt. During the years ended December 31, 2015, 2014 and 2013, interest expense consisted of interest at the stated rate on borrowings under our loan and security agreement, amortization of deferred financing costs and interest expense related to the accretion of debt discount associated with (1) the fair value of preferred stock warrant we issued in connection with the loan and security agreement and (2) a final payment due at maturity.

Revaluation of Preferred Stock Warrant Liability. Revaluation of preferred stock warrant liability consists of the net gain or loss associated with the change in the fair value of our preferred stock warrant liability. In connection with the loan and security agreement, we issued a warrant for the purchase of our Series A-2 convertible preferred stock, which we believe is a financial instrument that may have required a transfer of assets because of the redemption feature of the underlying stock. Therefore, we classified this warrant as a liability that we re-measured to fair value at each reporting period, and we recorded the changes in the fair value as a component of other income (expense), net. Upon the listing of our common stock on the NASDAQ on June 26, 2015, the preferred stock warrant became a warrant to purchase common stock. The Company performed the final mark to market adjustment on the preferred stock warrant using the fair value of the underlying common shares of $18.00 per share on June 26, 2015 and recorded the change in fair value in other income (expense), net in the consolidated statement of operations and comprehensive loss. The preferred stock warrant liability was then reclassified to additional paid-in-capital as it became a warrant to purchase common stock.

Income Taxes

Since our inception in 2010, we have not recorded any U.S. federal or state income tax benefits for the net losses we have incurred in each year or our earned research and development tax credits, due to our uncertainty of realizing a benefit from those items. As of December 31, 2015, we had federal and state net operating loss carryforwards of $65.4 million and $64.3 million, respectively, both of which begin to expire in 2031. As of December 31, 2015, we also had federal and state research and development tax credit carryforwards of $3.0 million and $1.3 million, respectively, which begin to expire in 2031 and 2027, respectively.

Critical Accounting Policies and Significant Judgments and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles, or GAAP, in the United States of America. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amount of assets, liabilities, revenue, costs and expenses and related disclosures. We believe that the estimates and assumptions involved in the accounting policies described below may have the greatest potential impact on our consolidated financial statements and, therefore, consider these to be our critical accounting policies. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions.

Accrued Research and Development Expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated costs incurred for the services when we have not yet been invoiced or otherwise notified of the actual costs. The majority of our service providers invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advanced payments. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. Examples of estimated accrued research and development expenses include fees paid to:

- CROs in connection with performing research services on our behalf and clinical trials;
- investigative sites or other providers in connection with clinical trials;

- vendors in connection with pre-clinical and clinical development activities; and
- vendors related to product manufacturing, development and distribution of pre-clinical and clinical supplies.

We base our expenses related to pre-clinical studies and clinical trials on our estimates of the services received and efforts expended pursuant to quotes and contracts with multiple CROs that conduct and manage clinical trials on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the clinical expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed, enrollment of patients, number of sites activated and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or amount of prepaid expense accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in us reporting amounts that are too high or too low in any particular period. To date, we have not made any material adjustments to our prior estimates of accrued research and development expenses.

Stock-Based Compensation

We measure stock options and other stock-based awards granted to employees and directors based on the fair value on the date of grant and recognize the corresponding compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, we issue stock options and restricted stock awards with only service-based vesting conditions and record the expense for these awards using the straight- line method.

We measure stock-based awards granted to consultants and non-employees based on the fair value of the award on the date at which the related service is complete. Compensation expense is recognized over the period during which services are rendered by such consultants and non- employees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

We estimate the fair value of each stock option grant using the Black-Scholes option-pricing model. Use of this model requires that we make assumptions as to the volatility of our common stock, the expected term of our stock options, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield. Because we lack company-specific historical and implied volatility information, we estimate our expected volatility based on the historical volatility of a group of publicly traded peer companies. We expect to continue to do so until such time as we have adequate historical data regarding the volatility of our traded stock price. We use the simplified method prescribed by Securities and Exchange Commission Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term of options granted to employees and directors. We base the expected term of options granted to consultants and non-employees on the contractual term of the options. We determine the risk-free interest rate by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that we have never paid cash dividends and do not expect to pay any cash dividends in the foreseeable future.

The assumptions we used to determine the fair value of stock options granted to employees and directors are as follows, presented on a weighted average basis:

	Year Ended December 31,		
	2015	2014	2013
Risk-free interest rate	1.80%	1.83%	1.27%
Expected term (in years)	6.0	6.0	6.0
Expected volatility	81.4%	83.5%	85.9%
Expected dividend yield	0%	0%	0%

These assumptions represented our best estimates, but the estimates involve inherent uncertainties and the application of our judgment.

We recognize compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate for pre-vesting forfeitures, we have considered our historical experience of actual forfeitures.

The following table summarizes the classification of our stock-based compensation expenses recognized in our consolidated statements of operations:

	Year Ended December 31,		
	2015	2014	2013
	(in thousands)		
Research and development	$ 5,297	$ 1,068	$ 177
General and administrative	4,397	1,000	32
	$ 9,694	$ 2,068	$ 209

Fair value of stock options

Prior to our IPO, the estimated fair value of our common stock was determined contemporaneously by our board of directors based on valuation estimates provided by management and prepared in accordance with the framework of the American Institute of Certified Public Accountants' Technical Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, or AICPA Practice Aid, as well as independent third-party valuations. Our contemporaneous valuations of our common stock were based on a number of objective and subjective factors, including external market conditions affecting the biotechnology industry sector and the prices at which we sold shares of preferred stock, the superior rights and preferences of securities senior to our common stock at the time of each grant and the likelihood of achieving a liquidity event such as an IPO. Consequently, after the IPO the fair value of the shares of common stock underlying the stock options is the closing price on the option grant date.

Valuation of Warrant to Purchase Convertible Preferred Stock

We classified a warrant to purchase shares of our Series A-2 convertible preferred stock as a liability on our balance sheets as this warrant is a free-standing financial instrument that may require us to transfer assets upon exercise. The warrant was initially recorded at fair value on date of grant, and it was subsequently remeasured to fair value at each balance sheet date. Changes in fair value of this warrant were recognized as a component of other income (expense), net in our consolidated statement of operations and comprehensive loss.

We used the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value the preferred stock warrant. We assessed these assumptions and estimates on a quarterly basis as additional information impacting the assumptions is obtained. Estimates and assumptions impacting the fair value measurement include the fair value per share of the underlying Series A-2 convertible preferred stock, the remaining contractual term of the warrant, risk-free interest rate, expected dividend yield and expected volatility of the price of the underlying preferred stock. We determine the fair value per share of the underlying preferred stock by taking into consideration our most recent sales of our convertible preferred stock, results obtained from third-party valuations and additional factors that we deemed relevant. We have historically been a private company and lack company-specific historical and implied volatility information of our stock. Therefore, we estimated expected stock volatility based on the historical volatility of publicly traded peer companies for a term equal to the remaining contractual term of the warrant. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve for time periods approximately equal to the remaining contractual term of the warrant. We estimated a 0% dividend yield based on the expected dividend yield and the fact that we have never paid or declared dividends.

Upon the listing of our common stock on the NASDAQ on June 26, 2015, the preferred stock warrant became a warrant to purchase common stock. We performed the final mark to market adjustment on the preferred stock warrant using the fair value of the underlying common shares of $18.00 per share on June 26, 2015 and recorded the change in fair value in other income (expense), net in the consolidated statement of operations and comprehensive loss. The preferred stock warrant liability was then reclassified to additional paid-in-capital as it became a warrant to purchase common stock.

Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012, or the JOBS Act, permits an ''emerging growth company'' such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to ''opt out'' of this provision and, as a result, we will comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

Results of Operations

Comparison of the Years Ended December 31, 2015 and 2014

The following table summarizes our results of operations for the years ended December 31, 2014 and 2015:

	Year Ended December 31,		
	2015	2014	Change
	(in thousands)		
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development	$ 38,095	$ 10,718	$ 27,377
General and administrative	16,761	4,364	12,397
Total operating expenses	54,856	15,082	39,774
Loss from operations	(54,856)	(15,082)	(39,774)
Other income (expense):			
Interest income	638	—	638
Interest expense	(555)	(209)	(346)
Revaluation of preferred stock warrant liability	(7)	(1,418)	1,411
Total other income (expense), net	76	(1,627)	1,703
Net loss	$ (54,780)	$ (16,709)	$ (38,071)

Research and Development Expenses

	Year Ended December 31,		
	2015	2014	Change
	(in thousands)		
Microbiome therapeutics platform	$ 20,603	$ 7,584	$ 13,019
SER-109	13,828	3,122	10,706
SER-262	1,549	12	1,537
SER-287	2,115	—	2,115
Total research and development expenses	$ 38,095	$ 10,718	$ 27,377

Research and development expenses were $38.1 million for the year ended December 31, 2015, compared to $10.7 million for the year ended December 31, 2014. The increase of $27.4 million was due primarily to the following:

- an increase of $13.0 million in research expenses related to our microbiome therapeutics platform, due primarily to higher payroll and consultant costs of $10.0 million, which included an increase in stock-based compensation expense of $4.2 million, due primarily to an increase in employee headcount, an increase in laboratory consumables and supply costs of $1.2 million, facility- related costs of $1.4 million and travel costs of $0.4 million;
- an increase of $10.7 million in expenses related to our SER-109 program, due primarily to higher clinical trial costs of $6.0 million, higher bioprocess development costs of $3.0 million, higher laboratory consumables and supply costs of $1.2 million and higher sequencing costs of $0.5 million;
- an increase of $1.5 million in expenses of our SER-262 program in connection with various pre- clinical, development and clinical activities related to the program; and
- an increase of $2.1 million in expenses of our SER-287 program in connection with various pre- clinical, development, and clinical activities related to the program.

We expect that our research and development expenses will continue to increase in the foreseeable future as we advance the clinical development of SER-287 and initiate clinical trials for certain product candidates, including SER-262, continue to discover and develop additional product candidates, including SER-155, and pursue later stages of clinical development of our product candidates.

General and Administrative Expenses

	Year Ended December 31,		
	2015	2014	Change
	(in thousands)		
Personnel related (including stock-based compensation)	$ 8,371	$ 2,047	$ 6,324
Professional fees	5,894	1,785	4,109
Facility-related and other	2,496	532	1,964
Total general and administrative expenses	$ 16,761	$ 4,364	$ 12,397

General and administrative expenses were $16.8 million for the year ended December 31, 2015, compared to $4.4 million for the year ended December 31, 2014. The increase of $12.4 million was primarily due to an increase in personnel related costs of $6.3 million, which included an increase of $3.4 million in stock-based compensation, an increase in professional fees of $4.1 million and an increase in facility-related and other costs of $2.0 million. Personnel related costs increased primarily due to the hiring of additional employees from December 31, 2014 to December 31, 2015 to support corporate operations and business development activities. The increase in professional fees was due to an increase in accounting, audit and legal fees as a result of operating as a public company including $0.5 million in costs in connection with the collaboration agreement with Nestlé . The increase in facility-related and other costs was primarily due to an increase in office-related expenses and rent expense resulting from our new facility for research and development that commenced in February 2015.

Other Income (Expense), Net

Other income (expense), net for the year ended December 31, 2015 was an income of $0.1 million, compared to an expense of $1.6 million for the year ended December 31, 2014. The $1.7 million increase in other income, net was primarily due to gains recorded to adjust the fair value of our preferred stock warrant liability due to a decrease in the fair value of the underlying Series A-2 convertible preferred stock over that period.

In connection with the extinguishment of the loan and security agreement, we recorded a loss on extinguishment of $0.1 million, which has been recorded as interest expense in the year ended December 31, 2015.

Comparison of Years Ended December 31, 2014 and 2013

The following table summarizes our results of operations for the years ended December 31, 2014 and 2013:

	Year Ended December 31,		
	2014	2013	Change
	(in thousands)		
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development	10,718	4,805	5,913
General and administrative	4,364	1,247	3,117
Total operating expenses	15,082	6,052	9,030
Loss from operations	(15,082)	(6,052)	(9,030)
Other income (expense):			
Interest income (expense), net	(209)	(42)	(167)
Revaluation of preferred stock warrant liability	(1,418)	(8)	(1,410)
Total other income (expense), net	(1,627)	(50)	(1,577)
Net loss	$ (16,709)	$ (6,102)	$ (10,607)

Research and Development Expenses

	Year Ended December 31,		
	2014	2013	Change
	(in thousands)		
Microbiome therapeutics platform	$ 7,584	$ 3,424	$ 4,160
SER-109	3,122	729	2,393
SER-262	12	652	(640)
Total research and development expenses	$ 10,718	$ 4,805	$ 5,913

Research and development expenses were $10.7 million for the year ended December 31, 2014, compared to $4.8 million for the year ended December 31, 2013. The increase of $5.9 million was due primarily to the following:

- an increase of $4.2 million in research expenses related to our microbiome therapeutics platform, due primarily to higher payroll and consultant costs of $2.1 million, which included an increase in stock-based compensation expense of $0.9 million; an increase in laboratory supply costs of $0.7 million; an increase in facility-related costs of $0.5 million; and an increase in licensing costs of $0.3 million;
- an increase of $2.4 million in expenses related to our SER-109 program, due primarily to higher clinical trial costs of $2.1 million and higher contract manufacturing costs of $0.4 million, partially offset by lower animal studies costs; and
- a decrease of $0.6 million in expenses of our SER-262 program due to our shifted focus to SER-109 and our microbiome therapeutics platform research.

General and Administrative Expenses

	Year Ended December 31,		
	2014	2013	Change
	(in thousands)		
Personnel related (including stock-based compensation)	$ 2,047	$ 419	$ 1,628
Professional fees	1,785	691	1,094
Facility-related and other	532	137	395
Total general and administrative expenses	$ 4,364	$ 1,247	$ 3,117

General and administrative expenses were $4.4 million for the year ended December 31, 2014, compared to $1.2 million for the year ended December 31, 2013. The increase of $3.2 million was primarily due to an increase in personnel related costs of $1.6 million, which included an increase of $1.0 million in stock-based compensation, an increase in professional fees of $1.1 million and an increase in facility-related and other costs of $0.4 million. Personnel related costs increased primarily due to the hiring of 11 new employees to support corporate operations and business development activities, including the hiring of our Chief Executive Officer in June 2014 and our Chief Financial Officer in November 2014. The increase in professional fees was due to an increase in accounting, audit and legal fees as a result of ongoing business activities. The increase in facility-related and other costs was primarily due to an increase in rent expense resulting from exercising an option of our lease to increase the rentable square footage.

Other Income (Expense), Net

Other income (expense), net for the year ended December 31, 2014 was an expense of $1.6 million, compared to an expense of $0.1 million for the year ended December 31, 2013. During the year ended December 31, 2014, there was an increase of $0.2 million in interest expense incurred on borrowings under our loan and security agreement, as compared to the year ended December 31, 2013. In addition, the revaluation of preferred stock warrant liability for the year ended December 31, 2014 consisted of a $1.4 million loss to adjust the fair value of our preferred stock warrant liability due primarily to an increase in the fair value of the underlying Series A-2 convertible preferred stock over that period. This preferred stock warrant liability relates to a warrant we issued in September 2013 in connection with entering into the loan and security agreement.

Liquidity and Capital Resources

Since our inception, we have not generated any revenue and have incurred recurring net losses. We anticipate that we will continue to incur losses for at least the next several years. We expect that our research and development and general and administrative expenses will continue to increase and, as a result, we will need additional capital to fund our operations, which we may obtain from additional financings, public offerings, research funding, collaborations, contract and grant revenue or other sources.

From our inception through June 30, 2015, we had financed our operations through private placements of our convertible preferred stock, the issuance of convertible promissory notes and borrowings under the loan and security agreement. Through June 30, 2015, we had received gross proceeds of $137.0 million from such transactions and we had repaid $1.0 million of the total $3.0 million borrowed under the loan and security agreement.

On July 1, 2015, we completed the initial public offering of our common stock, or IPO, and issued and sold 8.5 million shares of our common stock at a public offering price of $18.00 per share, resulting in net proceeds of approximately $139.3 million after deducting underwriting discounts and commissions and estimated offering expenses. The shares issued upon closing of the IPO included 1.1 million shares of our common stock, which were sold pursuant to the underwriters' full exercise of their option to purchase additional shares of our common stock. Upon the listing of our common stock on NASDAQ on June 26, 2015, all outstanding shares of our convertible preferred stock automatically converted into 22.9 million shares of our common stock. On September 17, 2015, we made a payment of $1.8 million to Comerica to satisfy all amounts owed under the loan and security agreement. The extinguishment amount was comprised of $1.7 million of outstanding principal and $0.1 million of final payment fees and accrued interest. Upon payment, Comerica released us of all security interests held in our assets, except for the cash collateral securing our corporate cards and standby letters of credit, and terminated all loan documents related to the loan and security agreement (other than any indemnification obligations and other provisions which survive termination).

In connection with the extinguishment of the loan and security agreement, we recorded a loss on extinguishment of $0.1 million, which has been recorded as interest expense in the year ended December 31, 2015.

In January 2016 we entered into the License Agreement with NHS, for the development and commercialization of certain of our product candidates in development for the treatment and management of CDI and IBD, including ulcerative colitis and Crohn's disease. The License Agreement will support the development of our portfolio of products for CDI and IBD in the Licensed Territory, and is expected to provide substantial financial support for our ongoing research and development. We have retained full commercial rights to our entire portfolio of product candidates with respect to the United States and Canada, where we plan to build our own commercial organization.

Under the License Agreement, we granted to NHS an exclusive, royalty-bearing license to develop and commercialize, in the Licensed Territory, certain products based on our microbiome technology that are being developed for the treatment of CDI and IBD, including SER-109, SER-262, SER-287 and SER-301, or, collectively, the NHS Collaboration Products. Upon mutual agreement, one or more other products based on our microbiome technology for CDI or IBD may be added to the License Agreement in lieu of or in addition to the then-existing NHS Collaboration Products. NHS' exclusive license in the Licensed Territory to develop and commercialize NHS Collaboration Products extends to any indications for which the parties agree to develop such products. We also granted to NHS a non-exclusive license to export, develop and make NHS Collaboration Products in the licensed fields worldwide solely for commercialization in the licensed fields and in the Licensed Territory. Additionally, the rights to develop and commercialize a given Collaboration Product in certain non-EU countries within the Licensed Territory may revert to us if NHS either elects not to pursue commercialization of such Collaboration Product in such country, or fails to meet certain agreed upon milestones for commercialization of such Collaboration Product in such country. If the licensed rights in any country revert to us in this way, then we would pay to NHS a royalty in the mid-single digits on net sales of such Collaboration Product in such country.

In exchange for the license, NHS is obligated to pay the Company an upfront cash payment of $120 million, which the Company received in February 2016. NHS has also agreed to pay the Company tiered royalties, at percentages ranging from the high single digits to high teens, of net sales of NHS Collaboration Products in the Licensed Territory. Additionally, NHS has agreed to pay the Company up to $660 million for the achievement of certain development and regulatory milestones and up to an aggregate of $1.125 billion for the achievement of certain commercial milestones related to the sales of NHS Collaboration Products. We expect to receive a total of $30 million in milestone payments in 2016 associated with the planned initiation of a Phase 1b study for SER-262 in CDI and the anticipated initiation of the Phase 3 clinical trial for SER-109 in CDI. The full potential value of the up-front payment and milestone payments payable by NHS is over $1.9 billion, assuming all products receive regulatory approval and are successfully commercialized.

For the development of NHS Collaboration Products for IBD under a global development plan, we are obligated to pay the costs of clinical trials of such products up to and including Phase 2 clinical trials, and 67% of the costs for Phase 3 and other clinical trials of such products, with NHS bearing the remaining 33% of such costs. For other clinical development of NHS Collaboration Products for IBD, we will pay the costs of such activities to support approval in the United States and Canada, and NHS will bear the cost of such activities to support approval of NHS Collaboration Products in the Licensed Territory.

With respect to development of NHS Collaboration Products for CDI under a global development plan, we agreed to pay all costs of an ongoing Phase 2 clinical trial for SER-109 and of Phase 3 clinical trials for SER-109. We agreed to bear all costs of conducting any Phase 1 or Phase 2 clinical trials under a global development plan for NHS Collaboration Products other than SER-109 for CDI. We agreed to pay 67% and NHS agreed to pay 33% of other costs of Phase 3 clinical trials conducted for NHS Collaboration Products other than SER-109 for CDI under a global development plan. For other clinical development of NHS Collaboration Products for CDI, we agreed to pay costs of such development activities to support approval in the United States and Canada, and NHS agreed to bear the cost of such activities to support approval of NHS Collaboration Products in the Licensed Territory.

As of December 31, 2015, we had cash, cash equivalents and investments totaling $205.1 million and an accumulated deficit of $82.6 million.

Cash Flows

The following table summarizes our sources and uses of cash for each of the periods presented:

	Year Ended December 31,		
	2015	2014	2013
	(in thousands)		
Cash used in operating activities	$ (40,844)	$ (10,358)	$ (5,321)
Cash used in investing activities	$ (137,133)	(1,103)	(184)
Cash provided by financing activities	$ 137,725	123,992	944
Net increase (decrease) in cash and cash equivalents	$ (40,252)	$ 112,531	$ (4,561)

Operating Activities. During the year ended December 31, 2015, operating activities used $40.8 million of cash, primarily resulting from our net loss of $54.8 million and cash provided by changes in our operating assets and liabilities of $3.1 million, partially offset by non-cash charges of $10.8 million. Net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2015 consisted of a $2.5 million increase in prepaid expenses and other current assets, a $2.7 million increase in accounts payable and a $2.9 million increase in accrued expenses and other current liabilities. The increases in our accounts payable and accrued expenses were due to the timing of payments, an increase in payroll related costs and an increase in amounts accrued for clinical trial and contracted manufacturing expenses. The increase in prepaid expenses and other current assets was due primarily to prepayments made for clinical trial activities.

During the year ended December 31, 2014, operating activities used $10.4 million of cash, primarily resulting from our net loss of $16.7 million, partially offset by non-cash charges of $4.1 million and by cash provided by changes in our operating assets and liabilities of $2.3 million. Net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2014 consisted primarily of a $0.8 million increase in accounts payable and a $1.5 million increase in accrued expenses and other current liabilities. The increase in accounts payable was due to an overall increase in our development activities, primarily driven by expenditures in connection with advancing the development of SER-109. The increase in accrued expenses and other current liabilities was due to an increase in accruals for development and manufacturing costs related to SER-109; payroll and payroll-related costs due primarily to bonuses; legal and audit-related professional fees; and facility- related costs.

During the year ended December 31, 2013, operating activities used $5.3 million of cash, resulting from our net loss of $6.1 million, partially offset by non-cash charges of $0.3 million and from cash provided by changes in our operating assets and liabilities of $0.5 million. Net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2013 consisted primarily of a $0.3 million increase in accounts payable and a $0.2 million increase in accrued expenses and other current liabilities. The increase in accounts payable was due to the timing of vendor invoicing and payments. The increase in accrued expenses and other current liabilities was primarily due to an increase in our accruals for consultant fees.

Investing Activities. During the year ended December 31, 2015, we used $137.1 million of cash in investing activities, consisting of purchases of investments of $267.8 million, purchases of property and equipment of $4.4 million, and an increase in our restricted cash balance of $1.4 million; these increases were offset by maturities of investments of $136.4 million.

During the year ended December 31, 2014, we used $1.1 million of cash in investing activities, primarily consisting of purchases of property and equipment of $1.0 million.

During the years ended December 31, 2013, we used $0.2 million of cash in investing activities, primarily for purchases of property and equipment.

Financing Activities. During the year ended December 31, 2015, net cash provided by financing activities was $137.7 million as a result of proceeds from the issuance of common stock in connection with our IPO of $143.0 million and proceeds of $0.3 million in connection with the exercise of options and warrants to purchase our common stock. These increases were partially offset by principal repayments of $2.6 million of borrowings under our loan and security agreement and payments of costs in connection with the IPO of $2.9 million.

During the year ended December 31, 2014, net cash provided by financing activities was $124.0 million as a result of net proceeds of $123.2 million received from our sale of Series B, Series C, Series D and Series D-1 convertible preferred stock and $2.0 million from borrowings under our loan and security agreement. These amounts were partially offset by principal repayments of $0.4 million of borrowings under our loan and security agreement and payments of IPO costs of $0.8 million.

During the year ended December 31, 2013, net cash provided by financing activities was $0.9 million as a result of net proceeds of $0.9 million borrowings under our loan and security agreement.

Funding Requirements

We expect our expenses to increase substantially in connection with our ongoing development activities related to SER-109, which is still in clinical development, and our follow-on therapeutics and other programs. In addition we expect to continue to incur additional costs associated with operating as a public company. We anticipate that our expenses will increase substantially if and as we:

- conduct our Phase 2 clinical study of SER-109, our lead product candidate, and potentially advance to Phase 3 clinical studies;
- conduct our Phase 1 clinical study of SER-287;
- continue the research and development of our other product candidates, including commencing clinical trials for SER-262;
- seek to enhance our microbiome therapeutics platform and discover and develop additional product candidates, including SER-155;
- seek regulatory approvals for any product candidates that successfully complete clinical trials;
- potentially establish a sales, marketing and distribution infrastructure and scale-up manufacturing capabilities to commercialize any products for which we may obtain regulatory approval;
- maintain, expand and protect our intellectual property portfolio;
- add clinical, scientific, operational, financial and management information systems and personnel, including personnel to support our product development and potential future commercialization efforts and to support our transition to a public company;
- experience any delays or encounter any issues with any of the above, including but not limited to failed studies, complex results, safety issues or other regulatory challenges; and
- perform our obligations under the collaboration agreement with Nestlé.

We expect that our existing cash, cash equivalents and investments will enable us to fund our operating expenses and capital expenditure requirements into 2018. We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development of SER-109 or our follow-on programs, we are unable to estimate the amounts of increased capital outlays and operating

expenses associated with completing the research and development of our product candidates. Our future capital requirements for SER-109 or our other programs will depend on many factors, including:

- the progress and results of our Phase 2 clinical study of SER-109;
- the progress and results of our Phase 1 clinical study of SER-287;
- the cost of manufacturing clinical supplies of our product candidates;
- the scope, progress, results and costs of pre-clinical development, laboratory testing and clinical trials for our other product candidates, including SER-262 and SER-155;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in businesses, products and technologies, including entering into licensing or collaboration arrangements for product candidates, although we currently have no commitments or agreements to complete any such transactions.

Identifying potential product candidates and conducting pre-clinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if ever. Accordingly, we will need to obtain substantial additional funds to achieve our business objectives.

Adequate additional funds may not be available to us on acceptable terms, or at all. We do not currently have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Additional debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends and may require the issuance of warrants, which could potentially dilute your ownership interest.

If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, in addition to the collaboration with Nestlé, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development programs or any future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations at December 31, 2015 and the effect such obligations are expected to have on our liquidity and cash flows in future periods:

	Payments Due by Period				
	Total	1 Year Less Than	1 - 3 Years	4 - 5 Years	More Than 5 Years
	(in thousands)				
Operating lease commitments[1]	$ 3,637	$ 1,274	$ 1,805	$ 558	$ —
Total	$ 3,637	$ 1,274	$ 1,805	$ 558	$ —

Amounts in the table reflect payments due for (i) our laboratory and office space in Cambridge, Massachusetts under an operating lease agreement that expires on January 31, 2018, (ii) our sublease for office space in Cambridge, Massachusetts, with a term expiring

in May 2016, and (iii) our lease for office and laboratory space in Cambridge, Massachusetts with a term expiring April 2020. The table does not include our lease for office, laboratory and pilot manufacturing space at 200 Sidney Street in Cambridge, Massachusetts with a term commencing in March 2016 and expiring in November 2023. Amounts due under this lease total $41.8 million, with $0.9 million due in less than 1 year, $11.2 million due in 1-3 years, $11.9 million due in 4-5 years and $17.8 million due in more than 5 years. These amounts are not included within the table above as our lease for the Sidney Street facility had not commenced as of December 31, 2015.

We enter into contracts in the normal course of business with CROs for clinical trials, pre-clinical research studies and testing, manufacturing and other services and products for operating purposes. These contracts generally provide for termination upon notice, and therefore we believe that our non- cancelable obligations under these agreements are not material.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the Securities and Exchange Commission.

Recently Issued and Adopted Accounting Pronouncements

For a discussion of recent accounting standards see Note 2, Summary of Significant Accounting Policies, to our consolidated financial statements included in this report.

Item 7A. Quantitative and Qualitative Disclosures about Market Risks

Interest Rate Fluctuation Risk

We are exposed to market risk related to changes in interest rates. As of December 31, 2015, our cash, cash equivalents and investments consisted of cash, money market accounts and investments in corporate bonds and commercial paper with remaining maturities of less than one year. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because of the short-term nature of the instruments in our portfolio, an immediate 10% change in market interest rates would not have a material impact on the fair market value of our investment portfolio or on our financial position or results of operations.

Item 8. Financial Statements and Supplementary Data

The financial statements required to be filed pursuant to this Item 8 are appended to this report. An index of those financial statements is found in Item 15.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a- 15(e) and 15d- 15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”)), as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our principal executive officer and principal financial officer have concluded that as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control Over Financial Reporting

This Annual Report on Form 10-K does not include a report of management's assessment regarding internal control over financial reporting or an attestation report of our registered public accounting firm due to a transition period established by the rules of the SEC for newly public companies.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers, and Corporate Governance

Our board of directors has adopted a Code of Business Conduct and Ethics applicable to all officers, directors and employees, which is available on our website at www.serestherapeutics.com in the “Investors & Media” section under “Corporate Governance.” We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics, as well as NASDAQ’s requirement to disclose waivers with respect to directors and executive officers, by posting such information on our website at the address and location specified above.

The information in response to this item is contained in part under the caption “Executive Officers of the Registrant” at the end of Part I of this Annual Report on Form 10-K. The remainder of the response to this item is contained in the Proxy Statement for our Annual Meeting of Stockholders scheduled to be held on June 15, 2016 and is incorporated herein by reference.

Item 11. Executive Compensation

The information required to be disclosed by this item is contained in the Proxy Statement for our Annual Meeting of Stockholders scheduled to be held on June 15, 2016 and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required to be disclosed by this item is contained in the Proxy Statement for our Annual Meeting of Stockholders scheduled to be held on June 15, 2016 and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required to be disclosed by this item is contained in the Proxy Statement for our Annual Meeting of Stockholders scheduled to be held on June 15, 2016 and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required to be disclosed by this item is contained in the Proxy Statement for our Annual Meeting of Stockholders scheduled to be held on June 15, 2016 and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statements and Schedules

(a)(1) Financial Statements.

See the “Index to Consolidated Financial Statements” on page F-1 below for the list of financial statements filed as part of this report.

(a)(2) Financial Statement Schedules.

All schedules have been omitted because they are not required or because the required information is given in the Consolidated Financial Statements or Notes thereto set forth below beginning on page F-1.

(a)(3) Exhibits.

See the Exhibit Index immediately following the signature page of this Annual Report on Form 10-K. The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this Annual Report on Form 10-K.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Seres Therapeutics, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive loss, of convertible preferred stock and stockholders' equity (deficit) and of cash flows present fairly, in all material respects, the financial position of Seres Therapeutics, Inc. and its subsidiaries at December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 14, 2016

SERES THERAPEUTICS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share data)

	December 31,	
	2015	2014
Assets		
Current assets:		
Cash and cash equivalents	$ 73,933	$ 114,185
Investments	131,149	—
Prepaid expenses and other current assets	2,528	58
Total current assets	207,610	114,243
Property and equipment, net	7,751	1,264
Restricted cash	1,539	139
Deferred offering costs	—	1,684
Deferred financing costs	—	15
Total assets	$ 216,900	$ 117,345
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	$ 5,397	$ 2,166
Accrued expenses and other current liabilities	5,523	1,737
Notes payable; current portion	—	1,200
Total current liabilities	10,920	5,103
Lease incentive obligation	586	—
Notes payable, net of discount	—	1,304
Preferred stock warrant liability	—	1,582
Total liabilities	11,506	7,989
Commitments and contingencies:		
Convertible preferred stock (Series A, A-2, B, C, D and D-1), $0.001 par value; 10,000,000 and 24,348,003 shares authorized at December 31, 2015 and 2014, respectively; 0 and 22,866,987 shares issued and outstanding at December 31, 2015 and 2014, respectively; aggregate liquidation preference of $0 an $137,283 at December 31, 2015 and 2014, respectively	—	136,077
Stockholders' equity (deficit):		
Common stock, $0.001 par value; 200,000,000 and 38,000,000 shares authorized at December 31, 2015 and 2014, respectively; 39,082,017 and 6,890,250 shares issued and outstanding at December 31, 2015 and 2014, respectively	39	7
Additional paid-in capital	287,937	1,104
Accumulated other comprehensive income (loss)	30	—
Accumulated deficit	(82,612)	(27,832)
Total stockholders' equity (deficit)	205,394	(26,721)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 216,900	$ 117,345

The accompanying notes are an integral part of these consolidated financial statements.

SERES THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except share and per share data)

	Year Ended December 31,		
	2015	2014	2013
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development expenses	$ 38,095	10,718	4,805
General and administrative expenses	16,761	4,364	1,247
Total operating expenses	54,856	15,082	6,052
Loss from operations	(54,856)	(15,082)	(6,052)
Other income (expense):			
Interest income	638	—	—
Interest expense	(555)	(209)	(42)
Revaluation of preferred stock warrant liability	(7)	(1,418)	(8)
Total other income (expense), net	76	(1,627)	(50)
Net loss	$ (54,780)	(16,709)	(6,102)
Accretion of convertible preferred stock to redemption value	—	(1,291)	(875)
Net loss attributable to common stockholders	$ (54,780)	$ (18,000)	$ (6,977)
Net loss per share attributable to common stockholders, basic and diluted	$ (2.33)	$ (2.67)	$ (1.09)
Weighted average common shares outstanding, basic and diluted	23,532,400	6,748,037	6,394,916
Other comprehensive income (loss):			
Unrealized gain on investments, net of tax of $0	30	—	—
Total other comprehensive income	30	—	—
Comprehensive loss	$ (54,750)	$ (18,000)	$ (6,977)

The accompanying notes are an integral part of these consolidated financial statements.

SERES THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(In thousands, except share data)

	Series A, A-2, B, C, D and D-1 Convertible Preferred Stock		Common Stock		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	Total Stockholders' Equity
	Shares	Amount	Shares	Par Value	Capital	Income (Loss)	Deficit	(Deficit)
Balance at December 31, 2012	10,478,189	10,708	7,590,000	7	—	—	(4,355)	(4,348)
Repurchase of unvested restricted common stock	—	—	(735,000)	—	—	—	—	—
Stock-based compensation expense	—	—	—	—	209	—	—	209
Accretion of convertible preferred stock to redemption value	—	875	—	—	(209)	—	(666)	(875)
Net loss	—	—	—	—	—	—	(6,102)	(6,102)
Balance at December 31, 2013	10,478,189	11,583	6,855,000	7	—	—	(11,123)	(11,116)
Issuance of Series B convertible preferred stock, net of issuance costs of $71	4,831,359	10,558	—	—	—	—	—	—
Issuance of Series C convertible preferred stock, net of issuance costs of $187	3,946,328	47,813	—	—	—	—	—	—
Issuance of Series D and D-1 convertible preferred stock, net of issuance costs of $168	3,611,111	64,832	—	—	—	—	—	—
Issuance of common stock upon exercise of stock options	—	—	28,687	—	5	—	—	5
Issuance of common stock	—	—	6,563	—	5	—	—	5
Issuance of common stock warrant	—	—	—	—	317	—	—	317
Stock-based compensation expense	—	—	—	—	2,068	—	—	2,068
Accretion of convertible preferred stock to redemption value	—	1,291	—	—	(1,291)	—	—	(1,291)
Net loss	—	—	—	—	—	—	(16,709)	(16,709)
Balance at December 31, 2014	22,866,987	$ 136,077	6,890,250	$ 7	$ 1,104	$ —	$ (27,832)	$ (26,721)
Issuance of common stock upon exercise of stock options	—	—	232,970	—	93	—	—	93
Issuance of common stock upon exercise of common stock warrant	—	—	546,672	1	168	—	—	169
Issuance of common stock upon completion of initial public offering, net of offering costs	—	—	8,545,138	8	139,259	—	—	139,267
Stock-based compensation expense	—	—	—	—	9,694	—	—	9,694
Series D convertible preferred stock issuance costs	—	(24)	—	—	—	—	—	—
Reclassification of preferred stock warrant liability	—	—	—	—	1,589	—	—	1,589
Conversion of convertible preferred stock upon listing	(22,866,987)	(136,053)	22,866,987	23	136,030	—	—	136,053
Unrealized gain on investments	—	—	—	—	—	30	—	30
Net loss	—	—	—	—	—	—	(54,780)	(54,780)
Balance at December 31, 2015	—	$ —	39,082,017	$ 39	$ 287,937	$ 30	$ (82,612)	$ 205,394

SERES THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2015	2014	2013
Cash flows from operating activities:			
Net loss	$ (54,780)	$ (16,709)	$ (6,102)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation expense	9,694	2,068	209
Depreciation and amortization expense	728	190	88
Loss from revaluation of preferred stock warrant liability	7	1,418	8
Licensing fees paid in common stock warrant	—	317	—
Other non-cash expense	367	81	19
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	(2,470)	(7)	(21)
Accounts payable	2,682	810	281
Accrued expenses and other liabilities	2,928	1,474	197
Net cash used in operating activities	(40,844)	(10,358)	(5,321)
Cash flows from investing activities:			
Purchases of property and equipment	(4,362)	(1,001)	(174)
Purchases of Short-term investments	(267,761)	—	—
Maturities of Short-term investments	136,390	—	—
Changes in restricted cash	(1,400)	(102)	(10)
Net cash used in investing activities	(137,133)	(1,103)	(184)
Cash flows from financing activities:			
Proceeds from issuance of convertible preferred stock, net of issuance costs	(24)	123,203	—
Proceeds from issuance of notes payable and preferred stock warrant, net of issuance costs	—	2,000	944
Proceeds from exercise of stock options and warrants	262	5	—
Proceeds from Issuance of common stock in connection with IPO	143,015	—	—
Proceeds from issuance of common stock and restricted common stock	—	5	—
Repayment of notes payable	(2,600)	(400)	—
Payments of initial public offering costs	(2,928)	(821)	—
Net cash provided by financing activities	137,725	123,992	944
Net increase (decrease) in cash and cash equivalents	(40,252)	112,531	(4,561)
Cash and cash equivalents at beginning of year	114,185	1,654	6,215
Cash and cash equivalents at end of year	$ 73,933	$ 114,185	$ 1,654
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 163	$ 122	$ 20
Supplemental disclosure of non-cash investing and financing activities:			
Accretion of convertible preferred stock to redemption value	$ —	$ 1,291	$ 875
Issuance of preferred stock warrant in connection with notes payable	$ —	$ —	$ 156
Deferred offering costs included in accounts payable	$ —	$ 863	$ —
Property and equipment purchases included in accounts payable and accrued expenses	$ 2,953	$ 101	$ —

1. Nature of the Business and Basis of Presentation

Seres Therapeutics, Inc. (the "Company") was incorporated under the laws of the State of Delaware in October 2010 under the name Newco LS21, Inc. In October 2011, the company changed its name to Seres Health, Inc., and in May 2015, the Company changed its name to Seres Therapeutics, Inc. The Company is a microbiome therapeutics platform company developing a novel class of biological drugs, which are designed to restore health by repairing the function of a dysbiotic microbiome. The Company's lead product candidate, SER-109, is designed to prevent further recurrences of *Clostridium difficile* infection ("CDI"), a debilitating infection of the colon, and, if approved by the U.S. Food and Drug Administration ("FDA"), could be a first-in-field drug. Using its microbiome therapeutics platform, the Company is developing additional product candidates, including SER-262 to prevent an initial recurrence of primary CDI and SER-287 to treat ulcerative colitis, and other product candidates to treat enteric pathogens, such as antibiotic-resistant bacteria. The Company is also conducting research on metabolic diseases, such as early-stage, non-insulin dependent diabetes; other inflammatory diseases, such as Crohn's disease; and infections related to antibiotic use, cancer chemotherapy and immune suppression.

The Company is subject to risks common to companies in the biotechnology industry including, but not limited to, new technological innovations, protection of proprietary technology, dependence on key personnel, compliance with government regulations and the need to obtain additional financing. Product candidates currently under development will require significant additional research and development efforts, including extensive pre-clinical and clinical testing and regulatory approval, prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel infrastructure and extensive compliance-reporting capabilities.

The Company's product candidates are in development. There can be no assurance that the Company's research and development will be successfully completed, that adequate protection for the Company's intellectual property will be obtained, that any products developed will obtain necessary government regulatory approval or that any approved products will be commercially viable. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will generate significant revenue from product sales. The Company operates in an environment of rapid change in technology and substantial competition from pharmaceutical and biotechnology companies. In addition, the Company is dependent upon the services of its employees and consultants.

The Company's consolidated financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities in the ordinary course of business. The Company has experienced negative cash flows and had an accumulated deficit of $82,612 and $27,832 as of December 31, 2015 and 2014, respectively. The Company expects that its cash, cash equivalents and investments at December 31, 2015 of $205,082 will enable it to fund its operating expense and capital expenditure requirements through at least December 31, 2016. The future viability of the Company is dependent on its ability to generate cash from operating activities or to raise additional capital to finance its operations. The Company's failure to raise capital as and when needed could have a negative impact on its financial condition and ability to pursue its business strategies.

On July 1, 2015, the Company completed an initial public offering ("IPO") of its common stock, and issued and sold 8,545,138 shares of common stock at a price to the public of $18.00 per share, resulting in net proceeds of approximately $139,267 after deducting underwriting discounts and commissions and offering expenses. The shares issued upon closing of the IPO included 1,114,583 shares of the Company's common stock, which were sold to the underwriters pursuant to the full exercise of their option to purchase additional shares of common stock. Upon the listing of the Company's common stock on the NASDAQ Global Select Market ("NASDAQ") on June 26, 2015, all outstanding shares of the Company's convertible preferred stock automatically converted into 22,866,987 shares of the Company's common stock. In addition, at this time, the warrant to purchase shares of the Company's Series A-2 convertible preferred stock was converted into a warrant to purchase shares of the Company's common stock.

The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP") and include the accounts of the Company and its wholly owned subsidiaries after elimination of all intercompany accounts and transactions.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the reporting periods. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, the accrual of research and development expenses and the valuation of common stock, stock-based awards and the preferred stock warrant liability. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Actual results could differ from the Company's estimates.

Cash Equivalents

The Company considers all short-term, highly liquid investments with original maturities of 90 days or less at acquisition date to be cash equivalents. Cash equivalents, which consist of money market accounts, corporate bonds and commercial paper purchased with original maturities of less than 90 days from the date of purchase, are stated at fair value.

Restricted Cash

The Company held cash of $1,539 as of December 31, 2015 and $139 as of December 31, 2014 in a separate restricted bank account as a security deposit for the lease of the Company's facilities and as collateral for the Company's credit card program with Comerica Bank. The Company has classified these deposits as long-term restricted cash on its balance sheet.

Investments

The Company classifies its available-for-sale investments as current assets on the consolidated balance sheet if they mature within one year from the balance sheet date.

The Company classifies all of its investments as available-for-sale securities. The Company's investments are measured and reported at fair value using quoted prices in active markets for similar securities. Unrealized gains and losses on available-for-sale securities are reported as a separate component of stockholders' equity (deficit). The cost of securities sold is determined on a specific identification basis, and realized gains and losses are included in other income (expense) within the consolidated statement of operations and comprehensive loss. If any adjustment to fair value reflects a decline in the value of the investment that the Company considers to be "other than temporary", the Company reduces the investment to fair value through a charge to the consolidated statement of operations and comprehensive loss. No such adjustments were necessary during the periods presented.

Concentration of Credit Risk and of Significant Suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents and investments. The Company has all cash, cash equivalents and investments balances at one accredited financial institution, in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company is dependent on third-party manufacturers to supply products for research and development activities of its programs, including pre-clinical and clinical testing. These programs could be adversely affected by a significant interruption in the supply of such drug substance products.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company's cash equivalents, investments and preferred stock warrant liability are carried at fair value, determined according to the fair value hierarchy described above (see Note 3). The carrying values of the Company's cash, prepaid expenses, accounts payable and accrued expenses approximate their fair value due to the short-term nature of these liabilities. The carrying value of the Company's outstanding debt as of December 31, 2014 approximates fair value based on the variable interest rate for the borrowings outstanding as well as short duration of the term of the note. The fair value of the outstanding debt was estimated using a discounted cash flow analysis based on current market interest rates for debt issuances with similar remaining years to maturity, adjusted for credit risk, which represents a Level 3 measurement.

Deferred Offering Costs

The Company capitalizes certain legal, accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs (non-current) until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of additional paid-in capital generated as a result of the financing. As of December 31, 2015 and 2014 the Company had recorded $0 and $1,684, respectively, of deferred offering costs in contemplation of the IPO. On July 1, 2015, the Company reclassified $3,748 of deferred offering costs to additional paid in capital as a reduction of the proceeds from the IPO.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation expense is recognized using the straight-line method over the useful life of the asset. Laboratory equipment is depreciated over five years. Computer equipment and furniture and office equipment are depreciated over three years. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life of the related asset. Expenditures for repairs and maintenance of assets are charged to expense as incurred. Upon retirement or sale, the cost and related accumulated depreciation of assets disposed of are removed from the accounts and any resulting gain or loss is included in loss from operations.

Impairment of Long-Lived Assets

Long-lived assets consist of property and equipment. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset

over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Research and Development Costs

Research and development costs are expensed as incurred. Research and development expenses include salaries, stock-based compensation and benefits of employees, third-party license fees and other operational costs related to the Company's research and development activities, including allocated facility-related expenses and external costs of outside vendors engaged to conduct both pre-clinical studies and clinical trials.

Research Contract Costs and Accruals

The Company has entered into various research and development contracts with research institutions and other companies. These agreements are generally cancelable, and related payments are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Patent Costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses.

Accounting for Stock-Based Compensation

The Company measures all stock options and other stock-based awards granted to employees and directors based on the fair value on the date of the grant and recognizes compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, the Company issues stock options and restricted stock awards with only service-based vesting conditions and records the expense for these awards using the straight-line method.

The Company measures stock-based awards granted to consultants and non-employees based on the fair value of the award on the date on which the related service is complete. Compensation expense is recognized over the period during which services are rendered by such consultants and non-employees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of the Company's common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The Company classifies stock-based compensation expense in its consolidated statement of operations and comprehensive loss in the same manner in which the award recipient's payroll costs are classified or in which the award recipients' service payments are classified.

The Company recognizes compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate, the Company has considered its historical experience to estimate pre-vesting forfeitures for service-based awards. The impact of a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual forfeiture rate is materially different from the Company's estimate, the Company may be required to record adjustments to stock- based compensation expense in future periods.

The fair value of each stock option grant is estimated on the date of grant using the Black- Scholes option-pricing model. The Company historically has been a private company and lacks company-specific historical and implied volatility information. Therefore, it estimates its expected stock volatility based on the historical volatility of a publicly traded set of peer companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company's stock options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla"

options. The expected term of stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the consolidated financial statements or in the Company's tax returns. Deferred taxes are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Changes in deferred tax assets and liabilities are recorded in the provision for income taxes. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, a valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

The Company accounts for uncertainty in income taxes recognized in the financial statements by applying a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more-likely-than-not to be sustained, the tax position is then assessed to determine the amount of benefit to recognize in the financial statements. The amount of the benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. The provision for income taxes includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

Warrant to Purchase Convertible Preferred Stock

The Company classified a warrant to purchase shares of its Series A-2 convertible preferred stock as a liability on its consolidated balance sheets as this warrant was a free-standing financial instrument that could have required the Company to transfer assets upon exercise. The warrant was initially recorded at fair value on date of grant, and it was subsequently remeasured to fair value at each balance sheet date. Changes in fair value of the warrant were recognized as a component of other income (expense), net in the consolidated statement of operations and comprehensive loss. The Company continued to adjust the liability for changes in fair value until the warrant became a warrant to purchase common stock in connection with the IPO.

The Company used the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value the preferred stock warrant. The Company assessed these assumptions and estimates on a quarterly basis as additional information impacting the assumptions was obtained. Estimates and assumptions impacting the fair value measurement included the fair value per share of the underlying Series A-2 convertible preferred stock, the remaining contractual term of the warrant, the risk-free interest rate, the expected dividend yield and the expected volatility of the price of the underlying preferred stock. The Company determined the fair value per share of the underlying preferred stock by taking into consideration the most recent sales of its convertible preferred stock, results obtained from third-party valuations and additional factors that were deemed relevant. The Company historically has been a private company and lacks company-specific historical and implied volatility information of its stock. Therefore, it estimated its expected stock volatility based on the historical volatility of publicly traded peer companies for a term equal to the remaining contractual term of the warrant. The risk-free interest rate was determined by reference to the U.S. Treasury yield curve for time periods approximately equal to the remaining contractual term of the warrant. Expected dividend yield was based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

Segment Data

The Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The Company's singular focus is on developing Ecobiotic microbiome therapeutics to treat dysbiosis in the colonic microbiome. No revenue has been generated since inception, and all tangible assets are held in the United States.

Comprehensive Loss

Comprehensive loss includes net loss as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. There was no difference between net loss and comprehensive loss for the years ended December 31, 2014 and 2013. For the year ended December 31, 2015, other comprehensive income (loss) consisted of changes in unrealized gains (losses) from available-for-sale investments.

Net Loss per Share

Basic net loss per share is computed using the weighted average number of common shares outstanding during the period. Diluted net loss per share is computed using the sum of the weighted average number of common shares outstanding during the period and, if dilutive, the weighted average number of potential shares of common stock, including the assumed exercise of stock options and warrants and unvested restricted stock. The Company applies the two-class method to calculate its basic and diluted net loss per share attributable to common stockholders, as its convertible preferred stock, which converted to Common Stock upon completion of the listing of the Company's common stock on the NASDAQ on June 26, 2015, and common stock are participating securities. The two-class method is an earnings allocation formula that treats a participating security as having rights to earnings that otherwise would have been available to common stockholders. However, the two-class method does not impact the net loss per share of common stock as the Company was in a net loss position for each of the periods presented and preferred stockholders do not participate in losses.

The Company's convertible preferred stock contractually entitles the holders of such shares to participate in dividends but does not contractually require the holders of such shares to participate in losses of the Company. Similarly, restricted stock awards granted by the Company entitle the holder of such awards to dividends declared or paid by the board of directors, regardless of whether such awards are unvested, as if such shares were outstanding common shares at the time of the dividend. However, the unvested restricted stock awards are not entitled to share in the residual net assets (deficit) of the Company. Accordingly, in periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders, since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive.

Recently Issued and Adopted Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which delayed the effective date of the new standard from January 1, 2017 to January 1, 2018. The FASB also agreed to allow entities to choose to adopt the standard as of the original effective date. We are currently evaluating the method of adoption and the potential impact that Topic 606 may have on our financial position and results of operations.

In April 2015, the FASB issued ASU 2015-03, *Simplifying the Presentation of Debt Issuance Costs*. The amendments in this update require that debt issuance costs be presented in the balance sheet as a direct deduction from the carrying amount of the debt liability. The new standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2015. Early adoption is permitted. The Company believes the adoption of this standard will not have a material impact on its financial statements.

In May 2015, the FASB issued ASU No. 2015-07, Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent). The new standard removes the requirement to categorize within the fair value hierarchy all investments for which fair value is measured using the net asset value per share practical expedient. The new standard will be effective for us on January 1, 2016. Early application is permitted. The Company believes the adoption of this standard will not have a material impact on its financial statements.

In November 2015, the FASB issued ASU 2015-17, "Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes," to simplify the presentation of deferred income taxes by requiring that deferred tax liabilities and assets be classified as noncurrent on the balance sheet. This update is effective for annual reporting periods beginning after December 31, 2016, including

interim periods within those annual periods, and early adoption is permitted. Accordingly, the Company elected to early adopt ASU 2015-17 for the year ended December 31, 2015. There was no impact to the consolidated financial statements as a result of this change.

3. Fair Value of Financial Assets and Liabilities

The following tables present information about the Company's assets and liabilities as of December 31, 2015 and 2014 that are measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair Value Measurements as of December 31, 2015 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash Equivalents	$ —	$ 23,125	$ —	$ 23,125
Repurchase Agreements	—	20,000	—	20,000
Investments:				
Commercial Paper	—	64,820	—	64,820
Corporate Bonds	—	46,490	—	46,490
Government Securities	—	15,819	—	15,819
Treasury Bonds	—	4,020	—	4,020
	$	$ 174,274	$	$ 174,274

	Fair Value Measurements as of December 31, 2014 Using:			
	Level 1	Level 2	Level 3	Total
Liabilities:				
Liability for preferred stock warrant	$ —	$ —	$ 1,582	$ 1,582
	$ —	$ —	$ 1,582	$ 1,582

As of December 31, 2015, the Company's cash equivalents consisted of money market funds, corporate bonds, commercial paper, government securities and repurchase agreements with original maturities of less than 90 days from the date of purchase and were valued based on Level 2 inputs. Repurchase agreements are agreements with banks to repurchase notes that are collateralized by U.S. government securities.

The fair value of the Company's investments, which consisted of corporate bonds, commercial paper and government securities as of December 31, 2015, were determined using Level 2 inputs. During the years ended December 31, 2015 and 2014, there were no transfers between Level 1, Level 2 and Level 3.

The liability for the preferred stock warrant in the amount of $1,582 in the table above as of December 31, 2014 is comprised of the value of a warrant for the purchase of Series A-2 convertible preferred stock and is based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. There were no other assets or liabilities measured at a fair value on a recurring basis at December 31, 2015 or December 31, 2014.

In connection with the automatic conversion of the Company's convertible preferred stock, which occurred upon the listing of the Company's common stock on the NASDAQ on June, 26, 2015, the preferred stock warrant become a warrant to purchase common stock and the liability was remeasured at fair value and reclassified to additional paid-in-capital. The fair value of the preferred stock warrant liability at the time was tied to the initial offering price of $18.00 per share of common stock.

4. Investments

As of December 31, 2015, the fair value of available-for-sale investments by type of security was as follows:

	December 31, 2015			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
Investments:				
Commercial Paper	$ 64,733	$ 87	$ —	$ 64,820
Corporate Bonds	46,538	—	(48)	46,490
Government Securities	15,823	—	(4)	15,819
Treasury Bonds	4,022	—	(2)	4,020
	$ 131,116	$ 87	$ (54)	$ 131,149

Investments with original maturities of less than 90 days are included in cash and cash equivalents on the consolidated balance sheets and are not included in the table above. The Company did not hold any investments as of December 31, 2014.

As of December 31, 2015, the Company's corporate bonds, commercial paper, government securities and treasury bonds had remaining maturities of less than 12 months.

5. Property and Equipment, Net

Property and equipment, net consisted of the following:

	December 31, 2015	December 31, 2014
Laboratory equipment	$ 4,370	$ 1,260
Computer equipment	408	115
Furniture and office equipment	285	58
Leasehold improvements	1,856	114
Construction in progress	1,843	—
	8,762	1,547
Less: Accumulated depreciation and amortization	(1,011)	(283)
	$ 7,751	$ 1,264

Depreciation and amortization expense was $728, $190 and $88 for the years ended December 31, 2015, 2014 and 2013, respectively.

6. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following:

	December 31, 2015	December 31, 2014
Development and clinical manufacturing costs	$ 1,436	$ 598
Payroll and payroll-related costs	2,756	547
Professional fees	184	314
Facility and other	1,147	278
	$ 5,523	$ 1,737

7. Notes Payable

On September 9, 2013, the Company entered into a loan and security agreement with Comerica Bank ("Comerica"), as amended on December 22, 2014, which provided for borrowings of up to $3,000 through August 2014. On September 9, 2013, the Company received $1,000 from borrowings under the agreement, and from March to August 2014, the Company received $2,000 from additional borrowings under the loan and security agreement. Through December 31, 2014, the Company borrowed the full $3,000 available under the loan and security agreement and had made $400 of scheduled principal repayments. During the year ended December 31, 2015, the Company made $900 of scheduled principal repayments. Borrowings under the loan and security agreement were collateralized by substantially all of the Company's assets, except for its intellectual property.

On September 17, 2015, the Company made a payment of $1,765 to Comerica to satisfy all amounts owed under the loan and security agreement. The extinguishment amount was comprised of $1,700 of outstanding principal and $65 of final fees and accrued interest. Upon payment, Comerica released the Company of all security interests held in the Company's assets, except for the cash collateral securing the Company's corporate cards and standby letters of credit, and terminated all loan documents related to the loan and security agreement (other than any indemnification obligations and other provisions which survive termination).

In connection with the extinguishment of the loan and security agreement, the Company recorded a loss on extinguishment of $140, which has been recorded as interest expense in the year ended December 31, 2015.

Accretion of the debt discount recorded as additional interest expense was $96 and $66 for the years ended December 31, 2015 and 2014, respectively. As of December 31, 2015 and December 31, 2014, the unamortized debt discount was $0 and $96, respectively.

8. Preferred Stock Warrant Liability

In September 2013, the Company issued a warrant to purchase 92,127 shares of Series A-2 convertible preferred stock in connection with the loan and security agreement (see Note 7). The warrant was immediately exercisable at an exercise price of $1.78 per share and had a contractual term of ten years from issuance. The fair value of the warrant at issuance was estimated to be $156 and was recorded as a debt discount and as a preferred stock warrant liability.

The Company remeasured the fair value of the liability for this preferred stock warrant at each reporting date from its grant date, with any adjustments being recorded as a component of other income (expense), net in the Company's consolidated statement of operations and comprehensive loss. The Company recorded losses of $7, $1,418 and $8 for the years ended December 31, 2015, 2014 and 2013, respectively, to reflect the change in fair value of this preferred stock warrant.

The following assumptions and inputs were used in determining the fair value of the preferred stock warrant liability valued using the Black-Scholes option-pricing model:

	Year Ended December 31,		
	2015	2014	2013
Risk-free interest rate	2.40%	2.17%	3.20%
Expected term (in years)	8.2	8.7	9.7
Expected volatility	91.2%	84.0%	86.0%
Expected dividend yield	0%	0%	0%
Fair value of Series A-2 convertible preferred stock	$ 17.26	$ 17.18	$ 2.07

The following table provides a rollforward of the fair value of the Company's preferred stock warrant liability:

	Fair Value
Balance as of December 31, 2012	$ —
Issuance of Series A-2 preferred stock warrant	156
Loss on revaluation	8
Balance as of December 31, 2013	164
Loss on revaluation	1,418
Balance as of December 31, 2014	$ 1,582
Loss on revaluation	7
Reclassification to stockholders' equity	(1,589)
Balance as of December 31, 2015	$ —

In connection with the automatic conversion of the Company's convertible preferred stock, which occurred upon the listing of the Company's common stock on the NASDAQ on June 26, 2015, the preferred stock warrant became a warrant to purchase common stock. The Company performed the final mark to market adjustment on the preferred stock warrant using the fair value of the underlying common shares of $18.00 per share on June 26, 2015 and recorded the change in fair value in other income (expense), net in the consolidated statement of operations and comprehensive loss. The preferred stock warrant liability was then reclassified to additional paid-in-capital as it became a warrant to purchase common stock.

On August 17, 2015, the common stock warrant was exercised in full at an exercise price of $1.78 per share of common stock. The Company received proceeds of $164 in connection with the exercise of the common stock warrant.

9. Convertible Preferred Stock

On July 1, 2015, in connection with the closing of the IPO, the Company effected its Restated Certificate of Incorporation, which authorizes the Company to issue 10,000,000 shares of preferred stock, $0.001 par value per share.

All outstanding shares of the Company's convertible preferred stock automatically converted into 22,866,987 shares of the Company's common stock upon the listing of the Company's common stock on the NASDAQ on June 26, 2015.

10. Stockholders' Equity (Deficit) Common Stock

On July 1, 2015, the Company completed an IPO, and issued and sold 8,545,138 shares of common stock at a public offering price of $18.00 per share, resulting in net proceeds of approximately $139,267 after deducting underwriting discounts and commissions and other offering expenses totaling $3,748. The shares issued upon closing of the IPO included 1,114,583 shares of the Company's common stock, which were sold to the underwriters pursuant to the full exercise of their option to purchase additional shares of common stock. Upon the listing of the Company's common stock on the NASDAQ on June 26, 2015, all outstanding shares of the Company's convertible preferred stock automatically converted into 22,866,987 shares of the Company's common stock.

As of December 31, 2014, the Company's Amended and Restated Certificate of Incorporation, as further amended, authorized the Company to issue 38,000,000 shares of common stock, $0.001 par value per share. On July 1, 2015, in connection with the closing of the IPO, the Company effected its Restated Certificate of Incorporation, which authorizes the Company to issue 200,000,000 shares of common stock, $0.001 par value per share.

Common Stock Warrants

In June 2014, the Company entered into a research agreement with the Mayo Foundation for Medical Education and Research ("Mayo") under which the Company acquired a license to intellectual property. In exchange for the license, the Company issued to Mayo a warrant to purchase 454,545 shares of common stock at an exercise price of $0.01 per share, which was immediately exercisable. Upon issuance of the warrant, the Company recorded research and development expense of $317 for the fair value of the warrant, determined using the following assumptions in the Black-Scholes option-pricing model: expected volatility of 86.0%, risk-

free interest rate of 2.3%, expected term of seven years (equaling the contractual term of the warrant) and no expected dividends. Because this warrant was indexed to the Company's stock and could only be settled by gross physical delivery of shares the Company determined that this warrant qualified for equity classification. This warrant was exercised on April 29, 2015.

The Company also issued to Mayo an additional warrant (the "performance warrant") to purchase up to 284,090 shares of common stock at an exercise price equal to the per share price at which the Company most recently sold shares of its preferred stock. The performance warrant was exercisable for a number of shares to be determined by the Company's board of directors from time to time, upon the achievement by Mayo of specified milestones. The performance warrant provided for termination upon the closing of an initial public offering by the Company. The IPO closed prior to any probable achievement of the specified milestones, therefore, the warrant terminated and the Company did not record any expense for the performance warrant from the date of issuance through the closing of the IPO.

2012 Stock Incentive Plan

The Company's 2012 Stock Incentive Plan, as amended, (the "2012 Plan") provides for the Company to sell or issue common stock or restricted common stock, or to grant incentive stock options or nonqualified stock options for the purchase of common stock, to employees, members of the board of directors and consultants of the Company. The 2012 Plan is administered by the board of directors, or at the discretion of the board of directors, by a committee of the board of directors. The exercise prices, vesting and other restrictions are determined at the discretion of the board of directors, or their committee if so delegated, except that the exercise price per share of stock options may not be less than 100% of the fair market value of the share of common stock on the date of grant and the term of stock option may not be greater than ten years. The Company generally grants stock-based awards with service conditions only ("service-based" awards).

Stock options granted under the 2012 Plan generally vest over four years and expire after ten years, although options have been granted with vesting terms less than four years.

The total number of shares of common stock that may be issued under the 2012 Plan was 1,261,836 shares as of December 31, 2013. In May 2014, the Company effected an increase in the number of shares of common stock reserved for issuance under the 2012 Plan to 3,561,836 shares. In December 2014, the Company effected an increase in the number of shares of common stock reserved for issuance under the 2012 Plan to 3,608,029 shares. The total number of shares of common stock that may be issued under the 2012 Plan was 3,608,029 shares as of December 31, 2014. In March 2015, the Company effected an increase in the number of shares of common stock reserved for issuance under the 2012 Plan to 4,309,653 shares. As of December 31, 2015, there were 120,250 shares available for future grant under the 2012 Plan.

As required by the 2012 Plan, the exercise price for stock options granted is not to be less than the fair value of common shares as determined by the Company as of the date of grant. The Company values its common stock by taking into consideration its most recently available valuation of common shares performed by management and the board of directors as well as additional factors which may have changed since the date of the most recent contemporaneous valuation through the date of grant.

2015 Incentive Award Plan

On June 16, 2015, the Company's stockholders approved the 2015 Incentive Award Plan (the "2015 Plan"), which became effective on June 25, 2015. The 2015 Plan provides for the grant of incentive stock options, nonqualified stock options, stock appreciation rights, restricted stock awards, restricted stock units and other stock-based awards. The number of shares initially reserved for issuance under the 2015 Plan is the sum of (i) 2,200,000 shares of common stock and (ii) the number of shares subject to awards outstanding under the 2012 Plan that expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by the Company on or after the effective date of the 2015 Plan. In addition, the number of shares of common stock that may be issued under the 2015 Plan is subject to increase on the first day of each calendar year, beginning in 2016 and ending in 2025, equal to the lesser of (i) 4% of the number of shares of the Company's common stock outstanding on the last day of the preceding applicable calendar year and (ii) an amount determined by the Company's board of directors. As of December 31, 2015, there were 1,101,500 shares available for future grant under the 2015 Plan.

2015 Employee Stock Purchase Plan

On June 16, 2015, the Company's stockholders approved the 2015 Employee Stock Purchase Plan (the "ESPP"), which became effective on June 25, 2015. A total of 365,000 shares of common stock were reserved for issuance under the ESPP. In addition, the number of shares of common stock that may be issued under the ESPP will automatically increase on the first day of each calendar year, beginning in 2016 and ending in 2025, by an amount equal to the least of (i) 400,000 shares, (ii) 1% of the number of shares of the Company's common stock outstanding on the last day of the applicable preceding calendar year and (iii) an amount determined by the Company's board of directors. Offering periods under the ESPP will commence when determined by the plan administrator.

Stock Option Valuation

The assumptions that the Company used to determine the fair value of the stock options granted to employees and directors were as follows, presented on a weighted average basis:

	Year Ended December 31,		
	2015	2014	2013
Risk-free interest rate	1.80%	1.83%	1.27%
Expected term (in years)	6.0	6.0	6.0
Expected volatility	81.4%	83.5%	85.9%
Expected dividend yield	0%	0%	0%

Stock Options

The following table summarizes the Company's stock option activity for the twelve months ended December 31, 2015:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2014	3,579,342	$ 1.38	9.21	$ 59,498
Granted	1,750,124	20.44		
Exercised	(232,970)	0.40		
Forfeited	(70,250)	5.04		
Outstanding as of December 31, 2015	5,026,246	$ 8.01	8.70	$ 136,945
Options vested and expected to vest as of December 31, 2015	5,026,246	$ 8.01	8.70	$ 136,945
Options exercisable as of December 31, 2015	1,643,955	$ 1.33	8.13	$ 55,507

The weighted average grant-date fair value of stock options granted during the years ended December 31, 2015, 2014 and 2013 was $14.56, $4.25 and $0.35 per share, respectively. The total intrinsic value of stock options exercised during the year ended December 31, 2015 was $4,125.

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock.

During the year ended December 31, 2015, the Company granted performance-based stock options to employees for the purchase of an aggregate of 30,000 shares of common stock with a grant date fair value of $12.89 per share. During the year ended December 31, 2014, the Company granted performance-based stock options to employees for the purchase of an aggregate of 60,000 shares of common stock with a grant date fair value of $3.92 per share. These stock options are exercisable only upon achievement of specified performance targets in each option agreement. As of the years ended December 31, 2015 and 2014, none of these options were exercisable because none of the specified performance targets had been achieved. Because achievement of the specified

performance targets was not deemed probable as of the years ended December 31, 2015 and 2014, the Company did not record any expense for these stock options from date of issuance through December 31, 2015.

As of December 31, 2015 and 2014, there were outstanding unvested service-based stock options held by non-employees for the purchase of 27,750 and 69,688 shares, respectively, of common stock.

Restricted Common Stock

The Company has granted restricted common stock with time-based vesting conditions. Unvested shares of restricted common stock may not be sold or transferred by the holder. These restrictions lapse according to the time-based vesting conditions of each award. The table below summarizes the Company's restricted stock activity for the twelve months ended December 31, 2015:

	Number of Shares	Weighted Average Grant Date Fair Value
Unvested restricted common stock as of December 31, 2014	52,500	$ 0.001
Vested	(52,500)	$ 0.001
Unvested restricted common stock as of December 31, 2015	—	$ 0.001

During the year ended December 31, 2013, the Company reacquired, at their original issuance price, 735,000 shares of restricted common stock that were forfeited by former employees.

The aggregate intrinsic value of restricted stock awards that vested during the years ended December 31, 2015, 2014 and 2013 was $1,508, $684 and $185, respectively.

Stock-based Compensation

The Company recorded stock-based compensation expense related to stock options and restricted common stock in the following expense categories of its consolidated statements of operations and comprehensive loss:

	Year Ended December 31,		
	2015	2014	2013
Research and development expenses	$ 5,297	$ 1,068	$ 177
General and administrative expenses	4,397	1,000	32
	$ 9,694	$ 2,068	$ 209

As of December 31, 2015, the Company had an aggregate of $32,665 of unrecognized stock- based compensation cost, which is expected to be recognized over a weighted average period of 3.1 years.

11. Net Loss per Share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows:

	Year Ended December 31,		
	2015	2014	2013
Numerator:			
Net loss	$ (54,780)	$ (16,709)	$ (6,102)
Accretion of convertible preferred stock to redemption value	-	(1,291)	(875)
Net loss attributable to common stockholders	$ (54,780)	$ (18,000)	$ (6,977)
Denominator:			
Weighted average common shares outstanding, basic and diluted	23,532,400	6,748,037	6,394,916
Net loss per share attributable to common stockholders, basic and diluted	$ (2.33)	$ (2.67)	$ (1.09)

The Company's potential dilutive securities, which include stock options, unvested restricted common stock, convertible preferred stock and warrants to purchase convertible preferred stock or common stock, have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the calculation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	Year Ended December 31,		
	2015	2014	2013
Stock options to purchase common stock	5,026,246	3,579,342	1,261,836
Unvested restricted common stock	—	52,500	198,750
Warrants for the purchase of convertible preferred stock	—	92,127	92,127
Warrants for the purchase of common stock	—	738,635	—
Convertible preferred stock (as converted to common stock)	—	21,478,098	10,478,189
	5,026,246	25,940,702	12,030,902

12. Commitments and Contingencies

Leases

The Company leases office and laboratory space under an operating lease agreement. The lease expires in January 2018 with no extension periods. The Company does have a right of expansion over the term as additional space becomes available but not an obligation.

On February 13, 2015, the Company entered into a sublease for office space with a term expiring in May 2016.

On April 1, 2015, the Company entered into a lease for additional office and laboratory space with a term expiring in April 2020.

During the years ended December 31, 2015, 2014 and 2013, the Company recognized $1,246, $543 and $152 respectively, of rental expense related to office and laboratory space.

On November 11, 2015, the Company entered into a non-cancelable property lease with BMR-Sidney Research Campus LLC ("BMR") for 83,396 square feet of office, laboratory and pilot manufacturing space at 200 Sidney Street, Cambridge, Massachusetts. The lease term is expected to commence in March 2016 and end in November 2023. The Company has the option to extend the lease twice, each for a five-year period. The Company intends to move its corporate headquarters to this location in mid-2016. BMR will

contribute a total of $12,509 toward the cost of tenant improvements. BMR's contributions toward the cost of tenant improvements will be recorded as a lease incentive obligation on our consolidated balance sheet. The lease incentive obligation will be amortized to our consolidated statement of operations as reductions to rent expense over the lease term. As of December 31, 2015, we have recorded a lease incentive obligation of $586.

Future minimum lease payments for these operating leases as of December 31, 2015 are as follows:

Year Ending December 31,		
2016	$	1,274
2017		1,162
2018		643
2019		478
2020		80
2021 and thereafter		-
Total	$	3,637

Lease Commitments

Minimum lease payments due under the Sidney Street lease are $911 during the year ending December 31, 2016, $5,528 during the year ending December 31, 2017, $5,694 during the year ending December 31, 2018, $5,864 during the year ending December 31, 2019, $6,040 during the year ending December 31, 2020 and $17,752 thereafter. These amounts are not included within the future minimum lease payments table above as our lease with BMR had not commenced as of December 31, 2015.

Indemnification Agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to vendors, lessors, business partners and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with members of its board of directors and its officers that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. The Company does not believe that the outcome of any claims under indemnification arrangements will have a material effect on its financial position, results of operations or cash flows, and it has not accrued any liabilities related to such obligations in its consolidated financial statements as of December 31, 2015 or 2014.

13. Income Taxes

During the years ended December 31, 2015, 2014 and 2013, the Company recorded no income tax benefits for the net operating losses incurred in each year or interim period, due to its uncertainty of realizing a benefit from those items.

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,		
	2015	2014	2013
Federal statutory income tax rate	(34.0)%	(34.0)%	(34.0)%
Research and development tax credits	(5.7)	(3.8)	(6.1)
State taxes, net of federal benefit	(5.3)	(5.3)	(5.3)
Stock-based compensation	4.1	2.3	1.2
Revaluation of preferred stock warrant liability	—	3.3	—
Other	0.3	0.2	—
Change in deferred tax asset valuation allowance	40.6	37.3	44.2
Effective income tax rate	—%	—%	—%

Net deferred tax assets as of December 31, 2015 and 2014 consisted of the following:

	December 31,	
	2015	2014
Deferred tax assets:		
Net operating loss carryforwards	$ 25,293	$ 7,946
Research and development tax credit carryforwards	4,180	1,055
Capitalized organization costs	527	571
Stock-based compensation expense	1,897	436
Charitable Contributions	5	—
Accrued expenses	977	447
Capitalized research and development expenses	126	136
Total deferred tax assets	$ 33,005	10,591
Deferred tax liabilities:		
Depreciation and amortization	(228)	(69)
Total deferred tax liabilities	(228)	(69)
Valuation allowance	$ (32,777)	(10,522)
Net deferred tax assets	$ —	$ —

As of December 31, 2015, the Company had net operating loss carryforwards for federal and state income tax purposes of $65,401 and $64,266, respectively, which both begin to expire in 2031. As of December 31, 2015, the Company also had available research and development tax credit carryforwards for federal and state income tax purposes of $3,045 and $1,331, respectively, which begin to expire in 2031 and 2027, respectively. Utilization of the net operating loss carryforwards and research and development tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986 due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain shareholders or public groups in the stock of a corporation by more than 50% over a three-year period. Since our formation, we have raised capital through the issuance of capital stock on several occasions. These financings, combined with the purchasing shareholders' subsequent disposition of those shares, may have resulted in a change of control as defined by Section 382 or could result in a change of control in the future upon subsequent disposition. We conducted an analysis under Section 382 to determine if historical changes in ownership through August 31, 2015 would limit or otherwise restrict our ability to utilize these NOL and R&D credit carryforwards. As a result of this analysis, we do not believe there are any significant limitations on our ability to utilize these carryforwards. However, future changes in ownership after August 31, 2015 could affect the limitation in future years. Any limitation may result in expiration of a portion of the NOL or R&D credit carryforwards before utilization. At December 31, 2015, $856 of the federal net operating loss carryforwards, and $856 of the state net operating loss carryforwards relate to excess stock based compensation tax benefits for which the benefit will be recorded to additional paid-in capital when recognized.

The Company has evaluated the positive and negative evidence bearing upon its ability to realize the deferred tax assets. Management has considered the Company's history of cumulative net losses incurred since inception and its lack of

commercialization of any products or generation of any revenue from product sales since inception and has concluded that it is more likely than not that the Company will not realize the benefits of the deferred tax assets. Accordingly, a full valuation allowance has been established against the deferred tax assets as of December 31, 2015 and 2014. Management reevaluates the positive and negative evidence at each reporting period.

Changes in the valuation allowance for deferred tax assets during the years ended December 31, 2015, 2014 and 2013 related primarily to the increases in net operating loss carryforwards, research and development tax credit carryforwards and stock-based compensation were as follows:

	Year Ended December 31,		
	2015	2014	2013
Valuation allowance at beginning of year	$ (10,522)	$ (4,294)	$ (1,599)
Decreases recorded as benefit to income tax provision	—	—	—
Increases recorded to income tax provision	(22,255)	(6,228)	(2,695)
Valuation allowance as of end of year	$ (32,777)	$ (10,522)	$ (4,294)

14. Selected Quarterly Financial Data (Unaudited)

The following table contains quarterly financial information for 2015 and 2014. The Company believes that the following information reflects all normal recurring adjustments necessary for a fair statement of the information for the periods presented. The operating results for any quarter are not necessarily indicative of results for any future period.

	2015				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Total operating expenses	$ 8,167	$ 12,340	$ 14,561	$ 19,788	$ 54,856
Loss from operations	(8,167)	(12,340)	(14,561)	(19,788)	(54,856)
Net loss	(7,971)	(12,555)	(14,620)	(19,634)	(54,780)
Net loss per share applicable to common stockholders - basic and diluted	$ (1.15)	$ (1.45)	$ (0.38)	$ (0.50)	$ (2.33)

	2014				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Total operating expenses	$ 1,672	$ 2,618	$ 3,579	$ 7,213	$ 15,082
Loss from operations	(1,672)	(2,618)	(3,579)	(7,213)	(15,082)
Net loss	(1,689)	(2,677)	(4,161)	(8,182)	(16,709)
Net loss per share applicable to common stockholders - basic and diluted	$ (0.29)	$ (0.45)	$ (0.68)	$ (1.24)	$ (2.67)

15. Related Party Transactions

In October 2010, the Company entered into a services agreement with Flagship Ventures Management, Inc., an affiliate of one of its stockholders, Flagship Venture Funds, to provide general and administrative services to the Company, including the employer portions of employee health and dental benefit plans for Seres Therapeutics employees and consulting services. The Company made payments under the agreement of $502, $454 and $391 during the years ended December 31, 2015, 2014 and 2013, respectively. There were no amounts due to Flagship Ventures Management, Inc. related to the services agreement as of December 31, 2015 and 2014.

16. 401(k) Savings Plan

The Company has a defined contribution savings plan under Section 401(k) of the Internal Revenue Code. This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. Company contributions to the plan may be made at the discretion of the Company's board of directors. The Company has not made any contributions to date under the 401(k) Savings Plan as of December 31, 2015.

17. Subsequent Events

In January 2016 the Company entered into a Collaboration and License Agreement (the "License Agreement") with Nestec Ltd. ("NHS") for the development and commercialization of certain of the Company's product candidates in development for the treatment and management of CDI and IBD, including ulcerative colitis and Crohn's disease. NHS is a related party to the Company since an affiliate of NHS is one of the Company's stockholders.

The License Agreement will support the development of the Company's portfolio of products for CDI and IBD in markets outside of the United States and Canada (the "Licensed Territory") and is expected to provide financial support for the Company's ongoing research and development. The Company has retained full commercial rights to the Company's entire portfolio of product candidates with respect to the United States and Canada.

Under the License Agreement, the Company granted to NHS (i) an exclusive, royalty-bearing license to develop and commercialize, in the Licensed Territory, certain products based on the Company's microbiome technology that are being developed for the treatment of CDI and IBD, including SER-109, SER-262, SER-287 and SER-301 (collectively, the "NHS Collaboration Products") and (ii) a non-exclusive license to develop, make and export NHS Collaboration Products worldwide solely for the commercialization in the Licensed Territory.

In exchange for the license, NHS is obligated to pay the Company an upfront cash payment of $120,000, which the Company received in February 2016. NHS has also agreed to pay the Company tiered royalties, at percentages ranging from the high single digits to high teens, of net sales of NHS Collaboration Products in the Licensed Territory. Additionally, NHS has agreed to pay the Company up to $660,000 for the achievement of certain development and regulatory milestones and up to an aggregate of $1,125,000 for the achievement of certain commercial milestones related to the sales of NHS Collaboration Products.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SERES THERAPEUTICS, INC.

Date: March 14, 2016

By: /s/ Roger J. Pomerantz
Roger J. Pomerantz
President, Chief Executive Officer and Chairman of the Board

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Roger J. Pomerantz Roger J. Pomerantz, M.D.	President, Chief Executive Officer and Chairman of the Board (principal executive officer)	March 14, 2016
/s/ Eric D. Shaff Eric D. Shaff	Chief Financial Officer and Executive Vice President (principal financial and accounting officer)	March 14, 2016
/s/ Noubar B. Afeyan Noubar B. Afeyan, Ph.D.	Director	March 14, 2016
/s/ Dennis Ausiello Dennis Ausiello, M.D.	Director	March 14, 2016
/s/ Grégory Behar Grégory Behar	Director	March 14, 2016
/s/ Werner Cautreels Werner Cautreels, Ph.D.	Director	March 14, 2016
/s/ Kurt C. Graves Kurt C. Graves	Director	March 14, 2016
/s/ Peter Barton Hutt Peter Barton Hutt	Director	March 14, 2016
/s/ Richard N. Kender Richard N. Kender	Director	March 14, 2016
/s/ Lorence H. Kim Lorence H. Kim, M.D.	Director	March 14, 2016

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Restated Certificate of Incorporation, filed on July 1, 2015	8-K	001-37465	3.1	7/1/15	
3.2	Amended and Restated By-Laws	8-K	001-37465	3.2	7/1/15	
4.1	Amended and Restated Investors' Rights Agreement, dated December 19, 2014, by and among the Registrant and each of the investors listed on Schedule A thereto	S-1	333-204484	4.1	5/27/15	
4.2	Specimen Stock Certificate evidencing the shares of common stock	S-1	333-204484	4.2	6/16/15	
10.1#	2015 Incentive Award Plan and forms of award agreements thereunder	S-1/A	333-204484	10.2	6/16/15	
10.2#	2015 Employee Stock Purchase Plan	S-1/A	333-204484	10.3	6/16/15	
10.3#	Non-Employee Director Compensation Program	S-1/A	333-204484	10.4	6/16/15	
10.4	Lease Agreement, dated April 1, 2015, by and between the Registrant and ARE-MA Region No. 38, LLC	S-1	333-204484	10.13	5/27/15	
10.5#	Employment Agreement, dated June 14, 2015, by and between the Registrant and Roger J. Pomerantz	S-1	333-204484	10.6	6/16/15	
10.6#	Employment Agreement, dated June 14, 2015, by and between the Registrant and Eric D. Shaff	S-1	333-204484	10.7	6/16/15	
10.7#	Amendment to Employment Agreement, dated August 7, 2015 by and between the Registrant and Eric. D. Shaff	10-Q	001-37456	10.7	8/10/15	
10.8#	Employment Agreement, dated June 13, 2015, by and between the Registrant and David N. Cook	S-1	333-204484	10.8	6/16/15	
10.9#	Amendment to Employment Agreement, dated June 13, 2015 by and between the Registrant and David N. Cook	10-Q	001-37456	10.9	8/10/15	
10.10#	Employment Agreement, dated 10, 2015, by and between the Registrant and John G. Aunins	10-Q	001-37456	10.10	8/10/15	
10.11#	Employment Agreement, dated June 13, 2015, by and between the Registrant and Michele Trucksis	S-1	333-204484	10.10	6/16/15	
10.12#	Amendment to Employment Agreement, dated August 7, 2015 by and between the Registrant and Michele Trucksis	10-Q	001-37456	10.12	8/10/15	
10.13	Lease, dated November 11, 2015, by and between the Registrant and BMR-Sidney Research Campus, LLC					*
21.1	Subsidiaries of Seres Therapeutics, Inc.	S-1/A	333-204484	21.1	6/16/15	
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm					*
31.1	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer					*
31.2	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer					*

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
32.1	Section 1350 Certification of Chief Executive Officer					**
32.2	Section 1350 Certification of Chief Financial Officer					**
101.INS	XBRL Instance Document					*
101.SCH	XBRL Taxonomy Extension Schema Document					*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					*
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					*

* Filed herewith.

** Furnished herewith.

# Indicates management contract or compensatory plan.

Exhibit 10.13

LEASE

by and between

BMR-SIDNEY RESEARCH CAMPUS LLC,
a Delaware limited liability company

and

SERES THERAPEUTICS, INC.,
a Delaware corporation

Table of Contents

LEASE

THIS LEASE (this "Lease") is entered into as of this 11th day of November, 2015 (the "Execution Date"), by and between BMR-Sidney Research Campus LLC (f/k/a BMR-200 Sidney Street LLC), a Delaware limited liability company ("Landlord"), and Seres Therapeutics, Inc., a Delaware corporation ("Tenant").

RECITALS

A. WHEREAS, Landlord owns certain real property (the "Property") and the improvements on the Property located at 200 Sidney Street, Cambridge, Massachusetts, including the building located thereon (the "Building"); and

B. WHEREAS, Landlord wishes to lease to Tenant, and Tenant desires to lease from Landlord, certain premises (the "Premises") located in the basement and on the first (1st), second (2nd) and fourth (4th) floors of the Building, pursuant to the terms and conditions of this Lease, as detailed below.

AGREEMENT

NOW, THEREFORE, Landlord and Tenant, in consideration of the mutual promises contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, agree as follows:

1. Lease of Premises.

1.1. Effective on the Term Commencement Date (as defined below), Landlord hereby leases to Tenant, and Tenant hereby leases from Landlord, the Premises, as shown on Exhibit A attached hereto, including exclusive shafts, cable runs, mechanical spaces and rooftop areas, for use by Tenant in accordance with the Permitted Use (as defined below) and no other uses (except that the Control Areas and Rooftop Installation Area (both as hereinafter defined) that are depicted on Exhibit A are explicitly not part of the Premises demised under this Lease). The Property and all landscaping, parking facilities, private drives and other improvements and appurtenances related thereto, including the Building and the parking garage located at 47 Erie Street in Cambridge, Massachusetts (to the extent of Landlord's interest therein) (the "Parking Garage"), are hereinafter collectively referred to as the "Project." All portions of the Project that are for the non-exclusive use of the tenants of the Building, such as service corridors, stairways, elevators, public restrooms, public lobbies, driveways, sidewalks, parking areas, the Parking Garage, and landscaped areas, are hereinafter referred to as "Common Area."

2. Basic Lease Provisions. For convenience of the parties, certain basic provisions of this Lease are set forth herein. The provisions set forth herein are subject to the remaining terms and conditions of this Lease and are to be interpreted in light of such remaining terms and conditions.

2.1. This Lease shall take effect upon the Execution Date and, except as specifically otherwise provided within this Lease, each of the provisions hereof shall be binding upon and inure to the benefit of Landlord and Tenant from the date of execution and delivery hereof by all parties hereto.

2.2. In the definitions below, each current Rentable Area (as defined below) is expressed in square feet. Rentable Area and "Tenant's Pro Rata Share" are all subject to adjustment as provided in this Lease.

Definition or Provision	**Means the Following (As of the Term Commencement Date)**
Approximate Rentable Area of Premises	83,396 square feet, as follows: (a) 14,958 square feet in the basement of the Building (the "Basement Premises"); (b) 42,267 square feet on the first floor of the Building (the "First Floor Premises"), which includes (i) 9,310 square feet of pilot manufacturing area more specifically identified on Exhibit A (the "Manufacturing Area"), (ii) 1,890 square feet consisting of a vivarium area as more specifically identified on Exhibit A (the "Vivarium") and (iii) 1,934 square feet consisting of a quality control lab as more specifically identified on Exhibit A (the "Quality Control Lab"); (c) 15,768 square feet on the second floor of the Building (the "Second Floor Premises"); and (d) 10,403 square feet on the fourth floor of the Building (the "Fourth Floor Premises").
Approximate Rentable Area of Building	188,614 square feet
Tenant's Pro Rata Share of Building	44.22%

2.3. Monthly and annual installments of Base Rent for the Premises ("Base Rent") as of the Rent Commencement Date (as defined below), subject to adjustment under this Lease:

Dates	Square Feet of Rentable Area	Base Rent per Square Foot of Rentable Area	Monthly Base Rent	Annual Base Rent
Rent Commencement Date – The day prior to first (1st) anniversary of Rent Commencement Date	83,396	$66.15 annually	$459,720.45	$5,516,645.40

2.4. Estimated Term Commencement Date: March 24, 2016

2.5. Estimated Term Expiration Date: November 6, 2023

2.6. Security Deposit: $1,400,000.00, subject to adjustment in accordance with Article 11 hereof.

2.7. Permitted Use: Office and laboratory use, in conformity with all federal, state, municipal and local laws, codes, ordinances, rules and regulations of Governmental Authorities (as defined below), committees, associations, or other regulatory committees, agencies or governing bodies having jurisdiction over the Premises, the Building, the Property, the Project, Landlord or Tenant, including both statutory and common law and hazardous waste rules and regulations ("Applicable Laws"). Tenant acknowledges and agrees that, notwithstanding anything in this Lease to the contrary, pursuant to Applicable Laws, the portion of the Premises located in the basement of the Building is not permitted to be occupied by human beings and may only be used for storage purposes or other uses that are included within the Permitted Use that do not involve or require occupancy by human beings. For avoidance of doubt, to the extent permitted by Applicable Laws, the use of a portion of the Premises as a vivarium and a pilot manufacturing facility is permitted under this Lease.

2.8. Address for Rent Payment:

BMR-Sidney Research Campus LLC
Attention Entity 652
P.O. Box 511415
Los Angeles, California 90051-7970

2.9. Address for Notices to Landlord:

BMR-Sidney Research Campus LLC
17190 Bernardo Center Drive
San Diego, California 92128
Attn: Real Estate Legal Department

2.10. Address for Notices to Tenant:

Seres Therapeutics, Inc.
200 Sidney Street
Cambridge, MA 02139
ATTN: Chief Financial Officer

2.11. Address for Invoices to Tenant:

Seres Therapeutics, Inc.
200 Sidney Street
Cambridge, MA 02139
ATTN: Chief Financial Officer

2.12. The following Exhibits are attached hereto and incorporated herein by reference:

Exhibit A	Premises
Exhibit A-1	Lab and Office Zones
Exhibit A-2	Phasing Plan
Exhibit B	Work Letter
Exhibit B-1-a	Tenant Improvement Plans for Lab/Office Improvements
Exhibit B-1-b	Basis of Design and User/Design Requirements Specifications for Manufacturing Area Improvements (the "URS")
Exhibit B-1-c	Draft Manufacturing Area Schematic Plans
Exhibit B-2	Landlord's Work
Exhibit B-3-a	Budget for Lab/Office Improvements
Exhibit B-3-b	Budget for Manufacturing Area Improvements
Exhibit B-4-a	Phase 1 Schedule
Exhibit B-4-b	Phase 2 Schedule
Exhibit B-5	Tenant Work Insurance Requirements
Exhibit C-1	Acknowledgement of Term Commencement Date
Exhibit C-2	Acknowledgement of Phase 1B Substantial Completion Date
Exhibit C-3	Acknowledgement of Phase 2 Substantial Completion Date and Term Expiration Date
Exhibit D	Landlord/Tenant Responsibilities Matrix
Exhibit E	Form of Letter of Credit
Exhibit F	Intentionally omitted
Exhibit G	Rules and Regulations
Exhibit H	PTDM
Exhibit I	Tenant's Personal Property
Exhibit J	Form of Estoppel Certificate
Exhibit K	Surrender Condition of Manufacturing Area

3. Term. The actual term of this Lease (as the same may be extended pursuant to Article 42 hereof, and as the same may be earlier terminated in accordance with this Lease, the "Term") shall commence on the actual Term Commencement Date (as defined in Article 4) and end on the date (the "Term Expiration Date") that is seven (7) years after the Rent Commencement Date, subject to extension or earlier termination of this Lease as provided herein.

4. Possession and Commencement Date.

4.1. As used in this Lease, the following terms have the following definitions:

(i) "Phase 1A Improvements": Those improvements to be constructed by Landlord in the Fourth Floor Premises and identified on the Phasing Plan as "Phase 1A" (referred to herein as the "Phase 1A Premises" or the "Fourth Floor Premises"), as more particularly described in the

Work Letter attached hereto as Exhibit B (the "Work Letter") and depicted on the plans attached hereto as Exhibit B-1-a and applicable to the Fourth Floor Premises.

(ii) "Phase 1B Improvements": Those improvements to be constructed by Landlord in the Second Floor Premises and in a portion of the First Floor Premises and identified on the Phasing Plan as "Phase 1B" (collectively, the "Phase 1B Premises"), as more particularly described in the Work Letter and depicted on the plans attached hereto as Exhibit B-1-a and applicable to the Phase 1B Premises.

(iii) "Phase 2 Improvements": Those improvements to be constructed by Landlord in the portion of the First Floor Premises and identified on the Phasing Plan as "Phase 2" (the "Phase 2 Premises"), as more particularly described in the Work Letter and depicted on (A) the plans attached hereto as Exhibit B-1-a that are applicable to the Phase 2 Premises (excluding the Manufacturing Area), (B) the Basis of Design and URS attached hereto as Exhibit B-1-b that are applicable to the Manufacturing Area and (C) the Draft Manufacturing Area Schematic Plans attached hereto as Exhibit B-1-c.

(iv) "Phasing Plan": The plan attached to this Lease as Exhibit A-2.

4.2. Landlord shall use commercially reasonable efforts to deliver possession of the Fourth Floor Premises to Tenant on the Estimated Term Commencement Date, with the Phase 1A Improvements and the work in the Common Areas described in Exhibit B-2 (the "Landlord's Work") Substantially Complete (as defined below), except as noted on Exhibit B-2. Landlord shall use commercially reasonable efforts to deliver possession of the Phase 1B Premises to Tenant on April 28, 2016 (the "Estimated Phase 1B Delivery Date"), with the Phase 1B Improvements Substantially Complete (as defined below). Landlord shall use commercially reasonable efforts to deliver possession of the Phase 2 Premises to Tenant on July 7, 2016 (the "Estimated Phase 2 Delivery Date", as the same may be extended in accordance with this Article 4 and the Work Letter), with the Phase 2 Premises Substantially Complete. As used in this Lease, the Phase 1A Improvements the Phase 1B Improvements and the Phase 2 Improvements are collectively referred to as the "Tenant Improvements").

(a) If Landlord has failed to Substantially Complete the Phase 1A Improvements and the Phase 1B Improvements on or prior to the date that is ninety (90) days after the Estimated Phase 1B Delivery Date, then Tenant shall be entitled to one (1) day of abatement of Base Rent pro rated for the Fourth Floor Premises and the Phase 1B Premises (based on the Rentable Area of the Fourth Floor Premises and the Phase 1B Premises multiplied by the Base Rent Per Square Foot of Rentable Area described in Section 2.3 of this Lease) for every day after the Estimated Phase 1B Delivery Date (as it may be extended as provided herein) that Substantial Completion of Phase 1A Improvements and Phase 1B Improvements has not occurred; provided, however, that the Estimated Phase 1A Delivery Date and the Estimated Phase 1B Delivery Date shall each be subject to extension on a day-for-day basis as a result of Force Majeure and Landlord shall not incur any liability under this Section 4.2(a) for any delay caused by any action or inaction of Tenant or its contractors, agents or employees. Any such Base Rent abatement shall be credited against the Base Rent due from Tenant following the Rent Commencement Date (as hereinafter defined); and further provided if that if Landlord has Substantially Completed the Phase 1A Improvements by the Estimated Phase 1B Delivery Date, but has not yet Substantially Completed the Phase 1B Improvements by the Estimated Phase 1B Delivery Date, then the foregoing Base Rent abatement provided in this Section 4.2(a) shall be applicable only to the Phase 1B Premises and not the Fourth Floor Premises.

(b) If Landlord has failed to Substantially Complete the Phase 2 Improvements on or prior to the date that is ninety (90) days after the Estimated Phase 2 Delivery Date (as the same may be extended by Force Majeure), then Tenant shall be entitled to one (1) day of abatement of Base Rent pro rated for the Phase 2

Premises (based on the Rentable Area of the Phase 2 Premises multiplied by the Base Rent Per Square Foot of Rentable Area described in Section 2.3 of this Lease) for every day past the Estimated Phase 2 Delivery Date that Substantial Completion of the Phase 2 Improvements has not occurred; provided, however, that Landlord shall have no liability under this Section 4.2(b) for any delay caused by any action or inaction of Tenant or its contractors, agents or employees. Any such Base Rent abatement shall be credited against the Base Rent due from Tenant following the Rent Commencement Date.

(c) If Landlord has failed to Substantially Complete the Phase 1A Improvements and the Phase 1B Improvements on or prior to the date that is one hundred twenty (120) days after the Estimated Phase 1B Delivery Date (the "Outside Phase 1 Completion Date"), then Tenant shall have the right to terminate this Lease by written notice to Landlord given no later than thirty (30) days following such date, at which time neither party shall have any further rights or obligations hereunder (except for those terms and provisions which expressly survive the expiration or sooner termination of this Lease); provided, however, that the Outside Phase 1 Completion Date shall be subject to extension on a day-for-day basis as a result of Force Majeure and Landlord shall not incur any liability under this Section 4.2(c) for any delay caused by any action or inaction of Tenant or its contractors, agents or employees; and further provided that any such termination notice shall be null and void and no longer of any force and effect if Landlord Substantially Completes the Phase 1A Improvements and the Phase 1B Improvements within fifteen (15) days after receipt of such termination notice.

(d) If Landlord has failed to Substantially Complete the Phase 2 Improvements on or prior to the date that is one hundred twenty (120) days after the Estimated Phase 2 Delivery Date (the "Outside Phase 2 Completion Date"), then Tenant shall have the right to terminate this Lease by written notice to Landlord given no later than thirty (30) days following such date, at which time neither party shall have any further rights or obligations hereunder (except for those terms and provisions which expressly survive the expiration or sooner termination of this Lease); provided, however, that the Outside Phase 2 Completion Date shall be subject to extension on a day-for-day basis as a result of Force Majeure and Landlord shall not incur any liability under this Section 4.2(d) for any delay caused by any action or inaction of Tenant or its contractors, agents or employees; and further provided that any such termination notice shall be null and void and no longer of any force and effect if Landlord Substantially Completes the Phase 2 Improvements within forty-five (45) days after receipt of such termination notice.

(e) Tenant agrees that in the event (i) the Phase 1A Improvements are not Substantially Complete on or before the Estimated Term Commencement Date or the Estimated Phase 1B Delivery Date for any reason or (ii) the Phase 1B Improvements are not Substantially Complete on or before the Estimated Phase 1B Delivery Date or (iii) the Phase 2 Improvements are not Substantially Complete on or before the Estimated Phase 2 Delivery Date, then (A) this Lease shall not be void or voidable, except as explicitly set forth above, (B) Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, (C) the Estimated Term Expiration Date shall be extended accordingly to the extent applicable and (D) Tenant shall not be responsible for the payment of any Base Rent with respect to any portion of the Premises which is not Substantially Complete until the Substantial Completion of the Phase 1A Improvements, the Phase 1B Improvements or the Phase 2 Improvements, as the case may be, and as described in Section 4.2, occurs. The term "Substantially Complete" or "Substantial Completion" means that (x) the Phase 1A Improvements, the Phase 1B Improvements, the Phase 2 Improvements or Landlord's Work, as the case may be, are substantially complete in accordance with the Approved Lab/Office Plans or Approved Manufacturing Area Plans, as applicable (as both terms are defined in the Work Letter), as reasonably determined by Landlord's architect, except for minor punch list items and (y) with respect to Landlord's Work, Landlord's Work is substantially complete, as reasonably determined by Landlord's architect, except for minor punch list items, and (z) Tenant is able to obtain a certificate of occupancy or a temporary certificate of occupancy for the Fourth Floor Premises, the Phase 1B Premises or the Phase 2 Premises, as the case may be (excluding the portion of the Premises located

in the basement of the Building). Notwithstanding anything in this Lease (including the Work Letter) to the contrary, Landlord's obligation to timely achieve Substantial Completion shall be subject to extension on a day-for-day basis as a result of Force Majeure (as defined below) or any delay caused by any action or inaction of Tenant or its contractors, agents or employees.

(f) Landlord shall provide to Tenant such access cards as are necessary for Tenant's employees to access the Premises, Building, Project, and if applicable restrooms and parking areas upon delivery of the applicable phase of the Premises to Tenant (or within a reasonable time after delivery, so long as Landlord otherwise provides Tenant with adequate access during such period).

4.3. The "Term Commencement Date" shall be the day Landlord first delivers possession of any phase of the Premises to Tenant with the Tenant Improvements applicable thereto Substantially Complete. If Substantial Completion of the Phase 1A Improvements, Substantial Completion of the Phase 1B Improvements or Substantial Completion of the Phase 2 Improvements is delayed by action of Tenant, then the Term Commencement Date, the date of Substantial Completion of the Phase 1B Improvements or the date of Substantial Completion of the Phase 2 Improvements shall be the date that the Term Commencement Date, Substantial Completion of the Phase 1B Improvements or Substantial Completion of the Phase 2 Improvements, as the case may be, would have occurred but for such delay. Tenant shall execute and deliver to Landlord (a) written acknowledgment of the actual Term Commencement Date within ten (10) days after Tenant takes occupancy of the first phase of the Premises delivered to Tenant, (b) written acknowledgement of the date that each subsequent phase of the Premises is delivered to Tenant Substantially Complete and (c) the Term Expiration Date within ten (10) days after Tenant takes occupancy of the Phase 2 Premises, and such other information as set forth in the forms attached as Exhibits C-1, C-2 and C-3 hereto, respectively. Failure to execute and deliver such acknowledgment, however, shall not affect the Term Commencement Date or Landlord's or Tenant's liability hereunder. Failure by Tenant to obtain validation by any medical review board or other similar governmental licensing of the Premises required for the Permitted Use by Tenant shall not serve to extend the Term Commencement Date.

4.4. Tenant shall have the option to gain early access to the Fourth Floor Premises and Phase 1B Premises thirty (30) days prior to the Term Commencement Date or Substantial Completion of the Phase 1B Premises, respectively, for the purpose of installing furniture and telephone and data cabling and otherwise to prepare the Premises for occupancy. Prior to such entry by Tenant, Tenant shall furnish to Landlord evidence satisfactory to Landlord in advance that insurance coverages required of Tenant under the provisions of Article 23 are in effect, and (a) such entry shall be subject to all the terms and conditions of this Lease, other than the payment of Base Rent (as defined below), and (b) such entry shall not interfere with the ability of Landlord and its contractors and subcontractors to achieve Substantial Completion of the Tenant Improvements and the Landlord's Work; and provided, further, that if the Term Commencement Date is delayed due to such early access, then the Term Commencement Date shall be the date that the Term Commencement Date would have occurred but for such delay.

4.5. Landlord shall cause the Tenant Improvements to be constructed in the Premises pursuant to the Work Letter at a cost to Landlord not to exceed (a) Four Million One Hundred Sixty-Nine Thousand Eight Hundred Dollars ($4,169,800.00) (based upon Fifty Dollars ($50.00) per square foot of Rentable Area (as defined below and subject to change based upon the Rentable Area of the Premises) (the "Base TI Allowance")) plus (b) an additional amount of Eight Million Three Hundred Thirty-Nine Thousand Six Hundred Dollars ($8,339,600.00) (based upon One Hundred Dollars ($100.00) per square foot of Rentable Area (as defined below and subject to change based upon the Rentable Area of the Premises) (the "Additional Amount", together with the Base TI Allowance, the "TI Allowance"), for a total of Twelve Million Five Hundred Nine Thousand Four Hundred Million Dollars ($12,509,400.00). Landlord shall complete the Landlord's Work at Landlord's expense.

4.6. The TI Allowance may be applied to the costs of (m) construction, (n) project management by Landlord (which fee shall equal $125,000), (o) space planning, architect, engineering and other related services performed by third parties unaffiliated with Tenant, (p) building permits and other taxes, fees, charges and levies by Governmental Authorities (as defined below) for permits or for inspections of the Tenant Improvements, and (q) costs and expenses for labor, material, equipment and fixtures. In no event shall the TI Allowance be used for (w) payments to Tenant or any affiliates of Tenant, (x) the purchase of any furniture, personal property or other non-building system equipment, (y) costs resulting from any default by Tenant of its obligations under this Lease or (z) costs that are recoverable by Tenant from a third party (e.g., insurers, warrantors, or tortfeasors).

4.7. Tenant shall have until nine (9) months after the Term Commencement Date (the "TI Deadline") to expend the unused portion of the TI Allowance, after which date Landlord's obligation to fund such costs shall expire.

4.8. In no event shall any unused TI Allowance entitle Tenant to a credit against Rent payable under this Lease.

4.9. Notwithstanding anything to the contrary in this Lease, Landlord and Tenant agree that all Tenant Improvements shall (a) be programmed in accordance with the lab and office zones identified on Exhibit A-1 attached hereto, and (b) incorporate flexible wall and lab bench systems.

5. Condition of Premises.

Landlord represents to Tenant that, on the date on which Landlord delivers the Premises (or the applicable portion thereof) to Tenant with the Tenant Improvements (or the applicable portion thereof) Substantially Complete, all base building systems within the Premises (or the applicable portion thereof), including the HVAC (as hereinafter defined), electrical, life safety and plumbing systems, shall be in good working order (provided that the sole remedy for any breach of the foregoing representation shall be that Landlord shall repair or remedy the violation of the foregoing representation at its sole cost, provided that Landlord may include the costs thereof in Operating Expenses to the extent that Landlord is permitted to do so under Article 9 below, and Tenant shall not be entitled to any monetary damages for any breach of such representation). Except as set forth in the immediately foregoing sentence, Tenant acknowledges that neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of the Premises, the Building or the Project, or with respect to the suitability of the Premises, the Building or the Project for the conduct of Tenant's business. Tenant acknowledges that (a) it is fully familiar with the condition of the Premises and agrees to take (i) the Fourth Floor Premises in its condition "as is" as of the Term Commencement Date, (ii) the Phase 1B Premises in its condition "as is" as of the Substantial Completion of the Phase 1B Improvements and (iii) the Phase 2 Premises in its condition "as is" as of the Substantial Completion of the Phase 2 Improvements and (b) Landlord shall have no obligation to alter, repair or otherwise prepare the Premises for Tenant's occupancy or to pay for or construct any improvements to the Premises, except with respect to the completion of the Landlord's Work and the Tenant Improvements and except with respect to the payment of the TI Allowance. Tenant's taking of possession of the Premises shall, except as otherwise agreed to in writing by Landlord and Tenant, conclusively establish that the Premises, the Building and the Project were at such time in good, sanitary and satisfactory condition and repair.

6. Rentable Area.

6.1. The term "Rentable Area" shall reflect such areas as reasonably calculated by Landlord's architect in a manner consistent with Landlord's determination of Rentable Area for the remainder of the Building and Project, as the same may be reasonably adjusted from time to time by Landlord in consultation with Landlord's

architect only to reflect a physical change to the outer walls, roof or basement of the Building or a physical change to the demising walls of the Premises.

6.2. The Rentable Area of the Building is generally determined by making separate calculations of Rentable Area applicable to each floor within the Building and totaling the Rentable Area of all floors within the Building. The Rentable Area of a floor is computed by measuring to the outside finished surface of the permanent outer Building walls. The full area calculated as previously set forth is included as Rentable Area, without deduction for columns and projections or vertical penetrations, including stairs, elevator shafts, flues, pipe shafts, vertical ducts and the like, as well as such items' enclosing walls.

6.3. The term "Rentable Area," when applied to the Premises, is that area equal to the usable area of the Premises, plus an equitable allocation of Rentable Area within the Building that is not then utilized or expected to be utilized as usable area, including that portion of the Building devoted to corridors, equipment rooms, restrooms, elevator lobby, atrium and mailroom.

6.4. Intentionally omitted.

6.5. Review of allocations of Rentable Areas as between tenants of the Building shall be made as frequently as Landlord deems appropriate, including in order to facilitate an equitable apportionment of Operating Expenses (as defined below), but in no event shall the Rentable Area of the Premises or the Building be subject to remeasurement except as otherwise provided in Section 6.1 hereof.

7. Rent.

7.1. Commencing on the Term Commencement Date, Tenant shall pay to Landlord Base Rent for the Fourth Floor Premises (based on the Rentable Area of the Fourth Floor Premises multiplied by the Base Rent Per Square Foot of Rentable Area described in Section 2.3 of this Lease). Commencing on the date that the Phase 1B Premises are Substantially Complete, Tenant shall pay to Landlord Base Rent for both the Fourth Floor Premises and the Phase 1B Premises (based on the Rentable Area of the Fourth Floor Premises and Phase 1B Premises multiplied by the Base Rent Per Square Foot of Rentable Area described in Section 2.3 of this Lease). Commencing on the date that the Phase 2 Improvements are Substantially Complete, Tenant's obligation to pay Base Rent for the entire Premises shall abate until the date that is four (4) months after the Substantial Completion of the Phase 2 Improvements (the "Rent Commencement Date"). Commencing on the Rent Commencement Date, Tenant shall pay to Landlord the sums set forth in Section 2.3, subject to the rental adjustments provided in Article 8 hereof. Base Rent shall be paid in equal monthly installments as set forth in Section 2.3, subject to the rental adjustments provided in Article 8 hereof, and except as otherwise set forth in the first two sentences of this Section 7.1, each in advance on the first day of each and every calendar month during the Term.

7.2. In addition to Base Rent, Tenant shall pay to Landlord as additional rent ("Additional Rent") at times hereinafter specified in this Lease (a) Tenant's Adjusted Share (as defined below) of Operating Expenses (as defined below), (b) the Property Management Fee (as defined below) and (c) any other amounts that Tenant assumes or agrees to pay under the provisions of this Lease that are owed to Landlord, including any and all other sums that may become due by reason of any default of Tenant or failure on Tenant's part to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after notice and the lapse of any applicable cure periods.

7.3. Base Rent and Additional Rent shall together be denominated "Rent." Rent shall be paid to Landlord, without abatement, deduction or offset, in lawful money of the United States of America to the address set forth in Section 2.8 or to such other person or at such other place as Landlord may from time

designate in writing. In the event the Term commences or ends on a day other than the first day of a calendar month, then the Rent for such fraction of a month shall be prorated for such period on the basis of the number of days in the month and shall be paid at the then-current rate for such fractional month.

7.4. Tenant's obligation to pay Rent shall not be discharged or otherwise affected by (a) any Applicable Laws now or hereafter applicable to the Premises, (b) any other restriction on Tenant's use, (c) except as expressly provided herein, any casualty or taking or (d) any other occurrence; and Tenant waives all rights now or hereafter existing to terminate or cancel this Lease or quit or surrender the Premises or any part thereof, or to assert any defense in the nature of constructive eviction to any action seeking to recover rent. Tenant's obligation to pay Rent with respect to any period or obligations arising, existing or pertaining to the period prior to the date of the expiration or earlier termination of the Term or this Lease shall survive any such expiration or earlier termination; provided, however, that nothing in this sentence shall in any way affect Tenant's obligations with respect to any other period.

8. Rent Adjustments. Base Rent shall be subject to an annual upward adjustment of three percent (3%) of the then-current Base Rent. The first such adjustment shall become effective commencing on the first (1st) annual anniversary of the Rent Commencement Date, and subsequent adjustments shall become effective on every successive annual anniversary for so long as this Lease continues in effect.

9. Operating Expenses.

9.1. As used herein, the term "Operating Expenses" shall include:

(a) Government impositions, including property tax costs consisting of real and personal property taxes (including amounts due under any improvement bond upon the Building or the Project (including the parcel or parcels of real property upon which the Building and areas serving the Building are located)) or assessments in lieu thereof imposed by any federal, state, regional, local or municipal governmental authority, agency or subdivision (each, a "Governmental Authority"); taxes on or measured by gross rentals received from the rental of space in the Project; taxes based on the square footage of the Premises, the Building or the Project, as well as any parking charges, utilities surcharges or any other costs levied, assessed or imposed by, or at the direction of, or resulting from Applicable Laws or interpretations thereof, promulgated by any Governmental Authority in connection with the use or occupancy of the Project or the parking facilities serving the Project, including without limitation the Parking Garage; taxes on this transaction or any document to which Tenant is a party creating or transferring an interest in the Premises; any fee for a business license to operate an office building; and any expenses, including the reasonable cost of attorneys or experts, reasonably incurred by Landlord in seeking reduction by the taxing authority of the applicable taxes, less tax refunds obtained as a result of an application for review thereof; and

(b) All other costs of any kind paid or incurred by Landlord in connection with the operation or maintenance of the Building and the Project, which shall include Project office rent at fair market rental for a commercially reasonable amount of space for Project management personnel, to the extent an office used for Project operations is maintained at the Project, plus customary expenses for such office, and costs of repairs and replacements to improvements within the Project as appropriate to maintain the Project as required hereunder, including costs of funding such reasonable reserves as Landlord, consistent with good business practice, may establish to provide for future repairs and replacements; costs of utilities furnished to the Common Area; costs associated with the operation of food trucks for the benefit of employees of tenants at the Project; sewer fees; cable television; trash collection; cleaning, including windows; heating, ventilation and air-conditioning ("HVAC"); maintenance of landscaping and grounds; snow removal; maintenance of drives and parking areas, including without limitation the Parking Garage; maintenance of the roof; security services and devices; building supplies; maintenance or replacement of equipment utilized for operation and maintenance of the

Project; license, permit and inspection fees; sales, use and excise taxes on goods and services purchased by Landlord in connection with the operation, maintenance or repair of the Building or Project systems and equipment; telephone, postage, stationery supplies and other expenses incurred in connection with the operation, maintenance or repair of the Project; accounting, legal and other professional fees and expenses incurred in connection with the Project; costs of furniture, draperies, carpeting, landscaping supplies, snow removal supplies and other customary and ordinary items of personal property provided by Landlord for use in Common Areas or in the Project office; capital expenditures but only to the extent permitted in Section 9.1(c) below; costs of complying with Applicable Laws (except to the extent such costs are incurred to remedy non-compliance as of the Execution Date with Applicable Laws); costs to keep the Project in compliance with, or fees otherwise required under, any CC&Rs (as defined below), including condominium fees; insurance premiums, including premiums for commercial general liability, property casualty, earthquake, terrorism and environmental coverages; portions of insured losses paid by Landlord as part of the deductible portion of a loss pursuant to the terms of insurance policies; service contracts; costs of services of independent contractors retained to do work of a nature referenced above; and costs of compensation (including employment taxes and fringe benefits) of all persons who perform regular and recurring duties connected with the day-to-day operation and maintenance of the Project, its equipment, the adjacent walks, landscaped areas, drives and parking areas, including janitors, floor waxers, window washers, watchmen, gardeners, sweepers, plow truck drivers, handymen, and engineering/maintenance personnel.

(c) Notwithstanding the foregoing, Operating Expenses shall not include any net income, franchise, capital stock, estate or inheritance taxes, or taxes that are the personal obligation of Tenant or of another tenant of the Project; any leasing commissions; expenses (including attorney fees and court costs) incurred in connection with (i) negotiations or disputes with tenants of the Property or other occupants or prospective tenants or other occupants, (ii) the enforcement of any leases or (iii) the defense of Landlord's title to, or interest in, the Building or any part thereof; costs (including permit, license, and inspection fees) incurred in connection with preparing rental space for a tenant, that relate to preparation of rental space for a tenant; expenses of initial development and construction, including grading, paving, landscaping and decorating (as distinguished from maintenance, repair and replacement of the foregoing); Landlord's costs of any services provided to tenants or other occupants for which Landlord is actually reimbursed by such tenants or other occupants (other than reimbursement through Operating Expenses) as an additional charge or rental over and above the basic rent (and escalations thereof) payable under the lease with such tenant or other occupant; costs in connection with services that are provided to another tenant or occupant of the Building, but are not offered to Tenant; capital expenditures, except for those incurred (A) in replacing obsolete equipment, (B) for the primary purpose of reducing Operating Expenses, or (C) required to comply with changes in Applicable Laws that take effect after the Execution Date of the Lease, in each case amortized over the useful life thereof (but in no event more than thirteen (13) years), as reasonably determined by Landlord; costs (i.e., interest and penalties) incurred due to Landlord's default of this Lease or any other lease, mortgage, or other agreement, in each case affecting the Building or Property; payments to subsidiaries or affiliates of Landlord, or to any other party, in each case as a result of a non-arm's length transaction, for management or other services for the Building, or for supplies or other materials for the Building, to the extent that such payments exceed arm's length competitive prices in the Cambridge, Massachusetts market for the services, supplies or materials provided; Landlord's legal existence and general corporate overhead and general administrative expenses; legal expenses relating to other tenants; costs of repairs to the extent reimbursed by payment of insurance proceeds received by Landlord; advertising and promotional expenditures directly related to Landlord's efforts to lease space in the Building; the cost of repairs or other work occasioned by fire, windstorm, or other insured casualty, to the extent Landlord actually receives proceeds of such insurance for such repairs or other work; debt service; interest upon loans to Landlord or secured by a mortgage or deed of trust covering the Project or a portion thereof or any other debt of Landlord (provided that interest upon a government assessment or improvement bond payable in installments shall constitute an Operating Expense under Subsection 9.1(a)); rental payments under any ground lease; the cost of

correcting defects in the construction of the Building, Building equipment, Parking Garage, parking lot or other site improvements, but only to the extent such costs are covered by and actually reimbursed to Landlord under any applicable warranty or service contract held by Landlord; costs incurred directly and solely as a result of Landlord's gross negligence or willful misconduct; salaries paid to Landlord's personnel above the level of Building manager who are not spending a majority of their time doing work related to the Building; legal and accounting fees not incurred in connection with operation and management of the Building, (including any legal and other costs incurred in connection with the sale, financing, refinancing, syndication, securitization, or change of ownership of the Building, including, without limitation, brokerage commissions, attorneys' and accountants' fees, closing costs, title insurance premiums, points, and interest charges) salaries of executive officers of Landlord; depreciation claimed by Landlord for tax purposes (provided that this exclusion of depreciation is not intended to delete from Operating Expenses actual costs of repairs and replacements and reasonable reserves in regard thereto that are provided for in Subsection 9.1(b)); taxes that are excluded from Operating Expenses by the last sentence of Subsection 9.1(a); costs or expenses incurred in connection with the financing or sale of the Project or any portion thereof; costs expressly excluded from Operating Expenses elsewhere in this Lease or that are charged to or paid by Tenant under other provisions of this Lease; professional fees and disbursements and other costs and expenses related to the ownership (as opposed to the use, occupancy, operation, maintenance or repair) of the Project; political and charitable contributions; any item that, if included in Operating Expenses, would involve a double collection for such item by Landlord, such as ordinary maintenance and repair costs for the Parking Garage which are included in the parking fee payable by Tenant in accordance with Section 13.4 hereof; and costs arising from Hazardous Materials at the Project in violation of Applicable Laws as of the Execution Date, unless placed at the Project by a Tenant Party. To the extent that Tenant uses more than Tenant's Pro Rata Share of any item of Operating Expenses, Tenant shall pay Landlord for such excess in addition to Tenant's obligation to pay Tenant's Pro Rata Share of Operating Expenses (such excess, together with Tenant's Pro Rata Share, "Tenant's Adjusted Share").

9.2. Tenant shall pay to Landlord on the first day of each calendar month of the Term, as Additional Rent, (a) one-twelfth (1/12th) of the Property Management Fee (as defined below) and (b) Landlord's estimate of Tenant's Adjusted Share of Operating Expenses with respect to the Building and the Project, as applicable, for such month. Notwithstanding the immediately foregoing sentence, for the period between the Term Commencement Date and the Rent Commencement Date, Tenant shall only be required to pay the Property Management Fee and Tenant's Adjusted Share of Operating Expenses with respect to the Fourth Floor Premises and Phase 1B Premises (and not the Phase 2 Premises), and the Property Management Fee and Tenant's Adjusted Share of Operating Expenses shall be adjusted proportionately.

(x) The "Property Management Fee" shall equal three percent (3%) of Base Rent due from Tenant. Tenant shall pay the Property Management Fee in accordance with Section 9.2 with respect to the entire Term, including any extensions thereof or any holdover periods, regardless of whether Tenant is obligated to pay Base Rent, Operating Expenses or any other Rent with respect to any such period or portion thereof. For the period of time between the Term Commencement Date and Rent Commencement Date, if any, and any period of occupancy prior to the Term as further described in Section 9.5, the Property Management Fee shall be calculated as if Tenant were paying $459,720.45 per month for Base Rent.

(y) Within ninety (90) days after the conclusion of each calendar year (or such longer period as may be reasonably required by Landlord), Landlord shall furnish to Tenant a statement showing in reasonable detail the actual Operating Expenses, Tenant's Adjusted Share of Operating Expenses, and the cost of providing utilities to the Premises for the previous calendar year ("Landlord's Statement"). Any additional sum due from Tenant to Landlord shall be due and payable within thirty (30) days after receipt of an invoice therefor. If the amounts paid by Tenant pursuant to this Section exceed Tenant's Adjusted Share of Operating Expenses for the previous calendar year, then Landlord shall credit the difference against the Rent next due and owing from

Tenant; provided that, if the Lease term has expired, Landlord shall accompany Landlord's Statement with payment for the amount of such difference.

(z) Any amount due under this Section for any period that is less than a full month shall be prorated for such fractional month on the basis of the number of days in the month.

9.3. Landlord may, from time to time, modify Landlord's calculation and allocation procedures for Operating Expenses, so long as such modifications produce Dollar results substantially consistent with Landlord's then-current practice at the Project. Landlord or an affiliate(s) of Landlord currently own other property(ies) adjacent to the Building and Project or its neighboring properties, including but not limited to the buildings located at 21 Erie Street and 40 Erie Street in Cambridge, Massachusetts (collectively, "Neighboring Properties"). In connection with Landlord performing services for the Project pursuant to this Lease, similar services may be performed by the same vendor(s) for Neighboring Properties (for instance, shuttle services, food truck services or landscaping maintenance). In such a case, Landlord shall reasonably allocate to the Building and the Project the costs for such services based upon the ratio that the square footage of the Building or the Project (as applicable) bears to the total square footage of all of the Neighboring Properties or buildings within the Neighboring Properties for which the services are performed, unless the scope of the services performed for any building or property (including the Building and the Project) is disproportionately more or less than for others, in which case Landlord shall equitably allocate the costs based on the scope of the services being performed for each building or property (including the Building and the Project). In addition, Landlord intends on or about the date hereof, to consolidate ownership of the Property with the property known as 40 Erie Street in Cambridge, Massachusetts (the "40 Erie Street Property", which contains a building known as 40 Erie Street (the "40 Erie Building")) by consolidating the 40 Erie Street Property with the Property, and upon such consolidation, the defined term "Property" as used in this Lease shall mean the former Property (as defined in Recital "A" to this Lease) and the 40 Erie Street Property. Thereafter, in the case of any Operating Expenses (including, without limitation, any real estate or other taxes set forth in Section 9.1(a) hereof) that apply to the Property as a whole (as opposed to allocated specifically to each of the Building and the 40 Erie Building), as determined by Landlord, Landlord shall reasonably allocate to each building the costs of such Operating Expenses based upon the ratio that the rentable area of each of the Building and the 40 Erie Building, respectively, bears to the total rentable area of the Building and the 40 Erie Building together, or such other equitable allocation as Landlord reasonably determines.

9.4. Landlord's annual statement shall be final and binding upon Tenant unless Tenant, within sixty (60) days after Tenant's receipt thereof, shall contest any item therein by giving written notice to Landlord, specifying each item contested and the reasons therefor; provided that Tenant shall in all events pay the amount specified in Landlord's annual statement, pending the results of the Independent Review and determination of the Accountant(s), as applicable and as each such term is defined below. If, during such thirty (30)-day period, Tenant reasonably and in good faith questions or contests the correctness of Landlord's statement of Tenant's Adjusted Share of Operating Expenses, Landlord shall provide Tenant with reasonable access to Landlord's books and records to the extent relevant to determination of Operating Expenses, and such information as Landlord reasonably determines to be responsive to Tenant's written inquiries. In the event that, after Tenant's review of such information, Landlord and Tenant cannot agree upon the amount of Tenant's Adjusted Share of Operating Expenses, then Tenant shall have the right to have an independent public accounting firm hired by Tenant on an hourly basis and not on a contingent-fee basis (at Tenant's sole cost and expense) and approved by Landlord (which approval Landlord shall not unreasonably withhold or delay) audit and review such of Landlord's books and records for the year in question as directly relate to the determination of Operating Expenses for such year (the "Independent Review"), but not books and records of entities other than Landlord. Landlord shall make such books and records available at the location where Landlord maintains them in the ordinary course of its business. Landlord need not provide copies of any books or records. Tenant shall

commence the Independent Review within thirty (30) days after the date Landlord has given Tenant access to Landlord's books and records for the Independent Review. Tenant shall complete the Independent Review and notify Landlord in writing of Tenant's specific objections to Landlord's calculation of Operating Expenses (including Tenant's accounting firm's written statement of the basis, nature and amount of each proposed adjustment) no later than sixty (60) days after Landlord has first given Tenant access to Landlord's books and records for the Independent Review. Landlord shall review the results of any such Independent Review. The parties shall endeavor to agree promptly and reasonably upon Operating Expenses taking into account the results of such Independent Review. If, as of the date that is sixty (60) days after Tenant has submitted the Independent Review to Landlord, the parties have not agreed on the appropriate adjustments to Operating Expenses, then the parties shall engage a mutually agreeable independent third party accountant with at least ten (10) years' experience in commercial real estate accounting in the Cambridge, Massachusetts area (the "Accountant"). If the parties cannot agree on the Accountant, each shall within ten (10) days after such impasse appoint an Accountant (different from the accountant and accounting firm that conducted the Independent Review) and, within ten (10) days after the appointment of both such Accountants, those two Accountants shall select a third (which cannot be the accountant and accounting firm that conducted the Independent Review). If either party fails to timely appoint an Accountant, then the Accountant the other party appoints shall be the sole Accountant. Within ten (10) days after appointment of the Accountant(s), Landlord and Tenant shall each simultaneously give the Accountants (with a copy to the other party) its determination of Operating Expenses, with such supporting data or information as each submitting party determines appropriate. Within ten (10) days after such submissions, the Accountants shall by majority vote select either Landlord's or Tenant's determination of Operating Expenses. The Accountants may not select or designate any other determination of Operating Expenses. The determination of the Accountant(s) shall bind the parties. If the parties agree or the Accountant(s) determine that the Operating Expenses actually paid by Tenant for the calendar year in question exceeded Tenant's obligations for such calendar year, then Landlord shall, at Tenant's option, either (a) credit the excess to the next succeeding installments of estimated Additional Rent or (b) pay the excess to Tenant within thirty (30) days after delivery of such results. If the parties agree or the Accountant(s) determine that Tenant's payments of Operating Expenses for such calendar year were less than Tenant's obligation for the calendar year, then Tenant shall pay the deficiency to Landlord within thirty (30) days after delivery of such results. If the Independent Review reveals or the Accountant(s) determine that the Operating Expenses billed to Tenant by Landlord and paid by Tenant to Landlord for the applicable calendar year in question exceeded by more than seven and one-half percent (7.5%) what Tenant should have been billed during such calendar year, then Landlord shall pay the reasonable cost of the Independent Review. In all other cases Tenant shall pay the cost of the Independent Review and the Accountant(s).

9.5. Tenant shall not be responsible for Operating Expenses with respect to any time period prior to the Term Commencement Date; provided, however, that if Landlord shall permit Tenant possession of the Premises prior to the Term Commencement Date, Tenant shall be responsible for Operating Expenses from such earlier date of possession (the Term Commencement Date or such earlier date, as applicable, the "Expense Trigger Date"); and provided, further, that Landlord may annualize certain Operating Expenses incurred prior to the Expense Trigger Date over the course of the budgeted year during which the Expense Trigger Date occurs, and Tenant shall be responsible for the annualized portion of such Operating Expenses corresponding to the number of days during such year, commencing with the Expense Trigger Date, for which Tenant is otherwise liable for Operating Expenses pursuant to this Lease. Tenant's responsibility for Tenant's Adjusted Share of Operating Expenses shall continue to the latest of (a) the date of termination of the Lease, (b) the date Tenant has fully vacated the Premises and (c) if termination of the Lease is due to a default by Tenant, the date of rental commencement of a replacement tenant.

9.6. Operating Expenses for the calendar year in which Tenant's obligation to share therein commences and for the calendar year in which such obligation ceases shall be prorated on a basis reasonably determined by

Landlord. Expenses such as taxes, assessments and insurance premiums that are incurred for an extended time period shall be prorated based upon the time periods to which they apply so that the amounts attributed to the Premises relate in a reasonable manner to the time period wherein Tenant has an obligation to share in Operating Expenses.

9.7. Within thirty (30) days after the end of each calendar month, Tenant shall submit to Landlord an invoice, or, in the event an invoice is not available, an itemized list, of all costs and expenses that (a) Tenant has incurred (either internally or by employing third parties) during the prior month and (b) for which Tenant reasonably believes it is entitled to reimbursements from Landlord pursuant to the terms of this Lease.

9.8. In the event that the Building or Project is less than fully occupied during a calendar year, Tenant acknowledges that Landlord may extrapolate Operating Expenses that vary depending on the occupancy of the Building or Project, as applicable, to equal Landlord's reasonable estimate of what such Operating Expenses would have been had the Building or Project, as applicable, been ninety-five percent (95%) occupied during such calendar year; provided, however, that Landlord shall not recover more than one hundred percent (100%) of Operating Expenses.

10. Taxes on Tenant's Property.

10.1. Tenant shall be solely responsible for the payment of any and all taxes levied upon (a) personal property and trade fixtures located at the Premises and (b) any gross or net receipts of or sales by Tenant, and shall pay the same at least twenty (20) days prior to delinquency.

10.2. If any such taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property or, if the assessed valuation of the Building, the Property or the Project is increased by inclusion therein of a value attributable to Tenant's personal property or trade fixtures, and if Landlord, after written notice to Tenant, pays the taxes based upon any such increase in the assessed value of the Building, the Property or the Project, then Tenant shall, upon demand, repay to Landlord the taxes so paid by Landlord.

11. Security Deposit.

11.1. Tenant shall deposit with Landlord on or before the Execution Date the sum set forth in Section 2.6 (the "Security Deposit"), which sum shall be held by Landlord as security for the faithful performance by Tenant of all of the terms, covenants and conditions of this Lease to be kept and performed by Tenant during the period commencing on the Execution Date and ending upon the expiration or termination of Tenant's obligations under this Lease. If Tenant Defaults (as defined below) with respect to any provision of this Lease, including any provision relating to the payment of Rent, then Landlord may (but shall not be required to) use, apply or retain all or any part of the Security Deposit for the payment of any Rent or any other sum in default, or to compensate Landlord for any other loss or damage that Landlord may suffer by reason of Tenant's default. If any portion of the Security Deposit is so used or applied, then Tenant shall, within ten (10) days following demand therefor, deposit cash with Landlord in an amount sufficient to restore the Security Deposit to its original amount, and Tenant's failure to do so shall be a material breach of this Lease. The provisions of this Article shall survive the expiration or earlier termination of this Lease.

11.2. In the event of bankruptcy or other debtor-creditor proceedings against Tenant, the Security Deposit shall be deemed to be applied first to the payment of Rent and other charges due Landlord for all periods prior to the filing of such proceedings.

11.3. Landlord may deliver to any purchaser of Landlord's interest in the Premises the funds deposited hereunder by Tenant, and thereupon Landlord shall be discharged from any further liability with respect to such deposit. This provision shall also apply to any subsequent transfers.

11.4. If Tenant shall fully and faithfully perform every provision of this Lease to be performed by it, then the Security Deposit, or any balance thereof, shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within thirty (30) days after the expiration or earlier termination of this Lease.

11.5. If the Security Deposit shall be in cash, Landlord shall hold the Security Deposit in an account at a banking organization selected by Landlord; provided, however, that Landlord shall not be required to maintain a separate account for the Security Deposit, but may intermingle it with other funds of Landlord. Landlord shall be entitled to all interest and/or dividends, if any, accruing on the Security Deposit. Landlord shall not be required to credit Tenant with any interest for any period during which Landlord does not receive interest on the Security Deposit.

11.6. The Security Deposit may be in the form of cash, a letter of credit or any other security instrument reasonably acceptable to Landlord Tenant may at any time, except when Tenant is in Default (as defined below), deliver a letter of credit (the "L/C Security") as the entire Security Deposit, as follows:

(a) If Tenant elects to deliver L/C Security, then Tenant shall provide Landlord, and maintain in full force and effect throughout the Term and until the date that is four (4) months after the then-current Term Expiration Date, a letter of credit in the form of Exhibit E issued by an issuer reasonably satisfactory to Landlord, in the amount of the Security Deposit, with an initial term of at least one year. Landlord may require the L/C Security to be re-issued by a different issuer at any time during the Term if Landlord reasonably believes that the issuing bank of the L/C Security is or may soon become insolvent; provided, however, Landlord shall return the existing L/C Security to the existing issuer immediately upon receipt of the substitute L/C Security. If any issuer of the L/C Security shall become insolvent or placed into FDIC receivership, then Tenant shall immediately deliver to Landlord (without the requirement of notice from Landlord) substitute L/C Security issued by an issuer reasonably satisfactory to Landlord, and otherwise conforming to the requirements set forth in this Article. As used herein with respect to the issuer of the L/C Security, "insolvent" shall mean the determination of insolvency as made by such issuer's primary bank regulator (i.e., the state bank supervisor for state chartered banks; the OCC or OTS, respectively, for federally chartered banks or thrifts; or the Federal Reserve for its member banks). If, at the Term Expiration Date, any Rent remains uncalculated or unpaid, then (i) Landlord shall with reasonable diligence complete any necessary calculations, (ii) Tenant shall extend the expiry date of such L/C Security from time to time as Landlord reasonably requires and (iii) in such extended period, Landlord shall not unreasonably refuse to consent to an appropriate reduction of the L/C Security. Tenant shall reimburse Landlord's legal costs (as estimated by Landlord's counsel) in handling Landlord's acceptance of L/C Security or its replacement or extension.

(b) If Tenant delivers to Landlord satisfactory L/C Security in place of the entire Security Deposit, Landlord shall remit to Tenant any cash Security Deposit Landlord previously held.

(c) Landlord may draw upon the L/C Security, and hold and apply the proceeds in the same manner and for the same purposes as the Security Deposit, if (i) an uncured Default (as defined below) exists, (ii) as of the date forty-five (45) days before any L/C Security expires (even if such scheduled expiry date is after the Term Expiration Date) Tenant has not delivered to Landlord an amendment or replacement for such L/C Security, reasonably satisfactory to Landlord, extending the expiry date to the earlier of (1) four (4) months after the then-current Term Expiration Date or (2) the date one year after the then-current expiry date of the L/C Security, (iii) the L/C Security provides for automatic renewals, Landlord asks the issuer to confirm the current

L/C Security expiry date, and the issuer fails to do so within ten (10) business days, (iv) Tenant fails to pay (when and as Landlord reasonably requires) any bank charges for Landlord's transfer of the L/C Security or (v) the issuer of the L/C Security ceases, or announces that it will cease, to maintain an office in the city where Landlord may present drafts under the L/C Security (and fails to permit drawing upon the L/C Security by overnight courier or facsimile). This Section does not limit any other provisions of this Lease allowing Landlord to draw the L/C Security under specified circumstances.

(d) Tenant shall not seek to enjoin, prevent, or otherwise interfere with Landlord's draw under L/C Security, even if it violates this Lease. Tenant acknowledges that the only effect of a wrongful draw would be to substitute a cash Security Deposit for L/C Security, causing Tenant no legally recognizable damage. Landlord shall hold the proceeds of any draw in the same manner and for the same purposes as a cash Security Deposit. In the event of a wrongful draw, (a) the parties shall cooperate to allow Tenant to post replacement L/C Security simultaneously with the return to Tenant of the wrongfully drawn sums, (b) Landlord shall upon request confirm in writing to the issuer of the L/C Security that Landlord's draw was erroneous, and (c) if Tenant receives a final determination from a court of competent jurisdiction that is not subject to appeal that Landlord has made a "wrongful" draw, (i) Landlord shall pay Tenant interest upon the amount of such wrongful draw at the rate of twelve percent (12%) and (ii) Tenant shall be entitled to recover its reasonable attorney's fees in accordance with Section 40.7. For purposes of the immediately foregoing sentence, the term "wrongful" shall mean that Landlord had no reasonable basis to believe that it had the right to make the draw.

(e) If Landlord transfers its interest in the Premises, then Tenant shall at Tenant's expense, within five (5) business days after receiving a request from Landlord, deliver (and, if the issuer requires, Landlord shall consent to) an amendment to the L/C Security naming Landlord's grantee as substitute beneficiary. If the required Security Deposit changes while L/C Security is in force, then Tenant shall deliver (and, if the issuer requires, Landlord shall consent to) a corresponding amendment to the L/C Security.

11.8. If Tenant, as of the third (3rd) anniversary of the Term Commencement Date, (a) has a market capitalization of at least One Billion Five Hundred Million Dollars ($1,500,000,000) and (b) has not been in Default under this Lease prior to such third (3rd) anniversary of the Term Commencement Date, then Tenant, no later than forty-five (45) days after the third (3rd) anniversary of the Term Commencement Date, may notify Landlord in writing and any such notification shall include a certificate (in form and substance reasonably acceptable to Landlord) from Tenant's Chief Financial Officer certifying to such market capitalization with any such reasonable supporting documentation requested by Landlord. Upon Landlord's approval of such certificate (and, if requested, supporting documentation), the Security Deposit shall be reduced to Nine Hundred Thirty Thousand Dollars ($930,000). If Landlord is then holding a cash Security Deposit, it shall return to Tenant the amount of Four Hundred Seventy Thousand Dollars ($470,000) within thirty (30) days of its approval of such certificate. If the Security Deposit is in the form of the L/C Security, Tenant may provide to Landlord a replacement L/C Security in the amount of Nine Hundred Thirty Thousand Dollars ($930,000) that satisfies the requirements of this Article 11. Provided such replacement L/C Security complies with the terms and provisions of this Article 11, Landlord shall, within thirty (30) days after its receipt of such replacement L/C Security, return to Tenant the original L/C Security.

12. Use.

12.1. Tenant shall use the Premises for the Permitted Use, and shall not use the Premises, or permit or suffer the Premises to be used, for any other purpose without Landlord's prior written consent, which consent Landlord may withhold in its sole and absolute discretion.

12.2. Tenant shall not use or occupy the Premises in violation of Applicable Laws; zoning ordinances; or the certificate of occupancy issued for the Building or the Project, and shall, upon five (5) days' written notice

from Landlord, discontinue any use of the Premises that is declared or claimed by any Governmental Authority having jurisdiction to be a violation of any of the above, or that in Landlord's reasonable opinion violates any of the above. Tenant shall comply with any direction of any Governmental Authority having jurisdiction that shall, by reason of the nature of Tenant's use or occupancy of the Premises, impose any duty upon Tenant or Landlord with respect to the Premises or with respect to the use or occupation thereof and shall indemnify, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold Landlord and its affiliates, employees, agents and contractors; and any lender, mortgagee, ground lessor or beneficiary (each, a "Lender" and, collectively with Landlord and its affiliates, employees, agents and contractors, the "Landlord Indemnitees") harmless from and against any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages, suits or judgments, and all reasonable expenses (including reasonable attorneys' fees, charges and disbursements, regardless of whether the applicable demand, claim, action, cause of action or suit is voluntarily withdrawn or dismissed) incurred in investigating or resisting the same (collectively, "Claims") of any kind or nature that arise before, during or after the Term as a result of Tenant's breach of this Section.

12.3. Tenant shall not do or permit to be done anything that will invalidate or increase the cost of any fire, environmental, extended coverage or any other insurance policy covering the Building or the Project, and shall comply with all rules, orders, regulations and requirements of the insurers of the Building and the Project, and Tenant shall promptly, upon demand, reimburse Landlord for any additional premium charged for such policy by reason of Tenant's failure to comply with the provisions of this Article.

12.4. Tenant shall keep all doors opening onto public corridors closed, except when in use for ingress and egress.

12.5. No additional locks or bolts of any kind shall be placed upon any of the doors or windows by Tenant, nor shall any changes be made to existing locks or the mechanisms thereof without Landlord's prior written consent. Tenant shall, upon termination of this Lease, return to Landlord all keys to offices and restrooms either furnished to or otherwise procured by Tenant. In the event any key so furnished to Tenant is lost, Tenant shall pay to Landlord the cost of replacing the same or of changing the lock or locks opened by such lost key if Landlord shall deem it necessary to make such change. Tenant shall be permitted to install its own security system in the Premises which is compatible with the key card access system for the Building and may include, within the Premises, video, motion and other sensors. Tenant shall have the right to install and use a WiFi system in its Premises. Any installations under this Section 12.5, irrespective of their cost, shall be considered Alterations, and not Cosmetic Alterations (as both such terms are hereinafter defined), and the installation thereof shall be subject to the terms and provisions of Article 17.

12.6. No awnings or other projections shall be attached to any outside wall of the Building. No curtains, blinds, shades or screens shall be attached to or hung in, or used in connection with, any window or door of the Premises other than Landlord's standard window coverings. Neither the interior nor exterior of any windows shall be coated or otherwise sunscreened without Landlord's prior written consent, nor shall any bottles, parcels or other articles be placed on the windowsills or items attached to windows that are visible from outside the Premises. No equipment, furniture or other items of personal property shall be placed on any exterior balcony without Landlord's prior written consent.

12.7. Tenant shall be entitled to install and maintain, at its sole cost and expense, one (1) exterior sign identifying the Tenant, the nature of which is to be mutually agreed upon by Landlord and Tenant, acting in good faith, so long as Tenant occupies at least seventy-five percent (75%) of the Premises. No sign, advertisement or notice (collectively, "Signage") shall be exhibited, painted or affixed by Tenant on any part of the Premises or the Building without Landlord's prior written consent, and Landlord's consent shall not be unreasonably withheld or delayed in relation to the size, location, quality, color and style of any such Signage.

All Signage shall conform to Landlord's design criteria and shall be removed by Tenant upon the expiration or early termination of this Lease. For any Signage, Tenant shall, at Tenant's own cost and expense, (a) acquire all permits for such Signage and such Signage shall comply with Applicable Laws and (b) design, fabricate, install and maintain such Signage in a first-class condition. If Tenant fails to remove Signage upon the expiration or early termination of this Lease, Landlord shall be entitled to remove the same, and Tenant shall be responsible for reimbursing Landlord for costs incurred by Landlord in removing any of Tenant's Signage. Interior signs on entry doors to the Premises shall be inscribed, painted or affixed by Tenant at Tenant's sole cost and expense, and shall be of a size, color and type and be located in a place acceptable to Landlord, and the directory tablet shall be inscribed or affixed for Tenant by Landlord at Landlord's sole cost and expense, and shall be of a size, color and type and be located in a place acceptable to Landlord. The directory tablet shall be provided exclusively for the display of the name and location of tenants only. Tenant shall not place anything on the exterior of the corridor walls or corridor doors other than Landlord's standard lettering. At Landlord's option, Landlord may install any Tenant Signage, and Tenant shall pay all costs associated with such installation within thirty (30) days after demand therefor. Notwithstanding anything set forth herein to the contrary, all rights of Tenant with respect to Signage on the exterior of the Building shall be personal to Tenant and may not be assigned with this Lease or otherwise.

12.8. Tenant may only place equipment within the Premises with floor loading consistent with the Building's structural design unless Tenant obtains Landlord's prior written approval. Tenant may place such equipment only in a location designed to carry the weight of such equipment.

12.9. Tenant shall cause any equipment or machinery to be installed in the Premises so as to reasonably prevent sounds or vibrations therefrom from extending into the Common Area or other offices in the Project.

12.10. Tenant shall not (a) do or permit anything to be done in or about the Premises that shall in any way obstruct or interfere with the rights of other tenants or occupants of the Project, or injure or annoy them, (b) use or allow the Premises to be used for immoral, unlawful or objectionable purposes, (c) cause, maintain or permit any nuisance or waste in, on or about the Project or (d) take any other action that would in Landlord's reasonable determination in any manner adversely affect other tenants' quiet use and enjoyment of their space or adversely impact their ability to conduct business in a professional and suitable work environment. Notwithstanding anything in this Lease to the contrary, Tenant may not install any security systems (including cameras) outside the Premises or that record sounds or images outside the Premises without Landlord's prior written consent, which Landlord may withhold in its sole and absolute discretion.

12.11. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for all liabilities, costs and expenses arising out of or in connection with the compliance of the Premises with the Americans with Disabilities Act, 42 U.S.C. § 12101, et seq., and any state and local accessibility laws, codes, ordinances and rules (collectively, and together with regulations promulgated pursuant thereto, the "ADA") (except to the extent that any such non-compliance of the Premises with the ADA (as in effect and interpreted as of the Term Commencement Date) existed as of the Term Commencement Date), and Tenant shall indemnify, compensate, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold the Landlord Indemnitees harmless from and against Claims arising out of any such failure of the Premises to comply with the Tenant's obligations with respect to the ADA under this Section. This Section (as well as any other provisions of this Lease dealing with indemnification of the Landlord Indemnitees by Tenant) shall be deemed to be modified in each case by the insertion in the appropriate place of the following: "except as otherwise provided in Mass. G.L. Ter. Ed., C. 186, Section 15." The provisions of this Section 12 shall survive the expiration or earlier termination of this Lease.

12.12. Tenant shall maintain temperature and humidity in the Premises in accordance with ASHRAE standards at all times (subject to Landlord's compliance with its obligations with respect to base Building HVAC systems under Sections 16.9 and 18.1 of this Lease).

12.13. To the extent Tenant engages in laboratory use that uses Hazardous Materials (as hereinafter defined) at the Premises, Tenant shall establish and maintain a chemical safety program administered by a licensed, qualified individual in accordance with the requirements of the Massachusetts Water Resources Authority ("MWRA") and any other applicable Governmental Authority. Tenant shall be solely responsible for all costs incurred in connection with such chemical safety program, and Tenant shall provide Landlord with such documentation as Landlord may reasonably require evidencing Tenant's compliance with the requirements of (a) the MWRA and any other applicable Governmental Authority with respect to such chemical safety program and (b) this Section. Notwithstanding the foregoing, Landlord shall obtain and maintain during the Term (m) any permit required by the MWRA ("MWRA Permit") and (n) a wastewater treatment operator license from the Commonwealth of Massachusetts with respect to Tenant's use of the Acid Neutralization Tank (as defined below) in the Building. Tenant shall not introduce anything into the Acid Neutralization Tank (x) in violation of the terms of the MWRA Permit, (y) in violation of Applicable Laws or (z) that would interfere with the proper functioning of the Acid Neutralization Tank. Tenant agrees to reasonably cooperate with Landlord in order to obtain the MWRA Permit and the wastewater treatment operator license. Tenant shall reimburse Landlord within ten (10) business days after demand for any reasonable costs incurred by Landlord pursuant to this Section.

13. Rules and Regulations, CC&Rs, Parking Facilities and Common Area.

13.1. Tenant shall have the non-exclusive right, in common with others, to use the Common Area in conjunction with Tenant's use of the Premises for the Permitted Use, and such use of the Common Area and Tenant's use of the Premises shall be subject to the rules and regulations adopted by Landlord and attached hereto as Exhibit G, together with such other reasonable and nondiscriminatory rules and regulations as are hereafter promulgated by Landlord in its sole and absolute discretion (the "Rules and Regulations"). Tenant shall use commercially reasonable efforts to ensure that its contractors, subcontractors, employees, subtenants and invitees faithfully observe and comply with the Rules and Regulations. Landlord shall not be responsible to Tenant for the violation or non-performance by any other tenant or any agent, employee or invitee thereof of any of the Rules and Regulations.

13.2. This Lease is subject to any recorded covenants, conditions or restrictions on the Project or Property, including the Parking and Transportation Demand Management Plan for the Project that was approved on April 28, 1999, and that is attached hereto as Exhibit H with all applicable transfers thereof (the "PTDM"), as the same may be amended, amended and restated, supplemented or otherwise modified from time to time (the "CC&Rs"). Tenant shall comply with the CC&Rs. Tenant acknowledges that Tenant, at its sole cost and expense, shall comply with the tenant requirements in the PTDM, including the requirements set forth in the "Alternative Work Programs," "Alternative Mode Promotions and Incentives," "MBTA Corporate Pass Program and Subsidized Transit Passes," "Ridesharing Vehicles" and "Bicycle and Pedestrian Programs" sections thereof. Landlord shall provide covered bicycle storage for Tenant's use as provided in Section 44 hereof. Tenant, at its sole cost and expense, shall also comply with the reporting requirements set forth in the PTDM at Landlord's request. Any costs incurred by Landlord in connection with the PTDM shall constitute an Operating Expense.

13.3. The Charles River Transportation Management Association (of which Landlord or an affiliate of Landlord is currently a member) provides certain programs to help improve transportation in the Cambridge area. Their website is www.charlesrivertma.org.

13.4. Tenant shall have a non-exclusive, irrevocable license to use 83 parking spaces, 78 of which shall be in the Parking Garage in common on an unreserved basis with other tenants of the Project and Neighboring Properties during the Term and 5 of which shall be reserved parking spaces on the west end of the Building, in the parking area near the loading dock and adjacent to Tenant's first (1st) floor space ("Dedicated Spaces"). The Dedicated Spaces shall be marked as reserved and Landlord shall make reasonable efforts to enforce that these spaces are reserved. The cost of the parking spaces shall be Two Hundred Fifty Dollars ($250.00) per parking space per month (subject to market rate adjustments by Landlord from time to time throughout the Term), which Tenant shall pay simultaneously with payments of Base Rent as Additional Rent. Landlord and Tenant agree that for the period from the Execution Date to the first (1st) anniversary of the Execution Date (a) Tenant shall have the one-time right, upon not less than thirty (30) days prior written notice to Landlord, to elect to use less than such 83 parking spaces allocated to Tenant (such number, the "Initial Reduced Parking Number"), and (b) Tenant shall only be obligated to pay for the use of the Initial Reduced Parking Number. On or before the first (1st) anniversary of the Execution Date, Tenant may notify Landlord in writing (the "Parking Notice") whether Tenant elects to use all 83 parking spaces or some other number of parking spaces that is equal to or greater than the Initial Reduced Parking Number but less than 83 parking spaces (the "Established Reduced Parking Number") for the remainder of the Term (including any extension thereof), provided that if Tenant fails to timely deliver to Landlord the Parking Notice, Tenant shall be deemed to have elected to use all 83 parking spaces. If Tenant elects the Established Reduced Parking Number in the Parking Notice, then Tenant shall forfeit for the then remainder of the Term (including any extension thereof) any and all rights to the parking spaces exceeding the Established Reduced Parking Number; provided, however, that Tenant may later request from Landlord additional parking spaces, including parking spaces in excess of the 83 parking spaces allocated to Tenant as aforesaid, and subject to the availability of such additional parking spaces, as determined by Landlord in its sole and absolute discretion, and provided such increase is in compliance with Applicable Laws, then the number of parking spaces licensed to Tenant under this Section 13.4 shall be increased by the number of parking spaces so requested; provided, however, that any such parking spaces in excess of the Established Reduced Parking Number shall be terminable by Landlord upon not less than thirty (30) days prior written notice to Tenant. Landlord, from time to time during the Term of this Lease, may require that Tenant confirm the number of parking spaces licensed to Tenant under this Section 13.4, and Tenant shall execute and deliver any such reasonable document required by Landlord confirming the same.

13.5. Tenant agrees not to unreasonably overburden the parking facilities and agrees to cooperate with Landlord and other tenants in the use of the parking facilities. Landlord reserves the right to determine that parking facilities are becoming overcrowded and to limit Tenant's use thereof. Upon such determination, Landlord may reasonably allocate parking spaces among Tenant and other tenants of the Building or the Project provided that Tenant shall be entitled to the number of spaces set forth in Section 13.4 above. Nothing in this Section, however, is intended to create an affirmative duty on Landlord's part to monitor parking, except as set forth in Section 13.4 above.

13.6. Subject to the terms of this Lease including the Rules and Regulations and the rights of other tenants of the Building, Tenant shall have the non-exclusive right on an unreserved basis to access the freight loading dock and freight elevator twenty-four (24) hours per day, seven (7) days per week, at no additional cost. Landlord shall not be responsible for any coordination of the use of the freight elevator or the loading dock by tenants at the Building. Landlord shall provide a dumpster at the loading dock for Tenant's use for the disposal of non-Hazardous Materials, and Tenant shall pay Tenant's Adjusted Share of the cost of said dumpster. Tenant shall be solely responsible for the disposal of any Hazardous Materials in accordance with Applicable Laws.

13.7. The land upon which the Parking Garage is situated is subject to that certain Activity and Use Limitation dated February 23, 2001, which was recorded on February 27, 2001 as Instrument No. 785 in Book

32422, Page 393 in the Middlesex South District Registry of Deeds, Commonwealth of Massachusetts and filed as Document No. 1163744 in the Middlesex South District Registry of the Land Court.

14. Project Control by Landlord.

14.1. Landlord reserves full control over the Building and the Project to the extent not inconsistent with Tenant's enjoyment of the Premises as provided by this Lease. This reservation includes Landlord's right to subdivide the Project; convert the Building to condominium units; change the size of the Project by selling all or a portion of the Project or adding real property and any improvements thereon to the Project; grant easements and licenses to third parties; maintain or establish ownership of the Building separate from fee title to the Property; make additions to or reconstruct portions of the Building and the Project; install, use, maintain, repair, replace and relocate for service to the Premises and other parts of the Building or the Project pipes, ducts, conduits, wires and appurtenant fixtures, wherever located in the Premises, the Building or elsewhere at the Project; and alter or relocate any other Common Area or facility, including private drives, lobbies, entrances and landscaping; provided, however, that such rights shall be exercised in a way that does not materially adversely affect Tenant's beneficial use and occupancy of the Premises, including the Permitted Use and Tenant's access to the Premises. Tenant acknowledges that Landlord specifically reserves the right to allow the exclusive use of corridors and restroom facilities located on specific floors to one or more tenants occupying such floors; provided, however, that Tenant shall not be deprived of the use of the corridors reasonably required to serve the Premises or of restroom facilities serving the floor upon which the Premises are located.

14.2. Possession of areas of the Premises necessary for utilities, services, safety and operation of the Building is reserved to Landlord.

14.3. Tenant shall, at Landlord's request, promptly execute such further documents as may be reasonably appropriate to assist Landlord in the performance of its obligations hereunder; provided that Tenant need not execute any document that creates additional liability for Tenant or that deprives Tenant of the quiet enjoyment and use of the Premises as provided for in this Lease.

14.4. Landlord may, at any and all reasonable times during non-business hours (or during business hours, if (a) with respect to Subsections 14.4(u) through 14.4(y), Tenant so requests, and (b) with respect to Subsection 14.4(z), if Landlord so requests), and upon twenty-four (24) hours' prior notice (which may be oral or by email to the office manager or other Tenant-designated individual at the Premises; but provided that no time restrictions shall apply or advance notice be required if an emergency necessitates immediate entry), enter the Premises to (u) inspect the same and to determine whether Tenant is in compliance with its obligations hereunder, (v) supply any service Landlord is required to provide hereunder, (w) alter, improve or repair any portion of the Building other than the Premises for which access to the Premises is reasonably necessary, (x) post notices of nonresponsibility, (y) access the telephone equipment, electrical substation and fire risers and (z) show the Premises to prospective tenants during the final year of the Term and current and prospective purchasers and lenders at any time. Notwithstanding the foregoing, Tenant shall have the right to have a representative of Tenant accompany Landlord at such times; provided, however, if Tenant's representative is not available or does not elect to accompany Landlord at the times that Landlord has requested access, then such unavailability shall not prohibit or otherwise restrict Landlord's access, and Landlord may access the Premises with or without Tenant's representative present. Notwithstanding the immediately foregoing sentence, and except in the event of an emergency, Tenant's representative shall be present during any times that Landlord accesses the Manufacturing Area or Vivarium (collectively, the "Secure Areas"), and Landlord shall endeavor to comply with Tenant's reasonable confidentiality, security, cleanliness and safety requirements when accessing the Secure Areas. As used in the immediately foregoing sentence, the term "emergency" shall mean an event or occurrence for which Landlord reasonably believes there exists the possibility of personal injury, loss of life, or damage to real or personal property. Tenant shall have the right to post signs in its

Premises related to the Secure Areas provided that such signs are not visible from outside the Premises. In connection with any such alteration, improvement or repair as described in Subsection 14.4(w), Landlord may erect in the Premises or elsewhere in the Project scaffolding and other structures reasonably required for the alteration, improvement or repair work to be performed. In no event shall Tenant's Rent abate as a result of Landlord's activities pursuant to this Section; provided, however, that all such activities shall be conducted in such a manner so as to cause as little interference to Tenant as is reasonably possible. Landlord shall at all times retain a key with which to unlock all of the doors in the Premises. If an emergency necessitates immediate access to the Premises, Landlord may use whatever force is necessary to enter the Premises, and any such entry to the Premises shall not constitute a forcible or unlawful entry to the Premises, a detainer of the Premises, or an eviction of Tenant from the Premises or any portion thereof.

15. Quiet Enjoyment. Landlord covenants that Tenant, upon paying the Rent and performing its obligations contained in this Lease, may peacefully and quietly have, hold and enjoy the Premises, free from any claim by Landlord or persons claiming under Landlord, but subject to all of the terms and provisions hereof, provisions of Applicable Laws and rights of record to which this Lease is or may become subordinate. This covenant is in lieu of any other quiet enjoyment covenant, either express or implied.

16. Utilities and Services.

16.1. Tenant shall pay for all water (including the cost to service, repair and replace reverse osmosis, de-ionized and other treated water), gas, heat, light, power, telephone, internet service, cable television, other telecommunications and other utilities supplied to the Premises, together with any fees, surcharges and taxes thereon. Electricity, HVAC airflow and gas shall be separately sub-metered to Tenant as part of the Tenant Improvements. Water and sewer charges, as well as charges for reverse osmosis and other treated water, shall be charged to and paid by Tenant in accordance with Article 9 of this Lease. Notwithstanding the foregoing, if any other utility is not separately metered or sub-metered to Tenant, Tenant shall pay Tenant's Adjusted Share of all charges of such utility jointly metered with other premises as Additional Rent or, in the alternative, Landlord may, at its option, monitor the usage of such utilities by Tenant and charge Tenant with the cost of purchasing, installing and monitoring such metering equipment, which cost shall be paid by Tenant as Additional Rent. Landlord may base its bills for utilities on reasonable estimates; provided that Landlord adjusts such billings promptly thereafter or as part of the next Landlord's Statement to reflect the actual cost of providing utilities to the Premises. To the extent that Tenant uses more than Tenant's Pro Rata Share of any utilities, then Tenant shall pay Landlord for Tenant's Adjusted Share of such utilities to reflect such excess. In the event that the Building or Project is less than fully occupied during a calendar year, Tenant acknowledges that Landlord may extrapolate utility usage that varies depending on the occupancy of the Building or Project (as applicable) to equal Landlord's reasonable estimate of what such utility usage would have been had the Building or Project, as applicable, been ninety-five percent (95%) occupied during such calendar year; provided, however, that Landlord shall not recover more than one hundred percent (100%) of the cost of such utilities. Tenant shall not be liable for the cost of utilities supplied to the Premises attributable to the time period prior to the Term Commencement Date; provided, however, that, if Landlord shall permit Tenant possession of the Premises prior to the Term Commencement Date and Tenant uses the Premises for any purpose other than placement of personal property as set forth in Section 4.4, then Tenant shall be responsible for the cost of utilities supplied to the Premises from such earlier date of possession.

16.2. Landlord shall not be liable for, nor shall any eviction of Tenant result from, the failure to furnish any utility or service, whether or not such failure is caused by accidents; breakage; casualties (to the extent not caused by the party claiming Force Majeure); Severe Weather Conditions (as defined below); physical natural disasters (but excluding weather conditions that are not Severe Weather Conditions); strikes, lockouts or other labor disturbances or labor disputes (other than labor disturbances and labor disputes resulting solely from the acts or omissions of the party claiming Force Majeure); acts of terrorism; riots or civil disturbances; wars or

insurrections; shortages of materials (which shortages are not unique to the party claiming Force Majeure); government regulations, moratoria or other governmental actions, inactions or delays; failures by third parties to deliver gas, oil or another suitable fuel supply, or inability of the party claiming Force Majeure, by exercise of reasonable diligence, to obtain gas, oil or another suitable fuel; or other causes beyond the reasonable control of the party claiming that Force Majeure has occurred (collectively, "Force Majeure"); or, to the extent permitted by Applicable Laws, Landlord's negligence. In the event of such failure, Tenant shall not be entitled to termination of this Lease or any abatement or reduction of Rent, nor shall Tenant be relieved from the operation of any covenant or agreement of this Lease. "Severe Weather Conditions" means weather conditions that are materially worse than those that reasonably would be anticipated for the Property at the applicable time based on historic meteorological records. Notwithstanding anything to the contrary in this Lease, if, for more than three (3) consecutive business days following written notice to Landlord and as a direct result of Landlord's gross negligence or willful misconduct (and except to the extent that such failure is caused in whole or in part by the action or inaction of a Tenant Party (as defined below)), the provision of HVAC or other utilities to all or a material portion of the Premises that Landlord must provide pursuant to this Lease is interrupted (a "Material Services Failure"), then Tenant's Base Rent and Operating Expenses (or, to the extent that less than all of the Premises are affected, a proportionate amount (based on the Rentable Area of the Premises that is rendered unusable) of Base Rent and Operating Expenses) shall thereafter be abated until the Premises are again usable by Tenant for the Permitted Use; provided, however, that, if Landlord is diligently pursuing the restoration of such HVAC and other utilities and Landlord provides substitute HVAC and other utilities reasonably suitable for Tenant's continued use and occupancy of the Premises for the Permitted Use (e.g., supplying potable water or portable air conditioning equipment), then neither Base Rent nor Operating Expenses shall be abated. During any Material Services Failure, Tenant will cooperate with Landlord to arrange for the provision of any interrupted utility services on an interim basis via temporary measures until final corrective measures can be accomplished, and Tenant will permit Landlord the necessary access to the Premises to remedy such Material Service Failure. In the event of any interruption of HVAC or other utilities that Landlord must provide pursuant to this Lease, regardless of the cause, Landlord shall diligently pursue the restoration of such HVAC and other utilities. Notwithstanding anything in this Lease to the contrary, but subject to Article 24 (which shall govern in the event of a casualty), the provisions of this Section shall be Tenant's sole recourse and remedy in the event of an interruption of HVAC or other utilities to the Premises, including related to Section 16.8.

16.3. Tenant shall pay for, prior to delinquency of payment therefor, any utilities and services that may be furnished to the Premises during or, if Tenant occupies the Premises after the expiration or earlier termination of the Term, after the Term, beyond those utilities provided by Landlord, including telephone, internet service, cable television and other telecommunications, together with any fees, surcharges and taxes thereon. Upon Landlord's demand, utilities and services provided to the Premises that are separately metered shall be paid by Tenant directly to the supplier of such utilities or services.

16.4. Tenant shall not, without Landlord's prior written consent, use any device in the Premises (including data processing machines) that will in any way (a) increase the amount of ventilation, air exchange, gas, steam, electricity or water required or consumed in the Premises based upon Tenant's Pro Rata Share of the Building beyond the existing capacity of the Building usually furnished or supplied for the Permitted Use or (b) exceed Tenant's Pro Rata Share of the Building's capacity to provide such utilities or services.

16.5. If Tenant shall require utilities or services in excess of those usually furnished or supplied for tenants in similar spaces in the Building or the Project by reason of Tenant's equipment or extended hours of business operations, then Tenant shall first procure Landlord's consent for the use thereof, which consent Landlord may condition upon the availability of such excess utilities or services, and Tenant shall pay as Additional Rent an amount equal to the cost of providing such excess utilities and services.

16.6. Landlord shall provide water in Common Area for lavatory and landscaping purposes only, which water shall be from the local municipal or similar source; provided, however, that if Landlord determines that Tenant requires, uses or consumes water provided to the Common Area for any purpose other than ordinary lavatory purposes, Landlord may install a water meter ("Tenant Water Meter") and thereby measure Tenant's water consumption for all purposes. Tenant shall pay Landlord for the costs of any Tenant Water Meter and the installation and maintenance thereof during the Term. If Landlord installs a Tenant Water Meter, Tenant shall pay for water consumed, as shown on such meter, as and when bills are rendered. If Tenant fails to timely make such payments, Landlord may pay such charges and collect the same from Tenant. Any such costs or expenses incurred or payments made by Landlord for any of the reasons or purposes stated in this Section shall be deemed to be Additional Rent payable by Tenant and collectible by Landlord as such.

16.7. Landlord reserves the right to stop service of the elevator, plumbing, ventilation, air conditioning and utility systems, when Landlord deems necessary or desirable, due to accident, emergency or the need to make repairs, alterations or improvements, until such repairs, alterations or improvements shall have been completed, and Landlord shall further have no responsibility or liability for failure to supply elevator facilities, plumbing, ventilation, air conditioning or utility service when prevented from doing so by Force Majeure or, to the extent permitted by Applicable Laws, Landlord's negligence. Without limiting the foregoing, it is expressly understood and agreed that any covenants on Landlord's part to furnish any service pursuant to any of the terms, covenants, conditions, provisions or agreements of this Lease, or to perform any act or thing for the benefit of Tenant, shall not be deemed breached if Landlord is unable to furnish or perform the same by virtue of Force Majeure or, to the extent permitted by Applicable Laws, Landlord's negligence.

16.8. Landlord will connect an existing back-up generator at the Building (the "Building Generator") to the Premises' stand-by electrical panel. Tenant shall be entitled to use up to Tenant's Pro Rata Share of the Building (after deducting any power from the Building Generator required for the Common Area) of power from the Building Generator on a non-exclusive basis with other tenants in the Building; provided, however, that neither the Building Generator, nor the Premises' stand-by electrical panel, shall serve the Manufacturing Area. The cost of maintaining, repairing and replacing the Building Generator shall constitute Operating Expenses. Landlord expressly disclaims any warranties with regard to the Building Generator or the installation thereof, including any warranty of merchantability or fitness for a particular purpose. Landlord shall maintain the Building Generator and any equipment connecting the Building Generator to Tenant's automatic transfer switch in good working condition as set forth above, provided, however, that Tenant shall be solely responsible, at Tenant's sole cost and expense, (and Landlord shall not be liable) for maintaining and operating Tenant's automatic transfer switch and the distribution of power from Tenant's automatic transfer switch throughout the Premises, and provided further that Landlord shall not be liable for any failure to make any repairs or to perform any maintenance of the Building Generator that is an obligation of Landlord unless Tenant provides Landlord with written notice of the need for such repairs or maintenance. Upon receipt of such written notice, Landlord shall promptly commence to cure such failure and shall diligently prosecute the same to completion in accordance with Section 31.12 of this Lease. The provisions of Section 16.2 of this Lease shall apply to the Building Generator.

16.9. For the Premises, Landlord shall (a) subject to Section 18.1, maintain and operate the HVAC systems used for the Permitted Use only and not for uses other than laboratory use and (b) subject to Section 16.2 and Subsection 16.9(a), furnish HVAC as reasonably required (except as this Lease otherwise provides or as to any special requirements that arise from Tenant's particular use of the Premises) for reasonably comfortable occupancy of the Premises twenty-four (24) hours a day, every day during the Term, subject to casualty, eminent domain or as otherwise specified in this Article. To the extent that Tenant requires HVAC services in excess of those provided by connection to the Building HVAC systems, Tenant shall install and maintain, at its sole cost, (and Landlord shall not be liable for) supplemental HVAC systems in accordance with

the provisions of this Lease. Tenant shall pay Landlord, as Additional Rent, Tenant's Adjusted Share of airflow to the Premises. Notwithstanding anything to the contrary in this Section, Landlord shall have no liability, and Tenant shall have no right or remedy, on account of any interruption or impairment in HVAC services; provided that Landlord diligently endeavors to cure any such interruption or impairment.

16.10. For any utilities serving the Premises for which Tenant is billed directly by such utility provider, Tenant agrees to furnish to Landlord (a) any invoices or statements for such utilities within thirty (30) days after Tenant's receipt thereof, (b) within thirty (30) days after Landlord's request, any other utility usage information reasonably requested by Landlord, and (c) within thirty (30) days after each calendar year during the Term, authorization to allow Landlord to access Tenant's usage information necessary for Landlord to complete an ENERGY STAR® Statement of Performance (or similar comprehensive utility usage report (e.g., related to Labs 21), if requested by Landlord) and any other information reasonably requested by Landlord for the immediately preceding year; and Tenant shall comply with any other energy usage or consumption requirements required by Applicable Laws. Tenant shall retain records of utility usage at the Premises, including invoices and statements from the utility provider, for at least sixty (60) months, or such other period of time as may be requested by Landlord. Tenant acknowledges that any utility information for the Premises, the Building and the Project may be shared with third parties, including Landlord's consultants and Governmental Authorities. In the event that Tenant fails to comply with this Section, Tenant hereby authorizes Landlord to collect utility usage information directly from the applicable utility providers, and Tenant shall pay Landlord a fee of Seven Hundred Fifty Dollars ($750) per month to collect such utility usage information. In addition to the foregoing, Tenant shall comply with all Applicable Laws related to the disclosure and tracking of energy consumption at the Premises. The provisions of this Section shall survive the expiration or earlier termination of this Lease.

16.11. The Building is currently serviced by a common laboratory waste sanitary sewer connection from the pH neutralization room in the basement of the Building to the municipal sewer line in the street adjacent to the Building. There currently exists a separate acid neutralization tank (the "Acid Neutralization Tank") that is connected to the Premises, as well as to other premises in the Building. Tenant shall have a non-exclusive right to use up to Tenant's Pro Rata Share of the Building of the Acid Neutralization Tank in accordance with Applicable Laws in common with other tenants of the Building. Tenant, as a portion of its Operating Expenses, shall reimburse Landlord for all costs, charges and expenses incurred by Landlord from time to time in connection with or arising out of the operation, use, maintenance, repair or refurbishment of the Acid Neutralization Tank, including all clean-up costs relating to the Acid Neutralization Tank (collectively, "Tank Costs"); provided, however, that if the Acid Neutralization Tank is being used by other tenant(s) or occupant(s) of the Building at any time during the Term, then, during such time period, Tenant shall only be obligated to pay its Pro Rata Share of the Building of the Tank Costs. Notwithstanding the foregoing, in the event the Acid Neutralization Tank is damaged or repairs to the Acid Neutralization Tank are required as a result of the improper use of the Acid Neutralization Tank by Tenant, Tenant shall be responsible for one hundred percent (100%) of the cost of any repairs or replacement required as a result of such improper use by Tenant, regardless of whether the Acid Neutralization Tank is then being used by other tenant(s) or occupant(s) of the Building; provided, however, that if Tenant reasonably believes that another tenant(s) or occupant(s) in the Building is improperly using the Acid Neutralization Tank, and Landlord, using reasonable efforts, has confirmed such allegation, then Landlord shall equitably apportion the cost of any such repairs or replacements between Tenant and such other tenant(s) or occupant(s). Tenant shall indemnify, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold the Landlord Indemnitees harmless from and against any and all Claims, including (a) diminution in value of the Project or any portion thereof, (b) damages for the loss or restriction on use of rentable or usable space or of any amenity of the Project, (c) damages arising from any adverse impact on marketing of space in the Project or any portion thereof and (d) sums paid in settlement of Claims that arise during or after the Term as a result of Tenant's improper use of the Acid Neutralization Tank.

This indemnification by Tenant includes costs incurred in connection with any investigation of site conditions or any clean-up, remediation, removal or restoration required by any Governmental Authority caused by Tenant's improper use of the Acid Neutralization Tank.

17. Alterations.

17.1. Tenant shall make no alterations, additions or improvements in or to the Premises or engage in any construction, demolition, reconstruction, renovation or other work (whether major or minor) of any kind in, at or serving the Premises ("Alterations") without Landlord's prior written approval, which approval Landlord shall not unreasonably withhold; provided, however, that, in the event any proposed Alteration affects (a) any structural portions of the Building, including exterior walls, the roof, the foundation or slab, foundation or slab systems (including barriers and subslab systems) or the core of the Building, (b) the exterior of the Building or (c) any Building systems, including elevator, plumbing, HVAC, electrical, security, life safety and power, then Landlord may withhold its approval in its sole and absolute discretion. Tenant shall, in making any Alterations, use only those architects, contractors, suppliers and mechanics of which Landlord has given prior written approval, which approval shall be in Landlord's sole and absolute discretion. In seeking Landlord's approval, Tenant shall provide Landlord, at least thirty (30) days in advance of any proposed construction, with plans, specifications, bid proposals, certified stamped engineering drawings and calculations by Tenant's engineer of record or architect of record (including connections to the Building's structural system, modifications to the Building's envelope, non-structural penetrations in slabs or walls, and modifications or tie-ins to life safety systems), work contracts, requests for laydown areas and such other information concerning the nature and cost of the Alterations as Landlord may reasonably request. In no event shall Tenant use or Landlord be required to approve any architects, consultants, contractors, subcontractors or material suppliers that Landlord reasonably believes could cause labor disharmony or may not have sufficient experience, in Landlord's reasonable opinion, to perform work in an occupied Class "A" laboratory research building and in tenant-occupied lab areas. Notwithstanding the foregoing, Tenant may make strictly cosmetic changes to the Premises that do not require any permits or more than three (3) total contractors and subcontractors ("Cosmetic Alterations") without Landlord's consent; provided that (y) the cost of any Cosmetic Alterations does not exceed Fifty Thousand Dollars ($50,000) in any one instance or One Hundred Fifty Thousand Dollars ($150,000) annually, (z) such Cosmetic Alterations do not (i) require any structural or other substantial modifications to the Premises, (ii) require any changes to or adversely affect the Building systems, (iii) affect the exterior of the Building or (iv) trigger any requirement under Applicable Laws that would require Landlord to make any alteration or improvement to the Premises, the Building or the Project. Tenant shall give Landlord at least ten (10) days' prior written notice of any Cosmetic Alterations.

17.2. Tenant shall not construct or permit to be constructed partitions or other obstructions that might interfere with free access to mechanical installation or service facilities of the Building or with other tenants' components located within the Building, or interfere with the moving of Landlord's equipment to or from the enclosures containing such installations or facilities.

17.3. Tenant shall accomplish any work performed on the Premises or the Building in such a manner as to permit any life safety systems to remain fully operable at all times.

17.4. Any work performed on the Premises, the Building or the Project by Tenant or Tenant's contractors shall be done at such times and in such manner as Landlord may from time to time designate. Tenant covenants and agrees that all work done by Tenant or Tenant's contractors shall be performed in full compliance with Applicable Laws. Within thirty (30) days after completion of any Alterations, Tenant shall provide Landlord with complete "as built" drawing print sets and electronic CADD files on disc (or files in such other current format in common use as Landlord reasonably approves or requires) showing any changes in the Premises, as well as a commissioning report prepared by a licensed, qualified commissioning agent hired by

Tenant and approved by Landlord for all new or affected mechanical, electrical and plumbing systems. Any such "as built" plans shall show the applicable Alterations as an overlay on the Building as-built plans; provided that Landlord provides the Building "as built" plans to Tenant.

17.5. Before commencing any Alterations, Tenant shall give Landlord at least thirty (30) days' prior written notice of the proposed commencement of such work and shall, if required by Landlord, secure, at Tenant's own cost and expense, a completion and lien indemnity bond satisfactory to Landlord for such work.

17.6. Tenant shall repair any damage to the Premises caused by Tenant's removal of any property from the Premises. During any such restoration period, Tenant shall pay Rent to Landlord as provided herein as if such space were otherwise occupied by Tenant. The provisions of this Section shall survive the expiration or earlier termination of this Lease.

17.7. The Premises plus any Alterations, Signage, Tenant Improvements, attached equipment, decorations, fixtures, movable laboratory casework and related appliances, trade fixtures, and other additions and improvements attached to or built into the Premises made by either of the parties (including all floor and wall coverings; paneling; sinks and related plumbing fixtures; laboratory benches; exterior venting fume hoods; walk-in freezers and refrigerators; ductwork; conduits; electrical panels and circuits; business and trade fixtures; attached machinery and equipment; and built-in furniture and cabinets, in each case, together with all additions and accessories thereto), shall (unless, prior to such construction or installation, Landlord elects otherwise in writing) at all times remain the property of Landlord, shall remain in the Premises and shall (unless, prior to construction or installation thereof, Landlord elects otherwise in writing) be surrendered to Landlord upon the expiration or earlier termination of this Lease. For the avoidance of doubt, the items listed on Exhibit I attached hereto (which Exhibit I may be updated by Tenant from and after the Term Commencement Date, subject to Landlord's reasonable written consent) constitute Tenant's property and shall be removed by Tenant upon the expiration or earlier termination of the Lease.

17.8. Notwithstanding any other provision of this Article to the contrary, in no event shall Tenant remove any improvement from the Premises as to which landlord contributed payment, including the Tenant Improvements, without Landlord's prior written consent, which consent Landlord may withhold in its sole and absolute discretion.

17.9. If Tenant shall fail to remove any of its property from the Premises prior to the expiration or earlier termination of this Lease, then Landlord may, at its option, remove the same in any manner that Landlord shall choose and store such effects without liability to Tenant for loss thereof or damage thereto, and Tenant shall pay Landlord, upon demand, any costs and expenses incurred due to such removal and storage or Landlord may, at its sole option and without notice to Tenant, sell such property or any portion thereof at private sale and without legal process for such price as Landlord may obtain and apply the proceeds of such sale against any (a) amounts due by Tenant to Landlord under this Lease and (b) any expenses incident to the removal, storage and sale of such personal property.

17.10. Tenant shall pay to Landlord the actual out-of-pocket expenses incurred by Landlord in connection with the project management of any Alterations, including costs incurred for plan review, engineering review, coordination, scheduling and supervision thereof. Tenant shall reimburse Landlord for any extra expenses incurred by Landlord by reason of faulty work done by Tenant or its contractors, or by reason of delays caused by such work, or by reason of inadequate clean-up.

17.11. Within sixty (60) days after final completion of any Alterations performed by Tenant with respect to the Premises, Tenant shall submit to Landlord documentation showing the amounts expended by Tenant with respect to such Alterations, together with supporting documentation reasonably acceptable to Landlord.

17.12. Tenant shall take, and shall cause its contractors to take, commercially reasonable steps to protect the Premises during the performance of any Alterations, including covering or temporarily removing any window coverings so as to guard against dust, debris or damage.

17.13. Tenant shall require its contractors and subcontractors performing work on the Premises to name Landlord and its affiliates and Lenders as additional insureds on their respective insurance policies.

17.14. Notwithstanding anything to the contrary in this Lease, Landlord and Tenant agree that Landlord shall be permitted to withhold its approval (in its sole and absolute discretion) of any Alteration that (a) is inconsistent with the office and lab zones identified on Exhibit A-1 attached hereto, or (b) affects the use or function of any flexible wall and lab bench system within the Premises.

18. Repairs and Maintenance.

18.1. Subject to the limitations set forth in Section 16.9, Landlord shall repair and maintain the structural and exterior portions and Common Area of the Building and the Project, including roofing and covering materials; foundations (excluding any architectural slabs, but including any structural slabs); exterior walls; plumbing; fire sprinkler and life safety systems (if any); base Building HVAC systems up to the first damper or isolation valve that serves the Premises (for purposes of clarity, the portion of the HVAC system that includes such first damper or isolation valve and extends into and through the Premises, and any supplemental HVAC serving the Premises, including but not limited to any supplemental HVAC serving the Vivarium and the Manufacturing Area shall not be part of the base Building HVAC and shall be Tenant's obligation to maintain and repair pursuant to Section 18.2 below); the Acid Neutralization Tank and associated monitoring system; the Base Building Laboratory Support Systems (as defined below); elevators; and base Building electrical systems, in a first class manner comparable to other buildings in Cambridgeport, Cambridge, Massachusetts owned or operated by Landlord or its affiliates that are similar to the Building and operated and used for the same use as the Permitted Use. Further detail of the items that Landlord is responsible for repairing and maintaining are set forth on the Landlord/Tenant Responsibilities Matrix attached as Exhibit D and designated with an "X" under the "Landlord" column.

As used in this Lease, the term "Base Building Laboratory Support System" shall mean each of the following base Building systems: (i) vacuum and compressed air; (ii) purified water and (iii) laboratory waste water treatment, and shall include only the portion of such system that extends to the isolation valve for such system that serves the Premises, but specifically excludes dedicated services to the Manufacturing Area; Tenant hereby agreeing that any such isolation valve and the portion of such system that extends from such isolation valve to and in the Premises and any dedicated services to the Manufacturing Area (a "Premises Laboratory Support System") is not a Base Building Laboratory Support System. To the extent that a Base Building Laboratory Support System does not include an isolation valve that serves the Premises, then only the portion of such system that is located outside of the Premises shall constitute a Base Building Laboratory Support System, and any portion of such system that is located inside the Premises shall be a Premises Laboratory Support System. Tenant shall repair and maintain each Premises Laboratory Support System in accordance with Section 18.2 of this Lease. Further, and with respect to the Base Building Laboratory Support System that is the purified water system for the Building, such system provides only water that has been treated by reverse osmosis, and Landlord makes no representations or warranties with respect to the purity or quality of such water and shall incur no liability whatsoever with respect to the purity, quality or any other condition of such water, and Tenant, at Tenant's sole cost and expense, shall be solely responsible for the purity, quality and condition of the water from such purified water system that Tenant may elect to use in the Premises.

18.2. Except for services of Landlord, if any, required by Section 18.1, Tenant shall at Tenant's sole cost and expense maintain and keep the Premises (including but not limited to each Premises Laboratory Support

System, the portion of the HVAC system that includes such first damper or isolation valve and extends into and through the Premises and any supplemental HVAC serving the Premises, including but not limited to any supplemental HVAC serving Tenant's Vivarium and the Manufacturing Area, and any systems or equipment exclusively serving the Premises, including without limitation any vaporized hydrogen peroxide system serving the Manufacturing Area), and every part thereof in good condition and repair, damage thereto from ordinary wear and tear excepted. Tenant shall, within ten (10) days after receipt of written notice from Landlord, provide to Landlord any maintenance, operating or certification records that Landlord reasonably requests, and to the extent Landlord determines that a third-party expert is necessary to review or evaluate any such records relating to systems serving Tenant's Premises, Tenant shall reimburse Landlord for Landlord's actual out-of-pocket costs and expenses related thereto. Further detail of the items that Tenant is responsible for repairing and maintaining are set forth on the Landlord/Tenant Responsibilities Matrix attached as Exhibit D and designated with an "X" under the "Tenant" column. In addition to the obligations set forth on Exhibit D or elsewhere in this Article 18, Tenant shall be responsible for all other systems and equipment serving the Manufacturing Area, wherever located, including without limitation any vaporized hydrogen peroxide system. Subject to Section 26.2, Tenant shall, upon the expiration or sooner termination of the Term, surrender the Premises to Landlord in as good a condition as existed when the Tenant Improvements are finally completed by Landlord, and with respect to Alterations, in substantially the same condition as existed on the date such Alterations are substantially completed by Tenant, ordinary wear and tear excepted; and shall, at Landlord's request and Tenant's sole cost and expense, remove all telephone and data systems, wiring and equipment from the Premises, and repair any damage to the Premises caused thereby. Landlord shall have no obligation to alter, remodel, improve, repair, decorate or paint the Premises or any part thereof, other than pursuant to the terms and provisions of the Work Letter or Section 4.2.

18.3. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance that is Landlord's obligation pursuant to this Lease unless such failure shall persist for an unreasonable time after Tenant provides Landlord with written notice of the need of such repairs or maintenance. Tenant waives its rights under Applicable Laws now or hereafter in effect to make repairs at Landlord's expense.

18.4. If any excavation shall be made upon land adjacent to or under the Building, or shall be authorized to be made, Tenant shall afford to the person causing or authorized to cause such excavation, license to enter the Premises for the purpose of performing such work as such person shall deem necessary or desirable to preserve and protect the Building from injury or damage and to support the same by proper foundations, without any claim for damages or liability against Landlord and without reducing or otherwise affecting Tenant's obligations under this Lease.

18.5. This Article relates to repairs and maintenance arising in the ordinary course of operation of the Building and the Project. In the event of a casualty described in Article 24, Article 24 shall apply in lieu of this Article. In the event of eminent domain, Article 25 shall apply in lieu of this Article.

18.6. Costs incurred by Landlord pursuant to this Article shall constitute Operating Expenses.

19. Liens.

19.1. Subject to the immediately succeeding sentence, Tenant shall keep the Premises, the Building and the Project free from any liens arising out of work or services performed, materials furnished to or obligations incurred by Tenant. Tenant further covenants and agrees that any mechanic's or materialman's lien filed against the Premises, the Building or the Project for work or services claimed to have been done for, or materials claimed to have been furnished to, or obligations incurred by Tenant shall be discharged or bonded by Tenant within ten (10) days after the filing thereof, at Tenant's sole cost and expense.

19.2. Should Tenant fail to discharge or bond against any lien of the nature described in Section 19.1, Landlord may, at Landlord's election, pay such claim or post a statutory lien bond or otherwise provide security to eliminate the lien as a claim against title, and Tenant shall immediately reimburse Landlord for the costs thereof as Additional Rent. Tenant shall indemnify, compensate, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold the Landlord Indemnitees harmless from and against any Claims arising from any such liens, including any administrative, court or other legal proceedings related to such liens.

19.3. In the event that Tenant leases or finances the acquisition of office equipment, furnishings or other personal property of a removable nature utilized by Tenant in the operation of Tenant's business, Tenant warrants that any Uniform Commercial Code financing statement shall, upon its face or by exhibit thereto, indicate that such financing statement is applicable only to removable personal property of Tenant located within the Premises. In no event shall the address of the Premises, the Building or the Project be furnished on a financing statement without qualifying language as to applicability of the lien only to removable personal property located in an identified suite leased by Tenant. Should any holder of a financing statement record or place of record a financing statement that appears to constitute a lien against any interest of Landlord or against equipment that may be located other than within an identified suite leased by Tenant, Tenant shall, within ten (10) days after filing such financing statement, cause (a) a copy of the lender security agreement or other documents to which the financing statement pertains to be furnished to Landlord to facilitate Landlord's ability to demonstrate that the lien of such financing statement is not applicable to Landlord's interest and (b) Tenant's lender to amend such financing statement and any other documents of record to clarify that any liens imposed thereby are not applicable to any interest of Landlord in the Premises, the Building or the Project.

20. Estoppel Certificate. Tenant shall, within ten (10) days after receipt of written notice from Landlord, execute, acknowledge and deliver a statement in writing substantially in the form attached to this Lease as Exhibit J, or on any other form reasonably requested by a current or proposed Lender or encumbrancer or proposed purchaser, (a) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which rental and other charges are paid in advance, if any, (b) acknowledging that there are not, to Tenant's knowledge, any uncured defaults on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (c) setting forth such further information with respect to this Lease or the Premises as may be requested thereon. Any such statements may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the Property. Tenant's failure to deliver any such statement within such the prescribed time shall, at Landlord's option, constitute a Default (as defined below) under this Lease, and, in any event, shall be binding upon Tenant that the Lease is in full force and effect and without modification except as may be represented by Landlord in any certificate prepared by Landlord and delivered to Tenant for execution.

21. Hazardous Materials.

21.1. Tenant shall not cause or permit any Hazardous Materials (as defined below) to be brought upon, kept or used in or about the Premises, the Building or the Project in violation of Applicable Laws by Tenant or any of its employees, agents, contractors or invitees (collectively with Tenant, each a "Tenant Party"). If (a) Tenant breaches such obligation, (b) the presence of Hazardous Materials as a result of such a breach results in contamination of the Project, any portion thereof, or any adjacent property, (c) contamination of the Premises otherwise occurs during the Term or any extension or renewal hereof or holding over hereunder or (d) contamination of the Project occurs as a result of Hazardous Materials that are placed on or under or are released into the Project by a Tenant Party, then Tenant shall indemnify, compensate, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold the Landlord Indemnitees harmless from and against any and all Claims of any kind or nature, including (w) diminution in value of the Project or any portion thereof, (x) damages for the loss or restriction on use of rentable or usable space or of any

amenity of the Project, (y) damages arising from any adverse impact on marketing of space in the Project or any portion thereof and (z) sums paid in settlement of Claims that arise before, during or after the Term as a result of such breach or contamination. This indemnification and compensation by Tenant includes costs incurred in connection with any investigation of site conditions or any clean-up, remedial, removal or restoration work required by any Governmental Authority because of Hazardous Materials present in the air, soil or groundwater above, on, under or about the Project. Without limiting the foregoing, if the presence of any Hazardous Materials in, on, under or about the Project, any portion thereof or any adjacent property caused or permitted by any Tenant Party results in any contamination of the Project, any portion thereof or any adjacent property, then Tenant shall promptly take all actions at its sole cost and expense as are necessary to return the Project, any portion thereof or any adjacent property to its respective condition existing prior to the time of such contamination; provided that Landlord's written approval of such action shall first be obtained, which approval Landlord shall not unreasonably withhold; and provided, further, that it shall be reasonable for Landlord to withhold its consent if such actions could have a material adverse long-term or short-term effect on the Project, any portion thereof or any adjacent property. Tenant's obligations under this Section shall not be affected, reduced or limited by any limitation on the amount or type of damages, compensation or benefits payable by or for Tenant under workers' compensation acts, disability benefit acts, employee benefit acts or similar legislation.

21.2. Landlord acknowledges that it is not the intent of this Article to prohibit Tenant from operating its business for the Permitted Use. Tenant may operate its business according to the custom of Tenant's industry so long as the use or presence of Hazardous Materials is strictly and properly monitored in accordance with Applicable Laws. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord (a) a list identifying each type of Hazardous Material to be present at the Premises that is subject to regulation under any environmental Applicable Laws, (b) a list of any and all approvals or permits from Governmental Authorities required in connection with the presence of such Hazardous Material at the Premises and (c) correct and complete copies of (i) notices of violations of Applicable Laws related to Hazardous Materials and (ii) plans relating to the installation of any storage tanks to be installed in, on, under or about the Project (provided that installation of storage tanks shall only be permitted after Landlord has given Tenant its written consent to do so, which consent Landlord may withhold in its sole and absolute discretion) and closure plans or any other documents required by any and all Governmental Authorities for any storage tanks installed in, on, under or about the Project for the closure of any such storage tanks (collectively, "Hazardous Materials Documents"). Tenant shall deliver to Landlord updated Hazardous Materials Documents, within fourteen (14) days after receipt of a written request therefor from Landlord, not more often than once per year, unless (m) there are any changes to the Hazardous Materials Documents or (n) Tenant initiates any Alterations or changes its business, in either case in a way that involves any material increase in the types or amounts of Hazardous Materials. For each type of Hazardous Material listed, the Hazardous Materials Documents shall include (t) the chemical name, (u) the material state (e.g., solid, liquid, gas or cryogen), (v) the concentration, (w) the storage amount and storage condition (e.g., in cabinets or not in cabinets), (x) the use amount and use condition (e.g., open use or closed use), (y) the location (e.g., room number or other identification) and (z) if known, the chemical abstract service number. Notwithstanding anything in this Section to the contrary, Tenant shall not be required to provide Landlord with any Hazardous Materials Documents containing information of a proprietary nature, which Hazardous Materials Documents, in and of themselves, do not contain a reference to any Hazardous Materials or activities related to Hazardous Materials. Landlord may, at Landlord's expense, cause the Hazardous Materials Documents to be reviewed by a person or firm qualified to analyze Hazardous Materials to confirm compliance with the provisions of this Lease and with Applicable Laws. In the event that a review of the Hazardous Materials Documents indicates non-compliance with this Lease or Applicable Laws, Tenant shall, at its expense, diligently take steps to bring its storage and use of Hazardous Materials into compliance. Notwithstanding anything in this Lease to the contrary or Landlord's review into Tenant's Hazardous Materials Documents or use or disposal of hazardous materials,

however, Landlord shall not have and expressly disclaims any liability related to Tenant's or other tenants' use or disposal of Hazardous Materials, it being acknowledged by Tenant that Tenant is best suited to evaluate the safety and efficacy of its Hazardous Materials usage and procedures.

21.3. Tenant represents and warrants to Landlord that it is not nor has it been, in connection with the use, disposal or storage of Hazardous Materials, (a) subject to a material enforcement order issued by any Governmental Authority or (b) required to take any remedial action.

21.4. Upon at least two (2) business days prior written notice to Tenant (unless Landlord reasonably believes testing must be completed sooner), prior to the expiration of the Term Landlord shall have the right to conduct appropriate tests of the Project or any portion thereof to demonstrate that Hazardous Materials are present or that contamination has occurred due to the acts or omissions of a Tenant Party. Tenant shall pay all reasonable costs of such tests if such tests reveal that Hazardous Materials exist at the Project in violation of this Lease.

21.5. If underground or other storage tanks storing Hazardous Materials installed or utilized by Tenant are located on the Premises, or are hereafter placed on the Premises by Tenant (or by any other party, if such storage tanks are utilized by Tenant), then Tenant shall monitor the storage tanks, maintain appropriate records, implement reporting procedures, properly close any underground storage tanks, and take or cause to be taken all other steps necessary or required under the Applicable Laws. Tenant shall have no responsibility or liability for underground or other storage tanks installed by anyone other than Tenant unless Tenant utilizes such tanks, in which case Tenant's responsibility for such tanks shall be as set forth in this Section.

21.6. Tenant shall promptly report to Landlord any actual or suspected presence of mold or water intrusion at the Premises.

21.7. Tenant's obligations under this Article shall survive the expiration or earlier termination of the Lease. During any period of time needed by Tenant or Landlord after the termination of this Lease to complete the removal from the Premises of any such Hazardous Materials, Tenant shall be deemed a holdover tenant and subject to the provisions of Article 27.

21.8. As used herein, the term "Hazardous Material" means any toxic, explosive, corrosive, flammable, infectious, radioactive, carcinogenic, mutagenic or otherwise hazardous substance, material or waste that is or becomes regulated by Applicable Laws or any Governmental Authority.

21.9. Notwithstanding anything to the contrary in this Lease, Landlord shall have sole control over the equitable allocation of fire control areas (as defined in the Uniform Building Code as adopted by the city or municipality(ies) in which the Project is located (the "UBC")) within the Project for the storage of Hazardous Materials. Notwithstanding anything to the contrary in this Lease, the quantity of Hazardous Materials allowed by this Section 21.9 is specific to Tenant and shall not run with the Lease in the event of a Transfer (as defined in Article 29). Tenant shall have the exclusive license to use the control area depicted on Exhibit A attached to this Lease and designated as "Control Area 3" and the non-exclusive license to use the control areas depicted on Exhibit A and designated as "Control Area 1" and "Control Area 4" thereon (collectively, the "Control Areas"), and Tenant's use of such Control Areas shall be subject to any limitations set forth thereon. The license granted by Landlord in the immediately foregoing sentence is revocable by Landlord for any reason or no reason, in Landlord's sole and absolute discretion, provided, however, if Landlord revokes said license, then it will provide to Tenant another control area(s) in the Building in accordance with Tenant's Pro Rata Share of the Building. In the event of a Transfer, if the use of Hazardous Materials by such new tenant ("New Tenant") is such that New Tenant utilizes fire control areas in excess of New Tenant's Pro Rata Share of the Building, then New Tenant shall, at its sole cost and expense and upon Landlord's written request, establish and maintain a

separate area of the Premises classified by the UBC as an "H" occupancy area for the use and storage of Hazardous Materials, or take such other action as is necessary to ensure that its share of the fire control areas of the Building is not greater than New Tenant's Pro Rata Share of the Building. Notwithstanding anything in this Lease to the contrary, Landlord shall not have and expressly disclaims any liability related to Tenant's or other tenants' use or disposal of fire control areas, it being acknowledged by Tenant that Tenant and other tenants are best suited to evaluate the safety and efficacy of its Hazardous Materials usage and procedures.

22. Odors and Exhaust**.** Tenant acknowledges that Landlord would not enter into this Lease with Tenant unless Tenant assured Landlord that under no circumstances will any other occupants of the Building or the Project (including persons legally present in any outdoor areas of the Project) be subjected to odors or fumes (whether or not noxious), and that the Building and the Project will not be damaged by any exhaust, in each case from Tenant's operations, including in Tenant's Vivarium and in the Manufacturing Area. Landlord and Tenant therefore agree as follows:

22.1. Tenant shall not cause or permit (or conduct any activities that would cause) any release of any odors or fumes of any kind from the Premises.

22.2. If the Building has a ventilation system that, in Landlord's judgment, is adequate, suitable, and appropriate to vent the Premises in a manner that does not release odors affecting any indoor or outdoor part of the Project, Tenant shall vent the Premises through such system. If Landlord at any time determines that any existing ventilation system is inadequate, or if no ventilation system exists, Tenant shall in compliance with Applicable Laws vent all fumes and odors from the Premises (and remove odors from Tenant's exhaust stream) as Landlord requires. The placement and configuration of all ventilation exhaust pipes, louvers and other equipment shall be subject to Landlord's approval. Tenant acknowledges Landlord's legitimate desire to maintain the Project (indoor and outdoor areas) in an odor-free manner, and Landlord may require Tenant to abate and remove all odors in a manner that goes beyond the requirements of Applicable Laws.

22.3. Tenant shall, at Tenant's sole cost and expense, provide odor eliminators and other devices (such as filters, air cleaners, scrubbers and whatever other equipment may in Landlord's judgment be necessary or appropriate from time to time) to completely remove, eliminate and abate any odors, fumes or other substances in Tenant's exhaust stream that, in Landlord's judgment, emanate from Tenant's Premises. Any work Tenant performs under this Section shall constitute Alterations.

22.4. Tenant's responsibility to remove, eliminate and abate odors, fumes and exhaust shall continue throughout the Term. Landlord's construction of the Tenant Improvements shall not preclude Landlord from requiring additional measures to eliminate odors, fumes and other adverse impacts of Tenant's exhaust stream (as Landlord may designate in Landlord's discretion). Tenant shall install additional equipment as Landlord requires from time to time under the preceding sentence. Such installations shall constitute Alterations.

22.5. If Tenant fails to install satisfactory odor control equipment within ten (10) business days after Landlord's demand made at any time, then Landlord may, without limiting Landlord's other rights and remedies, require Tenant to cease and suspend any operations in the Premises that, in Landlord's determination, cause odors, fumes or exhaust. For example, if Landlord determines that Tenant's production of a certain type of product causes odors, fumes or exhaust, and Tenant does not install satisfactory odor control equipment within ten (10) business days after Landlord's request, then Landlord may require Tenant to stop producing such type of product in the Premises unless and until Tenant has installed odor control equipment satisfactory to Landlord.

23. Insurance; Waivers of Subrogation.

23.1. Landlord shall maintain insurance for the Building and the Project in amounts equal to full replacement cost (exclusive of the costs of excavation, foundations and footings, engineering costs or such other costs to the extent the same are not incurred in the event of a rebuild and without reference to depreciation taken by Landlord upon its books or tax returns) or such lesser coverage as Landlord may elect, provided that such coverage shall not be less than the amount of such insurance Landlord's Lender, if any, requires Landlord to maintain, providing protection against any peril generally included within the classification "Fire and Extended Coverage," together with insurance against sprinkler damage (if applicable), vandalism and malicious mischief. Landlord, subject to availability thereof, shall further insure, if Landlord deems it appropriate, coverage against flood, environmental hazard, earthquake, loss or failure of building equipment, rental loss during the period of repairs or rebuilding, Workers' Compensation insurance and fidelity bonds for employees employed to perform services. Notwithstanding the foregoing, Landlord may, but shall not be deemed required to, provide insurance for any improvements installed by Tenant or that are in addition to the standard improvements customarily furnished by Landlord, without regard to whether or not such are made a part of or are affixed to the Building.

23.2. In addition, Landlord shall carry Commercial General Liability insurance with limits of not less than One Million Dollars ($1,000,000) per occurrence/general aggregate for bodily injury (including death), or property damage with respect to the Project.

23.3. Tenant shall, at its own cost and expense, procure and maintain during the Term the following insurance for the benefit of Tenant and Landlord (as their interests may appear) with insurers financially acceptable and lawfully authorized to do business in the state where the Premises are located:

(a) Commercial General Liability insurance on a broad-based occurrence coverage form, with coverages including but not limited to bodily injury (including death), property damage (including loss of use resulting therefrom), premises/operations, personal & advertising injury, and contractual liability with limits of liability of not less than $2,000,000 for bodily injury and property damage per occurrence, $2,000,000 general aggregate, which limits may be met by use of excess and/or umbrella liability insurance provided that such coverage is at least as broad as the primary coverages required herein.

(b) Commercial Automobile Liability insurance covering liability arising from the use or operation of any auto, including those owned, hired or otherwise operated or used by or on behalf of the Tenant. The coverage shall be on a broad-based occurrence form with combined single limits of not less than $1,000,000 per accident for bodily injury and property damage.

(c) Commercial Property insurance covering property damage to the full replacement cost value and business interruption. Covered property shall include all tenant improvements in the Premises (to the extent not insured by Landlord pursuant to Section 23.1) and Tenant's Property including personal property, furniture, fixtures, machinery, equipment, stock, inventory and improvements and betterments, which may be owned by Tenant or Landlord and required to be insured hereunder, or which may be leased, rented, borrowed or in the care custody or control of Tenant, or Tenant's agents, employees or subcontractors. Such insurance, with respect only to all Alterations or other work performed on the Premises by Tenant (collectively, "Tenant Work"), shall name Landlord and Landlord's current and future mortgagees as loss payees as their interests may appear. Such insurance shall be written on an "all risk" of physical loss or damage basis including the perils of fire, extended coverage, electrical injury, mechanical breakdown, windstorm, vandalism, malicious mischief, sprinkler leakage, back-up of sewers or drains, flood, terrorism and such other risks Landlord may from time to time designate, for the full replacement cost value of the covered items with an agreed amount endorsement with no co-insurance. Business interruption coverage shall have limits sufficient to cover Tenant's lost profits

and necessary continuing expenses, including rents due Landlord under the Lease. The minimum period of indemnity for business interruption coverage shall be twelve (12) months.

(d) Workers' Compensation insurance as is required by statute or law, or as may be available on a voluntary basis and Employers' Liability insurance with limits of not less than the following: each accident, Five Hundred Thousand Dollars ($500,000); disease ($500,000); disease (each employee), Five Hundred Thousand Dollars ($500,000).

(e) Pollution Legal Liability insurance is required if Tenant stores, handles, generates or treats Hazardous Materials, as determined solely by Landlord, on or about the Premises. Such coverage shall include bodily injury, sickness, disease, death or mental anguish or shock sustained by any person; property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, clean-up costs, and the loss of use of tangible property that has not been physically injured or destroyed; and defense costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages. Coverage shall apply to both sudden and non-sudden pollution conditions including the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water. Claims-made coverage is permitted, provided the policy retroactive date is continuously maintained prior to the commencement date of this agreement, and coverage is continuously maintained during all periods in which Tenant occupies the Premises. Coverage shall be maintained with limits of not less than $1,000,000 per incident with a $2,000,000 policy aggregate and for a period of two (2) years thereafter.

(f) During all construction by Tenant at the Premises, with respect to tenant improvements being constructed (including any Alterations, insurance required in Exhibit B-5 must be in place.

The insurance required of Tenant by this Article shall be with companies at all times having a current rating of not less than A- and financial category rating of at least Class VII in "A.M. Best's Insurance Guide" current edition. Tenant shall obtain for Landlord from the insurance companies/broker or cause the insurance companies/broker to furnish certificates of insurance evidencing all coverages required herein to Landlord. Landlord reserves the right to require complete, certified copies of all required insurance policies including any endorsements. No such policy shall be cancelable or subject to reduction of coverage or other modification or cancellation except after twenty (20) days' prior written notice to Landlord from Tenant or its insurers (except in the event of non-payment of premium, in which case ten (10) days' written notice shall be given). All such policies shall be written as primary policies, not contributing with and not in excess of the coverage that Landlord may carry. Tenant's required policies shall contain severability of interests clauses stating that, except with respect to limits of insurance, coverage shall apply separately to each insured or additional insured. Tenant shall, prior to the expiration of such policies, furnish Landlord with renewal certificates of insurance or binders. Tenant agrees that if Tenant does not take out and maintain such insurance, Landlord may (but shall not be required to) procure such insurance on Tenant's behalf and at its cost to be paid by Tenant as Additional Rent. Commercial General Liability, Commercial Automobile Liability, and Umbrella Liability and Pollution Legal Liability insurance as required above shall name Landlord, BioMed Realty, L.P., and BioMed Realty Trust, Inc., and their respective officers, employees, agents, general partners, members, subsidiaries, affiliates and Lenders ("Landlord Parties") as additional insureds as respects liability arising from work or operations performed by or on behalf of Tenant, Tenant's use or occupancy of Premises, and ownership, maintenance or use of vehicles by or on behalf of Tenant.

23.4. In each instance where insurance is to name Landlord Parties as additional insureds, Tenant shall, upon Landlord's written request, also designate and furnish certificates evidencing such Landlord Parties as additional insureds to (a) any Lender of Landlord holding a security interest in the Building or the Project, (b)

the landlord under any lease whereunder Landlord is a tenant of the real property upon which the Building is located if the interest of Landlord is or shall become that of a tenant under a ground lease rather than that of a fee owner and (c) any management company retained by Landlord to manage the Project.

23.5. Tenant assumes the risk of damage to any fixtures, goods, inventory, merchandise, equipment and leasehold improvements, and Landlord shall not be liable for injury to Tenant's business or any loss of income therefrom, relative to such damage, all as more particularly set forth within this Lease. Tenant shall, at Tenant's sole cost and expense, carry such insurance as Tenant desires for Tenant's protection with respect to personal property of Tenant or business interruption.

23.6. Each party and its insurers hereby waive any and all rights of recovery or subrogation against the other party (and Tenant and its insurers hereby waive any and all rights of recovery or subrogation against the Landlord Parties) with respect to any loss, damage, claims, suits or demands, howsoever caused, that are covered, or should have been covered, by valid and collectible insurance, including any deductibles or self-insurance maintained thereunder. If necessary, the parties agree to endorse the required insurance policies to permit waivers of subrogation as required hereunder and hold harmless and indemnify each other (and the Landlord Parties) for any loss or expense incurred as a result of a failure to obtain such waivers of subrogation from insurers.

23.7. Landlord may require insurance policy limits required under this Lease to be raised to conform with requirements of Landlord's Lender or to bring coverage limits to levels then being required of new tenants within the Project.

23.8. Any costs incurred by Landlord pursuant to this Article shall constitute a portion of Operating Expenses.

23.9. The provisions of this Section shall survive the expiration or earlier termination of this Lease.

24. Damage or Destruction.

24.1. In the event of a partial destruction of (a) the Premises or (b) Common Area of the Building or the Project ((a) and (b) together, the "Affected Areas") by fire or other perils covered by extended coverage insurance not exceeding twenty-five percent (25%) of the full insurable value thereof, and provided that (x) the damage thereto is such that the Affected Areas may be repaired, reconstructed or restored within a period of six (6) months from the date of the happening of such casualty, (y) Landlord shall receive insurance proceeds sufficient to cover the cost of such repairs, reconstruction and restoration (except for any deductible amount provided by Landlord's policy, which deductible amount, if paid by Landlord, shall constitute an Operating Expense) and (z) such casualty was not intentionally caused by a Tenant Party, then Landlord shall commence and proceed diligently with the work of repair, reconstruction and restoration of the Affected Areas and this Lease shall continue in full force and effect.

24.2. In the event of any damage to or destruction of the Building or the Project other than as described in Section 24.1, Landlord may elect to repair, reconstruct and restore the Building or the Project, as applicable, in which case this Lease shall continue in full force and effect. If Landlord elects not to repair, reconstruct and restore the Building or the Project, as applicable, then this Lease shall terminate as of the date of such damage or destruction. In the event of any damage or destruction (regardless of whether such damage is governed by Section 24.1 or this Section), if (a) in Landlord's determination as set forth in the Damage Repair Estimate (as defined below), the Affected Areas cannot be repaired, reconstructed or restored within twelve (12) months after the date of the Damage Repair Estimate, (b) subject to Section 24.6, the Affected Areas are not actually repaired, reconstructed and restored within eighteen (18) months after the date of the Damage Repair Estimate,

or (c) the damage and destruction occurs within the last twelve (12) months of the then-current Term, then Tenant shall have the right to terminate this Lease, effective as of the date of such damage or destruction, by delivering to Landlord its written notice of termination (a "Termination Notice") (y) with respect to Subsections 24.2(a) and (c), no later than thirty (30) days after Landlord delivers to Tenant Landlord's Damage Repair Estimate and (z) with respect to Subsection 24.2(b), no later than thirty (30) days after such eighteen (18) month period (as the same may be extended pursuant to Section 24.6) expires. If Tenant provides Landlord with a Termination Notice pursuant to Subsection 24.2(z), Landlord shall have an additional thirty (30) days after receipt of such Termination Notice to complete the repair, reconstruction and restoration. If Landlord does not complete such repair, reconstruction and restoration within such thirty (30) day period, then Tenant may terminate this Lease by giving Landlord written notice within two (2) business days after the expiration of such thirty (30) day period. If Landlord does complete such repair, reconstruction and restoration within such thirty (30) day period, then this Lease shall continue in full force and effect.

24.3. As soon as reasonably practicable, but in any event within sixty (60) days following the date of damage or destruction, Landlord shall notify Tenant of Landlord's good faith estimate of the period of time in which the repairs, reconstruction and restoration will be completed (the "Damage Repair Estimate"), which estimate shall be based upon the opinion of a contractor reasonably selected by Landlord and experienced in comparable repair, reconstruction and restoration of similar buildings. Additionally, Landlord shall give written notice to Tenant within sixty (60) days following the date of damage or destruction of its election not to repair, reconstruct or restore the Building or the Project, as applicable.

24.4. Upon any termination of this Lease under any of the provisions of this Article, the parties shall be released thereby without further obligation to the other from the date possession of the Premises is surrendered to Landlord, except with regard to (a) items occurring prior to the damage or destruction and (b) provisions of this Lease that, by their express terms, survive the expiration or earlier termination hereof.

24.5. In the event of repair, reconstruction and restoration as provided in this Article, all Rent to be paid by Tenant under this Lease shall be abated proportionately based on the extent to which Tenant's use of the Premises is impaired during the period of such repair, reconstruction or restoration, unless Landlord provides Tenant with other space during the period of repair, reconstruction and restoration that, in Tenant's reasonable opinion, is suitable for the temporary conduct of Tenant's business; provided, however, that the amount of such abatement shall be reduced by the amount of Rent that is received by Tenant as part of the business interruption or loss of rental income with respect to the Premises from the proceeds of business interruption or loss of rental income insurance.

24.6. Notwithstanding anything to the contrary contained in this Article, should Landlord be delayed or prevented from completing the repair, reconstruction or restoration of the damage or destruction to the Premises after the occurrence of such damage or destruction by Force Majeure or delays caused by a Tenant Party, then the time for Landlord to commence or complete repairs, reconstruction and restoration shall be extended on a day-for-day basis; provided, however, that, at Landlord's election, Landlord shall be relieved of its obligation to make such repairs, reconstruction and restoration.

24.7. If Landlord is obligated to or elects to repair, reconstruct or restore as herein provided, then Landlord shall be obligated to make such repairs, reconstruction or restoration only with regard to (a) those portions of the Premises that were originally provided at Landlord's expense and (b) the Common Area portion of the Affected Areas. The repairs, reconstruction or restoration of improvements not originally provided by Landlord or at Landlord's expense shall be the obligation of Tenant. In the event Tenant has elected to upgrade certain improvements from the Building Standard, Landlord shall, upon the need for replacement due to an insured loss, provide only the Building Standard, unless Tenant again elects to upgrade such improvements and pay any incremental costs related thereto, except to the extent that excess insurance proceeds, if received, are

adequate to provide such upgrades, in addition to providing for basic repairs, reconstruction and restoration of the Premises, the Building and the Project.

24.8. Notwithstanding anything to the contrary contained in this Article, Landlord shall not have any obligation whatsoever to repair, reconstruct or restore the Premises if the damage resulting from any casualty covered under this Article occurs during the last twenty-four (24) months of the Term or any extension thereof, or to the extent that insurance proceeds are not available therefor.

24.9. Landlord's obligation, should it elect or be obligated to repair, reconstruct or restore, shall be limited to the Affected Areas. Tenant shall, at its expense, replace or fully repair all of Tenant's personal property and any Alterations installed by Tenant existing at the time of such damage or destruction. If Affected Areas are to be repaired, reconstructed or restored in accordance with the foregoing, Landlord shall make available to Tenant any portion of insurance proceeds it receives that are allocable to the Alterations constructed by Tenant pursuant to this Lease; provided Tenant is not then in default under this Lease, and subject to the requirements of any Lender of Landlord.

25. Eminent Domain**.**

25.1. In the event (a) the whole of all Affected Areas or (b) such part thereof as shall substantially interfere with Tenant's use and occupancy of the Premises for the Permitted Use shall be taken for any public or quasi-public purpose by any lawful power or authority by exercise of the right of appropriation, condemnation or eminent domain, or sold to prevent such taking, Tenant or Landlord may terminate this Lease effective as of the date possession is required to be surrendered to such authority, except with regard to (y) items occurring prior to the taking and (z) provisions of this Lease that, by their express terms, survive the expiration or earlier termination hereof.

25.2. In the event of a partial taking of (a) the Building or the Project or (b) drives, walkways or parking areas serving the Building or the Project for any public or quasi-public purpose by any lawful power or authority by exercise of right of appropriation, condemnation, or eminent domain, or sold to prevent such taking, then, without regard to whether any portion of the Premises occupied by Tenant was so taken, Landlord may elect to terminate this Lease (except with regard to (y) items occurring prior to the taking and (z) provisions of this Lease that, by their express terms, survive the expiration or earlier termination hereof) as of such taking if such taking is, in Landlord's sole opinion, of a material nature such as to make it uneconomical to continue use of the unappropriated portion for purposes of renting office or laboratory space.

25.3. Tenant shall be entitled to any award that is specifically awarded as compensation for (a) the taking of Tenant's personal property that was installed at Tenant's expense and (b) the costs of Tenant moving to a new location. Except as set forth in the previous sentence, any award for such taking shall be the property of Landlord.

25.4. If, upon any taking of the nature described in this Article, this Lease continues in effect, then Landlord shall promptly proceed to restore the Affected Areas to substantially their same condition prior to such partial taking. To the extent such restoration is infeasible, as determined by Landlord in its sole and absolute discretion, the Rent shall be decreased proportionately to reflect the loss of any portion of the Premises no longer available to Tenant.

25.5. This Article sets forth the terms and conditions upon which this Lease may terminate in the event of any damage or destruction. Accordingly, the parties hereby waive the provisions of any Applicable Laws (and any successor statutes) permitting the parties to terminate this Lease as a result of any damage or destruction.

26. Surrender.

26.1. At least thirty (30) days prior to Tenant's surrender of possession of any part of the Premises, Tenant shall provide Landlord with a facility decommissioning and Hazardous Materials closure plan for the Premises ("Exit Survey") prepared by an independent third party state-certified professional with appropriate expertise, which Exit Survey must be reasonably acceptable to Landlord. The Exit Survey shall comply with the American National Standards Institute's Laboratory Decommissioning guidelines (ANSI/AIHA Z9.11-2008) or any successor standards published by ANSI or any successor organization (or, if ANSI and its successors no longer exist, a similar entity publishing similar standards). In addition, at least ten (10) days prior to Tenant's surrender of possession of any part of the Premises, Tenant shall (a) provide Landlord with written evidence of all appropriate governmental releases obtained by Tenant in accordance with Applicable Laws, including laws pertaining to the surrender of the Premises, (b) place Laboratory Equipment Decontamination Forms on all decommissioned equipment to assure safe occupancy by future users and (c) conduct a site inspection with Landlord. In addition, Tenant agrees to remain responsible after the surrender of the Premises for the remediation of any recognized environmental conditions set forth in the Exit Survey and comply with any recommendations set forth in the Exit Survey. Tenant's obligations under this Section shall survive the expiration or earlier termination of the Lease.

26.2. Notwithstanding anything in this Lease to the contrary, Landlord, upon at least six (6) months' written notice to Tenant prior to the Term Expiration Date (as it may be extended in accordance with Article 42 hereof), may require that Tenant, at Tenant's sole cost and expense, yield up and surrender the Manufacturing Area to Landlord in the condition set forth in Exhibit K attached hereto. Tenant's obligations under this Section 26.2 include the obligation to remove any equipment that serves the Manufacturing Area and located elsewhere in the Building (including without limitation the basement area and Rooftop Installation Area (as hereinafter defined)) that Landlord, in such 6-months' notice to Tenant or in a separate notice to Tenant given at least six (6) months prior to the Term Expiration Date (as it may be extended in accordance with Article 42 hereof) instructs Tenant to remove notwithstanding any contrary language in Section 17.7 hereof that may require that Landlord notify Tenant of such removal obligations at an earlier time.

26.3. No surrender of possession of any part of the Premises shall release Tenant from any of its obligations hereunder, unless such surrender is accepted in writing by Landlord.

26.4. The voluntary or other surrender of this Lease by Tenant shall not effect a merger with Landlord's fee title or leasehold interest in the Premises, the Building, the Property or the Project, unless Landlord consents in writing, and shall, at Landlord's option, operate as an assignment to Landlord of any or all subleases.

26.5. The voluntary or other surrender of any ground or other underlying lease that now exists or may hereafter be executed affecting the Building or the Project, or a mutual cancellation thereof or of Landlord's interest therein by Landlord and its lessor shall not effect a merger with Landlord's fee title or leasehold interest in the Premises, the Building or the Property and shall, at the option of the successor to Landlord's interest in the Building or the Project, as applicable, operate as an assignment of this Lease.

27. Holding Over.

27.1. If, with Landlord's prior written consent, Tenant holds possession of all or any part of the Premises after the Term, Tenant shall become a tenant from month to month after the expiration or earlier termination of the Term, and in such case Tenant shall continue to pay (a) Base Rent in accordance with Article 7, as adjusted in accordance with Article 8, and (b) any amounts for which Tenant would otherwise be liable under this Lease if the Lease were still in effect, including payments for Tenant's Adjusted Share of Operating Expenses. Any such month-to-month tenancy shall be subject to every other term, covenant and agreement contained herein.

27.2. Notwithstanding the foregoing, if Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without Landlord's prior written consent, (a) Tenant shall become a tenant at sufferance subject to the terms and conditions of this Lease, except that the monthly rent shall be equal to one hundred fifty percent (150%) of the Rent in effect during the last thirty (30) days of the Term, and (b) if such holdover persists for more than thirty (30) days after the earlier of (i) the expiration or earlier termination of the Term and (ii) the date Landlord notifies Tenant that Landlord has procured a tenant that is ready, willing and able to sign a lease for the Premises (or portion thereof), Tenant shall be liable to Landlord for any and all damages suffered by Landlord as a result of such holdover, including any lost rent or consequential, special and indirect damages (in each case, regardless of whether such damages are foreseeable).

27.3. Acceptance by Landlord of Rent after the expiration or earlier termination of the Term shall not result in an extension, renewal or reinstatement of this Lease.

27.4. The foregoing provisions of this Article are in addition to and do not affect Landlord's right of reentry or any other rights of Landlord hereunder or as otherwise provided by Applicable Laws.

27.5. The provisions of this Article shall survive the expiration or earlier termination of this Lease.

28. Indemnification and Exculpation**.**

28.1. Tenant agrees to indemnify, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold the Landlord Indemnitees harmless from and against any and all Claims arising from injury to or death of any person or damage to any property occurring within or about the Premises, the Building, the Property or the Project, arising directly or indirectly out of (a) the presence at or use or occupancy of the Premises or Project by a Tenant Party, (b) an act or omission on the part of any Tenant Party, (c) a breach or default by Tenant in the performance of any of its obligations hereunder or (d) injury to or death of persons or damage to or loss of any property, real or alleged, arising from the serving of alcoholic beverages at the Premises or Project, including liability under any dram shop law, host liquor law or similar Applicable Law, except to the extent directly caused by Landlord's negligence or willful misconduct. Tenant's obligations under this Section shall not be affected, reduced or limited by any limitation on the amount or type of damages, compensation or benefits payable by or for Tenant under workers' compensation acts, disability benefit acts, employee benefit acts or similar legislation. Tenant's obligations under this Section shall survive the expiration or earlier termination of this Lease. Subject to Sections 23.6, 28.2 and 31.12 and any subrogation provisions contained in the Work Letter, Landlord agrees to indemnify, save, defend (at Tenant's option and with counsel reasonably acceptable to Tenant) and hold the Tenant Parties harmless from and against any and all Claims arising from injury to or death of any person or damage to or loss of any physical property occurring within or about the Premises, the Building, the Property or the Project to the extent directly arising out of Landlord's gross negligence or willful misconduct.

28.2. Notwithstanding anything in this Lease to the contrary, Landlord shall not be liable to Tenant for and Tenant assumes all risk of (a) damage or losses caused by fire, electrical malfunction, gas explosion or water damage of any type (including broken water lines, malfunctioning fire sprinkler systems, roof leaks or stoppages of lines), unless any such loss is due to Landlord's willful disregard of written notice by Tenant of need for a repair that Landlord is responsible to make for an unreasonable period of time, and (b) damage to personal property or scientific research, including loss of records kept by Tenant within the Premises (in each case, regardless of whether such damages are foreseeable). Tenant further waives any claim for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property as described in this Section. Notwithstanding anything in the foregoing or this Lease to the contrary, except (x) as otherwise provided herein (including Section 27.2), (y) as may be provided by Applicable Laws or (z) in the event of Tenant's breach of Article 21 or Section 26.1, in no event shall Landlord or Tenant be liable to the

other for any consequential, special or indirect damages arising out of this Lease, including lost profits (provided that this Subsection 28.2 shall not limit Tenant's liability for Base Rent or Additional Rent pursuant to this Lease).

28.3. Landlord shall not be liable for any damages arising from any act, omission or neglect of any other tenant in the Building or the Project, or of any other third party.

28.4. Tenant acknowledges that security devices and services, if any, while intended to deter crime, may not in given instances prevent theft or other criminal acts. Landlord shall not be liable for injuries or losses caused by criminal acts of third parties, and Tenant assumes the risk that any security device or service may malfunction or otherwise be circumvented by a criminal. If Tenant desires protection against such criminal acts, then Tenant shall, at Tenant's sole cost and expense, obtain appropriate insurance coverage. Tenant's security programs and equipment for the Premises shall be coordinated with Landlord and subject to Landlord's reasonable approval.

28.5. The provisions of this Article shall survive the expiration or earlier termination of this Lease.

29. Assignment or Subletting

29.1. Except as hereinafter expressly permitted, none of the following (each, a "Transfer"), either voluntarily or by operation of Applicable Laws, shall be directly or indirectly performed without Landlord's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed: (a) Tenant selling, hypothecating, assigning, pledging, encumbering or otherwise transferring this Lease or subletting the Premises or (b) a controlling interest in Tenant being sold, assigned or otherwise transferred (other than as a result of shares in Tenant being sold on a public stock exchange). For purposes of the preceding sentence, "control" means (a) owning (directly or indirectly) more than fifty percent (50%) of the stock or other equity interests of another person or (b) possessing, directly or indirectly, the power to direct or cause the direction of the management and policies of such person. Notwithstanding the foregoing, Tenant shall have the right to Transfer, without Landlord's prior written consent, Tenant's interest in this Lease or the Premises or any part thereof to (i) any person that as of the date of determination and at all times thereafter directly, or indirectly through one or more intermediaries, controls, is controlled by or is under common control with Tenant ("Tenant's Affiliate"), (ii) any person or any entity with which Tenant is merged or to which all or substantially all of Tenant's assets or all or substantially all of the ownership interests in Tenant are sold, including in connection with a tender offer that is consummated or (iii) any person that is an entity funded or sponsored by Flagship Ventures if such Transfer involves no more than 20,000 rentable square feet of the Premises; provided that (in each instance under the foregoing clauses (i), (ii) and (iii)); Tenant shall notify Landlord in writing at least ten (10) business days prior to the effectiveness of such Transfer (an "Exempt Transfer") and otherwise comply with the requirements of this Lease regarding such Transfer; and provided, further, that the person that will be the tenant under this Lease after an Exempt Transfer pursuant to clause (ii) above has a net worth (as of both the day immediately prior to and the day immediately after the Exempt Transfer) that is equal to or greater than the net worth (as of both the Execution Date and the date of the Exempt Transfer) of the transferring Tenant. For purposes of the immediately preceding sentence, "control" requires both (a) owning (directly or indirectly) more than fifty percent (50%) of the stock or other equity interests of another person and (b) possessing, directly or indirectly, the power to direct or cause the direction of the management and policies of such person. In no event shall Tenant perform a Transfer to or with an entity that is a tenant at the Project or the properties at 21 or 40 Erie Street in Cambridge, Massachusetts or an entity that is in active discussions with Landlord or an affiliate of Landlord to lease premises at the Project or the properties at 21 or 40 Erie Street in Cambridge, Massachusetts. As used in the immediately foregoing sentence the term "active discussions" shall mean a proposed transaction in which either Landlord or such entity (or their respective broker) has submitted in writing to the other (or to the other's broker) the material terms of a proposed lease transaction.

Notwithstanding anything in this Lease to the contrary, if (a) any proposed transferee, assignee or sublessee of Tenant has been required by any prior landlord, Lender or Governmental Authority to take material remedial action in connection with Hazardous Materials contaminating a property if the contamination resulted from such party's action or omission or use of the property in question or (b) any proposed transferee, assignee or sublessee is subject to a material enforcement order issued by any Governmental Authority in connection with the use, disposal or storage of Hazardous Materials, then it shall not be unreasonable for Landlord to withhold its consent to any proposed transfer, assignment or subletting (with respect to any such matter involving a proposed transferee, assignee or sublessee); provided, however, that the foregoing shall not apply if the Transfer is an Exempt Transfer pursuant to clause (ii) of this Section 29.1.

29.2. In the event Tenant desires to effect a Transfer, except for an Exempt Transfer, then, at least thirty (30) days, but not more than nine (9) months, prior to the date when Tenant desires the Transfer to be effective (the "Transfer Date"), Tenant shall provide written notice to Landlord (the "Transfer Notice") containing information (including references) concerning the character of the proposed transferee, assignee or sublessee; the Transfer Date; the most recent unconsolidated financial statements of Tenant and of the proposed transferee, assignee or sublessee satisfying the requirements of Section 40.2 ("Required Financials"); any ownership or commercial relationship between Tenant and the proposed transferee, assignee or sublessee; and the consideration and all other material terms and conditions of the proposed Transfer, all in such detail as Landlord shall reasonably require.

29.3. Landlord, in determining whether consent should be given to a proposed Transfer, may give consideration to (a) the financial strength of Tenant and of such transferee, assignee or sublessee (notwithstanding Tenant remaining liable for Tenant's performance), (b) any change in use that such transferee, assignee or sublessee proposes to make in the use of the Premises and (c) Landlord's desire to exercise its rights under Section 29.7 to cancel this Lease. In no event shall Landlord be deemed to be unreasonable for declining to consent to a Transfer to a transferee, assignee or sublessee of poor reputation, lacking financial qualifications or seeking a change in the Permitted Use, or jeopardizing directly or indirectly the status of Landlord or any of Landlord's affiliates as a Real Estate Investment Trust under the Internal Revenue Code of 1986 (as the same may be amended from time to time, the "Revenue Code"). Notwithstanding anything contained in this Lease to the contrary, (w) no Transfer shall be consummated on any basis such that the rental or other amounts to be paid by the occupant, assignee, manager or other transferee thereunder would be based, in whole or in part, on the income or profits derived by the business activities of such occupant, assignee, manager or other transferee; (x) Tenant shall not furnish or render any services to an occupant, assignee, manager or other transferee with respect to whom transfer consideration is required to be paid, or manage or operate the Premises or any capital additions so transferred, with respect to which transfer consideration is being paid; (y) Tenant shall not consummate a Transfer with any person in which Landlord owns an interest, directly or indirectly (by applying constructive ownership rules set forth in Section 856(d)(5) of the Revenue Code); and (z) Tenant shall not consummate a Transfer with any person or in any manner that could cause any portion of the amounts received by Landlord pursuant to this Lease or any sublease, license or other arrangement for the right to use, occupy or possess any portion of the Premises to fail to qualify as "rents from real property" within the meaning of Section 856(d) of the Revenue Code, or any similar or successor provision thereto or which could cause any other income of Landlord to fail to qualify as income described in Section 856(c)(2) of the Revenue Code.

29.4. The following are conditions precedent to a Transfer or to Landlord considering a request by Tenant to a Transfer:

(a) Tenant shall remain fully liable under this Lease. Tenant agrees that it shall not be (and shall not be deemed to be) a guarantor or surety of this Lease, however, and waives its right to claim that is it is a guarantor or surety or to raise in any legal proceeding any guarantor or surety defenses permitted by this Lease or by Applicable Laws;

(b) If Tenant or the proposed transferee, assignee or sublessee does not or cannot deliver the Required Financials, then Landlord may elect to have either Tenant's ultimate parent company or the proposed transferee's, assignee's or sublessee's ultimate parent company provide a guaranty of the applicable entity's obligations under this Lease, in a form acceptable to Landlord, which guaranty shall be executed and delivered to Landlord by the applicable guarantor prior to the Transfer Date;

(c) In the case of an Exempt Transfer, Tenant shall provide Landlord with evidence reasonably satisfactory to Landlord that the Transfer qualifies as an Exempt Transfer;

(d) [Intentionally omitted];

(e) Tenant shall reimburse Landlord for Landlord's actual costs and expenses, including reasonable attorneys' fees, charges and disbursements incurred in connection with the review, processing and documentation of such request not to exceed $2,500.00;

(f) Except with respect to an Exempt Transfer, if Tenant's transfer of rights or sharing of the Premises provides for the receipt by, on behalf of or on account of Tenant of any consideration of any kind whatsoever (including a premium rental for a sublease or lump sum payment for an assignment, but excluding Tenant's reasonable costs in marketing and subleasing the Premises) in excess of the rental and other charges due to Landlord under this Lease, Tenant shall pay fifty percent (50%) of all of such excess to Landlord, after making deductions for any reasonable marketing expenses, tenant improvement funds expended by Tenant, alterations, cash concessions, brokerage commissions, attorneys' fees and free rent actually paid by Tenant. If such consideration consists of cash paid to Tenant, payment to Landlord shall be made upon receipt by Tenant of such cash payment;

(g) The proposed transferee, assignee or sublessee shall agree that, in the event Landlord gives such proposed transferee, assignee or sublessee notice that Tenant is in default under this Lease, such proposed transferee, assignee or sublessee shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments shall be received by Landlord without any liability being incurred by Landlord, except to credit such payment against those due by Tenant under this Lease, and any such proposed transferee, assignee or sublessee shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, that in no event shall Landlord or its Lenders, successors or assigns be obligated to accept such attornment;

(h) Landlord's consent to any such Transfer shall be effected on Landlord's forms;

(i) Tenant shall not then be in default hereunder in any respect;

(j) Such proposed transferee, assignee or sublessee's use of the Premises shall be the same as the Permitted Use;

(k) Landlord shall not be bound by any provision of any agreement pertaining to the Transfer, except for Landlord's written consent to the same;

(l) Tenant shall pay all transfer and other taxes (including interest and penalties) assessed or payable for any Transfer;

(m) Landlord's consent (or waiver of its rights) for any Transfer shall not waive Landlord's right to consent or refuse consent to any later Transfer;

(n) Tenant shall deliver to Landlord one executed copy of any and all written instruments evidencing or relating to the Transfer; and

(o) Tenant shall deliver to Landlord a list of Hazardous Materials (as defined below), certified by the proposed transferee, assignee or sublessee to be true and correct, that the proposed transferee, assignee or sublessee intends to use or store in the Premises. Additionally, Tenant shall deliver to Landlord, on or before the date any proposed transferee, assignee or sublessee takes occupancy of the Premises, all of the items relating to Hazardous Materials of such proposed transferee, assignee or sublessee as described in Section 21.2.

29.5. Any Transfer that is not in compliance with the provisions of this Article or with respect to which Tenant does not fulfill its obligations pursuant to this Article shall be void and shall, at the option of Landlord, terminate this Lease.

29.6. Notwithstanding any Transfer, Tenant shall remain fully and primarily liable for the payment of all Rent and other sums due or to become due hereunder, and for the full performance of all other terms, conditions and covenants to be kept and performed by Tenant. The acceptance of Rent or any other sum due hereunder, or the acceptance of performance of any other term, covenant or condition thereof, from any person or entity other than Tenant shall not be deemed a waiver of any of the provisions of this Lease or a consent to any Transfer.

29.7. If Tenant delivers to Landlord a Transfer Notice indicating a desire to (a) assign this Lease to a proposed transferee (excluding any assignment constituting an Exempt Transfer), or (b) enter into a sublease or license agreement that would, in the aggregate with all other then-current subleases and licenses, cause more than fifty percent (50%) of the Rentable Area of the Premises to be licensed or subleased (excluding any subleases and licenses that constitute Exempt Transfers), then Landlord shall have the option, exercisable by giving notice to Tenant at any time within ten (10) days after Landlord's receipt of such Transfer Notice, to terminate this Lease as of the date specified in the Transfer Notice as the Transfer Date, except for those provisions that, by their express terms, survive the expiration or earlier termination hereof. If Landlord exercises such option, then Tenant shall have the right to withdraw such Transfer Notice by delivering to Landlord written notice of such election within five (5) days after Landlord's delivery of notice electing to exercise Landlord's option to terminate this Lease. In the event Tenant withdraws the Transfer Notice as provided in this Section, this Lease shall continue in full force and effect. No failure of Landlord to exercise its option to terminate this Lease shall be deemed to be Landlord's consent to a proposed Transfer.

29.8. If Tenant sublets the Premises or any portion thereof, Tenant hereby immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any such subletting, and Landlord (or a receiver for Tenant appointed on Landlord's application) may collect such rent and apply it toward Tenant's obligations under this Lease; provided that, until the occurrence of a Default (as defined below) by Tenant, Tenant shall have the right to collect such rent. Upon the occurrence of a Default, and without limiting the enforceability and validity of the other provisions of this Section 29.8, Landlord may require Tenant to appoint Landlord as assignee and attorney-in-fact for Tenant to collect such rent.

30. Subordination and Attornment**.**

30.1. This Lease shall be subject and subordinate to the lien of any mortgage, deed of trust, or lease in which Landlord is tenant now or hereafter in force against the Building or the Project and to all advances made or hereafter to be made upon the security thereof without the necessity of the execution and delivery of any further instruments on the part of Tenant to effectuate such subordination.

30.2. Notwithstanding the foregoing, Tenant shall execute and deliver upon demand such further instrument or instruments evidencing such subordination of this Lease to the lien of any such mortgage or

mortgages or deeds of trust or lease in which Landlord is tenant as may be required by Landlord. If any such mortgagee, beneficiary or landlord under a lease wherein Landlord is tenant (each, a "Mortgagee") so elects, however, this Lease shall be deemed prior in lien to any such lease, mortgage, or deed of trust upon or including the Premises regardless of date and Tenant shall execute a statement in writing to such effect at Landlord's request. If Tenant fails to execute any document required from Tenant under this Section within ten (10) days after written request therefor, Tenant hereby constitutes and appoints Landlord or its special attorney-in-fact to execute and deliver any such document or documents in the name of Tenant. Such power is coupled with an interest and is irrevocable. For the avoidance of doubt, "Mortgagees" shall also include historic tax credit investors and new market tax credit investors.

30.3. Upon written request of Landlord and opportunity for Tenant to review, Tenant agrees to execute any Lease amendments not materially altering the terms of this Lease, if required by a Mortgagee incident to the financing of the real property of which the Premises constitute a part.

30.4. In the event any proceedings are brought for foreclosure, or in the event of the exercise of the power of sale under any mortgage or deed of trust made by Landlord covering the Premises, Tenant shall at the election of the purchaser at such foreclosure or sale attorn to the purchaser upon any such foreclosure or sale and recognize such purchaser as Landlord under this Lease.

31. Defaults and Remedies**.**

31.1. Late payment by Tenant to Landlord of Rent and other sums due shall cause Landlord to incur costs not contemplated by this Lease, the exact amount of which shall be extremely difficult and impracticable to ascertain. Such costs include processing and accounting charges and late charges that may be imposed on Landlord by the terms of any mortgage or trust deed covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within three (3) days after the date such payment is due, Tenant shall pay to Landlord (a) an additional sum of six percent (6%) of the overdue Rent as a late charge plus (b) interest at an annual rate (the "Default Rate") equal to the lesser of (a) twelve percent (12%) and (b) the highest rate permitted by Applicable Laws. The parties agree that this late charge represents a fair and reasonable estimate of the costs that Landlord shall incur by reason of late payment by Tenant and shall be payable as Additional Rent to Landlord due with the next installment of Rent or within five (5) business days after Landlord's demand, whichever is earlier. Landlord's acceptance of any Additional Rent (including a late charge or any other amount hereunder) shall not be deemed an extension of the date that Rent is due or prevent Landlord from pursuing any other rights or remedies under this Lease, at law or in equity.

31.2. No payment by Tenant or receipt by Landlord of a lesser amount than the Rent payment herein stipulated shall be deemed to be other than on account of the Rent, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as Rent be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or pursue any other remedy provided in this Lease or in equity or at law. If a dispute shall arise as to any amount or sum of money to be paid by Tenant to Landlord hereunder, Tenant shall have the right to make payment "under protest," such payment shall not be regarded as a voluntary payment, and there shall survive the right on the part of Tenant to institute suit for recovery of the payment paid under protest.

31.3. If Tenant fails to pay any sum of money required to be paid by it hereunder or perform any other act on its part to be performed hereunder, in each case within the applicable cure period (if any) described in Section 31.4, then Landlord may (but shall not be obligated to), without waiving or releasing Tenant from any obligations of Tenant, make such payment or perform such act; provided that such failure by Tenant unreasonably interfered with the use of the Building or the Project by any other tenant or with the efficient operation of the Building or the Project, or resulted or could have resulted in a violation of Applicable Laws or

the cancellation of an insurance policy maintained by Landlord. Notwithstanding the foregoing, in the event of an emergency, Landlord shall have the right to enter the Premises and act in accordance with its rights as provided elsewhere in this Lease. In addition to the late charge described in Section 31.1, Tenant shall pay to Landlord as Additional Rent all sums so paid or incurred by Landlord, together with interest at the Default Rate, computed from the date such sums were paid or incurred.

31.4. The occurrence of any one or more of the following events shall constitute a "Default" hereunder by Tenant:

(a) Tenant abandons or vacates the Premises;

(b) Tenant fails to make any payment of Rent, as and when due, or to satisfy its obligations under Article 19, where such failure shall continue for a period of three (3) business days after written notice thereof from Landlord to Tenant;

(c) Tenant fails to observe or perform any obligation or covenant contained herein (other than described in Sections 31.4(a) and 31.4(b)) to be performed by Tenant, where such failure continues for a period of thirty (30) days after written notice thereof from Landlord to Tenant; provided that, if the nature of Tenant's default is such that it reasonably requires more than thirty (30) days to cure, Tenant shall not be deemed to be in Default if Tenant commences such cure within such thirty (30) day period and thereafter diligently prosecutes the same to completion; and provided, further, that such cure is completed no later than thirty (30) days after Tenant's receipt of written notice from Landlord;

(d) Tenant makes an assignment for the benefit of creditors;

(e) A receiver, trustee or custodian is appointed to or does take title, possession or control of all or substantially all of Tenant's assets;

(f) Tenant files a voluntary petition under the United States Bankruptcy Code or any successor statute (as the same may be amended from time to time, the "Bankruptcy Code") or an order for relief is entered against Tenant pursuant to a voluntary or involuntary proceeding commenced under any chapter of the Bankruptcy Code;

(g) Any involuntary petition is filed against Tenant under any chapter of the Bankruptcy Code and is not dismissed within one hundred twenty (120) days;

(h) Tenant fails to deliver an estoppel certificate in accordance with Article 20; or

(i) Tenant's interest in this Lease is attached, executed upon or otherwise judicially seized and such action is not released within one hundred twenty (120) days of the action.

Notices given under this Section shall specify the alleged default and shall demand that Tenant perform the provisions of this Lease or pay the Rent that is in arrears, as the case may be, within the applicable period of time, or quit the Premises. No such notice shall be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice.

31.5. In the event of a Default by Tenant, and at any time thereafter, with or without notice or demand and without limiting Landlord in the exercise of any right or remedy that Landlord may have, Landlord has the right to do any or all of the following:

(a) Halt any Tenant Improvements or Landlord's Work and Alterations and order Tenant's contractors, subcontractors, consultants, designers and material suppliers to stop work;

(b) Terminate Tenant's right to possession of the Premises by written notice to Tenant or by any lawful means, in which case Tenant shall immediately surrender possession of the Premises to Landlord. In such event, Landlord shall have the immediate right to re-enter and remove all persons and property, and such property may be removed and stored in a public warehouse or elsewhere at the cost and for the account of Tenant, all without service of notice or resort to legal process and without being deemed guilty of trespass or becoming liable for any loss or damage that may be occasioned thereby; and

(i) Terminate this Lease, in which event Tenant shall immediately surrender possession of the Premises to Landlord. In such event, Landlord shall have the immediate right to re-enter and remove all persons and property, and such property may be removed and stored in a public warehouse or elsewhere at the cost and for the account of Tenant, all without service of notice or resort to legal process and without being deemed guilty of trespass or becoming liable for any loss or damage that may be occasioned thereby. In the event that Landlord shall elect to so terminate this Lease, then Landlord shall be entitled to recover from Tenant all damages incurred by Landlord by reason of Tenant's default, including the sum of:

(A) The worth at the time of award of any unpaid Rent that had accrued at the time of such termination; plus

(B) The costs of restoring the Premises to the condition required under the terms of this Lease; plus

(C) An amount (the "Election Amount") equal to either (A) the positive difference (if any, and measured at the time of such termination) between (1) the then-present value of the total Rent and other benefits that would have accrued to Landlord under this Lease for the remainder of the Term if Tenant had fully complied with the Lease minus (2) the then-present cash rental value of the Premises as determined by Landlord for what would be the then-unexpired Term if the Lease remained in effect, computed using the discount rate of the Federal Reserve Bank of San Francisco at the time of the award plus one (1) percentage point (the "Discount Rate") or (B) twelve (12) months (or such lesser number of months as may then be remaining in the Term) of Base Rent and Additional Rent at the rate last payable by Tenant pursuant to this Lease, in either case as Landlord specifies in such election. Landlord and Tenant agree that the Election Amount represents a reasonable forecast of the minimum damages expected to occur in the event of a breach, taking into account the uncertainty, time and cost of determining elements relevant to actual damages, such as fair market rent, time and costs that may be required to re-lease the Premises, and other factors; and that the Election Amount is not a penalty.

As used in Section 31.5(c)(i), "worth at the time of award" shall be computed by allowing interest at the Default Rate.

31.6. In addition to any other remedies available to Landlord at law or in equity and under this Lease, Landlord may continue this Lease in effect after Tenant's Default or abandonment and recover Rent as it becomes due. In addition, Landlord shall not be liable in any way whatsoever for its failure or refusal to relet the Premises. For purposes of this Section, the following acts by Landlord will not constitute the termination of Tenant's right to possession of the Premises:

(a) Acts of maintenance or preservation or efforts to relet the Premises, including alterations, remodeling, redecorating, repairs, replacements or painting as Landlord shall consider advisable for the purpose of reletting the Premises or any part thereof; or

(b) The appointment of a receiver upon the initiative of Landlord to protect Landlord's interest under this Lease or in the Premises.

Notwithstanding the foregoing, in the event of a Default by Tenant, Landlord may elect at any time to terminate this Lease and to recover damages to which Landlord is entitled.

31.7. If Landlord does not elect to terminate this Lease as provided in Section 31.5, then Landlord may, from time to time, recover all Rent as it becomes due under this Lease. At any time thereafter, Landlord may elect to terminate this Lease and to recover damages to which Landlord is entitled.

31.8. In the event Landlord elects to terminate this Lease and relet the Premises, Landlord may execute any new lease in its own name. Tenant hereunder shall have no right or authority whatsoever to collect any Rent from such tenant. The proceeds of any such reletting shall be applied as follows:

(a) First, to the payment of any indebtedness other than Rent due hereunder from Tenant to Landlord, including storage charges or brokerage commissions owing from Tenant to Landlord as the result of such reletting;

(b) Second, to the payment of the costs and expenses of reletting the Premises, including (i) alterations and repairs that Landlord deems reasonably necessary and advisable and (ii) reasonable attorneys' fees, charges and disbursements incurred by Landlord in connection with the retaking of the Premises and such reletting;

(c) Third, to the payment of Rent and other charges due and unpaid hereunder; and

(d) Fourth, to the payment of future Rent and other damages payable by Tenant under this Lease.

31.9. All of Landlord's rights, options and remedies hereunder shall be construed and held to be nonexclusive and cumulative. Landlord shall have the right to pursue any one or all of such remedies, or any other remedy or relief that may be provided by Applicable Laws, whether or not stated in this Lease. No waiver of any default of Tenant hereunder shall be implied from any acceptance by Landlord of any Rent or other payments due hereunder or any omission by Landlord to take any action on account of such default if such default persists or is repeated, and no express waiver shall affect defaults other than as specified in such waiver. Notwithstanding any provision of this Lease to the contrary, in no event shall Landlord be required to mitigate its damages with respect to any default by Tenant. Any obligation imposed by Applicable Law upon Landlord to relet the Premises after any termination of this Lease shall be subject to the reasonable requirements of Landlord to (a) lease to high quality tenants on such terms as Landlord may from time to time deem appropriate in its discretion and (b) develop the Project in a harmonious manner with a mix of uses, tenants, floor areas, terms of tenancies, etc., as determined by Landlord. Landlord shall not be obligated to relet the Premises to (y) any Tenant's Affiliate or (z) any party (i) unacceptable to a Lender, (ii) that requires Landlord to make

improvements to or re-demise the Premises, (iii) that desires to change the Permitted Use, (iv) that desires to lease the Premises for more or less than the remaining Term or (v) to whom Landlord or an affiliate of Landlord may desire to lease other available space in the Project or at another property owned by Landlord or an affiliate of Landlord.

31.10. Landlord's termination of (a) this Lease or (b) Tenant's right to possession of the Premises shall not relieve Tenant of any liability to Landlord that has previously accrued or that shall arise based upon events that occurred prior to the later to occur of (y) the date of Lease termination and (z) the date Tenant surrenders possession of the Premises.

31.11. To the extent permitted by Applicable Laws, Tenant waives any and all rights of redemption granted by or under any present or future Applicable Laws if Tenant is evicted or dispossessed for any cause, or if Landlord obtains possession of the Premises due to Tenant's default hereunder or otherwise.

31.12. Landlord shall not be in default or liable for damages under this Lease unless Landlord fails to perform obligations required of Landlord within a reasonable time, but in no event shall such failure continue for more than thirty (30) days after written notice from Tenant specifying the nature of Landlord's failure; provided, however, that if the nature of Landlord's obligation is such that more than thirty (30) days are required for its performance, then Landlord shall not be in default if Landlord commences performance within such thirty (30) day period and thereafter diligently prosecutes the same to completion. In no event shall Tenant have the right to terminate or cancel this Lease or to withhold or abate rent or to set off any Claims against Rent as a result of any default or breach by Landlord of any of its covenants, obligations, representations, warranties or promises hereunder, except as may otherwise be expressly set forth in this Lease.

31.13. In the event of any default by Landlord, Tenant shall give notice by registered or certified mail to any (a) beneficiary of a deed of trust or (b) mortgagee under a mortgage covering the Premises, the Building or the Project and to any landlord of any lease of land upon or within which the Premises, the Building or the Project is located, and shall offer such beneficiary, mortgagee or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Building or the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided that Landlord shall furnish to Tenant in writing, upon written request by Tenant, the names and addresses of all such persons who are to receive such notices.

32. Bankruptcy. In the event a debtor, trustee or debtor in possession under the Bankruptcy Code, or another person with similar rights, duties and powers under any other Applicable Laws, proposes to cure any default under this Lease or to assume or assign this Lease and is obliged to provide adequate assurance to Landlord that (a) a default shall be cured, (b) Landlord shall be compensated for its damages arising from any breach of this Lease and (c) future performance of Tenant's obligations under this Lease shall occur, then such adequate assurances shall include any or all of the following, as designated by Landlord in its sole and absolute discretion:

32.1. Those acts specified in the Bankruptcy Code or other Applicable Laws as included within the meaning of "adequate assurance," even if this Lease does not concern a shopping center or other facility described in such Applicable Laws;

32.2. A prompt cash payment to compensate Landlord for any monetary defaults or actual damages arising directly from a breach of this Lease;

32.3. A cash deposit in an amount at least equal to the then-current amount of the Security Deposit; or

32.4. The assumption or assignment of all of Tenant's interest and obligations under this Lease.

33. Brokers**.**

33.1. Tenant represents and warrants that it has had no dealings with any real estate broker or agent in connection with the negotiation of this Lease other than Transwestern | RBJ, Inc. and Cushman and Wakefield of Massachusetts, Inc. (collectively, "Broker"), and that it knows of no other real estate broker or agent that is or might be entitled to a commission in connection with this Lease. Landlord shall compensate Broker in relation to this Lease pursuant to a separate agreement between Landlord and Broker.

33.2. Tenant represents and warrants that no broker or agent has made any representation or warranty relied upon by Tenant in Tenant's decision to enter into this Lease, other than as contained in this Lease.

33.3. Tenant acknowledges and agrees that the employment of brokers by Landlord is for the purpose of solicitation of offers of leases from prospective tenants and that no authority is granted to any broker to furnish any representation (written or oral) or warranty from Landlord unless expressly contained within this Lease. Landlord is executing this Lease in reliance upon Tenant's representations, warranties and agreements contained within Sections 33.1 and 33.2.

33.4. Tenant agrees to indemnify, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord) and hold the Landlord Indemnitees harmless from any and all cost or liability for compensation claimed by any broker or agent, other than Broker, employed or engaged by Tenant or claiming to have been employed or engaged by Tenant.

34. Definition of Landlord. With regard to obligations imposed upon Landlord pursuant to this Lease, the term "Landlord," as used in this Lease, shall refer only to Landlord or Landlord's then-current successor-in-interest. In the event of any transfer, assignment or conveyance of Landlord's interest in this Lease or in Landlord's fee title to or leasehold interest in the Property, as applicable, Landlord herein named (and in case of any subsequent transfers or conveyances, the subsequent Landlord) shall be automatically freed and relieved, from and after the date of such transfer, assignment or conveyance, from all liability for the performance of any covenants or obligations contained in this Lease thereafter to be performed by Landlord and, without further agreement, the transferee, assignee or conveyee of Landlord's in this Lease or in Landlord's fee title to or leasehold interest in the Property, as applicable, shall be deemed to have assumed and agreed to observe and perform any and all covenants and obligations of Landlord hereunder during the tenure of its interest in the Lease or the Property. Landlord or any subsequent Landlord may transfer its interest in the Premises or this Lease without Tenant's consent.

35. Limitation of Landlord's Liability**.**

35.1. If Landlord is in default under this Lease and, as a consequence, Tenant recovers a monetary judgment against Landlord, the judgment shall be satisfied only out of (a) the proceeds of sale received on execution of the judgment and levy against the right, title and interest of Landlord in the Building and the Project, (b) rent or other income from such real property receivable by Landlord or (c) the consideration received by Landlord from the sale, financing, refinancing or other disposition of all or any part of Landlord's right, title or interest in the Building or the Project.

35.2. Neither Landlord nor any of its affiliates, nor any of their respective partners, shareholders, directors, officers, employees, members or agents shall be personally liable for Landlord's obligations or any deficiency under this Lease, and service of process shall not be made against any shareholder, director, officer, employee or agent of Landlord or any of Landlord's affiliates. No partner, shareholder, director, officer, employee, member or agent of Landlord or any of its affiliates shall be sued or named as a party in any suit or action, and service of process shall not be made against any partner or member of Landlord except as may be

necessary to secure jurisdiction of the partnership, joint venture or limited liability company, as applicable. No partner, shareholder, director, officer, employee, member or agent of Landlord or any of its affiliates shall be required to answer or otherwise plead to any service of process, and no judgment shall be taken or writ of execution levied against any partner, shareholder, director, officer, employee, member or agent of Landlord or any of its affiliates.

35.3. Each of the covenants and agreements of this Article shall be applicable to any covenant or agreement either expressly contained in this Lease or imposed by Applicable Laws and shall survive the expiration or earlier termination of this Lease.

36. Joint and Several Obligations. If more than one person or entity executes this Lease as Tenant, then:

36.1. Each of them is jointly and severally liable for the keeping, observing and performing of all of the terms, covenants, conditions, provisions and agreements of this Lease to be kept, observed or performed by Tenant, and such terms, covenants, conditions, provisions and agreements shall be binding with the same force and effect upon each and all of the persons executing this Agreement as Tenant; and

36.2. The term "Tenant," as used in this Lease, shall mean and include each of them, jointly and severally. The act of, notice from, notice to, refund to, or signature of any one or more of them with respect to the tenancy under this Lease, including any renewal, extension, expiration, termination or modification of this Lease, shall be binding upon each and all of the persons executing this Lease as Tenant with the same force and effect as if each and all of them had so acted, so given or received such notice or refund, or so signed.

37. Representations. Tenant guarantees, warrants and represents that (a) Tenant is duly incorporated or otherwise established or formed and validly existing under the laws of its state of incorporation, establishment or formation, (b) Tenant has and is duly qualified to do business in the state in which the Property is located, (c) Tenant has full corporate, partnership, trust, association or other appropriate power and authority to enter into this Lease and to perform all Tenant's obligations hereunder, (d) each person (and all of the persons if more than one signs) signing this Lease on behalf of Tenant is duly and validly authorized to do so and (e) neither (i) the execution, delivery or performance of this Lease nor (ii) the consummation of the transactions contemplated hereby will violate or conflict with any provision of documents or instruments under which Tenant is constituted or to which Tenant is a party. In addition, Tenant guarantees, warrants and represents that none of (x) it, (y) its affiliates or partners nor (z) to the best of its knowledge, its members, shareholders or other equity owners or any of their respective employees, officers, directors, representatives or agents is a person or entity with whom U.S. persons or entities are restricted from doing business under regulations of the Office of Foreign Asset Control ("OFAC") of the Department of the Treasury (including those named on OFAC's Specially Designated and Blocked Persons List) or under any statute, executive order (including the September 24, 2001, Executive Order Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism) or other similar governmental action.

38. Confidentiality. Tenant shall keep the terms and conditions of this Lease and any information provided to Tenant or its employees, agents or contractors pursuant to Article 9 confidential and shall not (a) disclose to any third party any terms or conditions of this Lease or any other Lease-related document (including subleases, assignments, work letters, construction contracts, letters of credit, subordination agreements, non-disturbance agreements, brokerage agreements or estoppels) or (b) provide to any third party an original or copy of this Lease (or any Lease-related document). Landlord shall not release to any third party any non-public financial information or non-public information about Tenant's ownership structure that Tenant gives Landlord. Notwithstanding the foregoing, confidential information under this Section may be released by Landlord or Tenant under the following circumstances: (x) if required by Applicable Laws or in any judicial proceeding; provided that the releasing party has given the other party reasonable notice of such requirement, if feasible, (y)

to a party's attorneys, accountants, brokers and other bona fide consultants or advisers (with respect to this Lease only); provided such third parties agree to be bound by this Section or (z) to bona fide prospective assignees or subtenants of this Lease; provided they agree in writing to be bound by this Section.

39. Notices. Except as otherwise stated in this Lease, any notice, consent, demand, invoice, statement or other communication required or permitted to be given hereunder shall be in writing and shall be given by (a) personal delivery, (b) overnight delivery with a reputable international overnight delivery service, such as FedEx, or (c) facsimile or email transmission, so long as such transmission is followed within one (1) business day by delivery utilizing one of the methods described in Subsection 39(a) or (b). Any such notice, consent, demand, invoice, statement or other communication shall be deemed delivered (x) upon receipt, if given in accordance with Subsection 39(a); (y) one (1) business day after deposit with a reputable international overnight delivery service, if given if given in accordance with Subsection 39(b); or (z) upon transmission, if given in accordance with Subsection 39(c). Except as otherwise stated in this Lease, any notice, consent, demand, invoice, statement or other communication required or permitted to be given pursuant to this Lease shall be addressed to Tenant at the Premises, or to Landlord or Tenant at the addresses shown in Sections 2.9 and 2.10 or 2.11, respectively. Either party may, by notice to the other given pursuant to this Section, specify additional or different addresses for notice purposes.

40. Miscellaneous.

40.1. Landlord reserves the right to change the name of the Building or the Project in its sole discretion.

40.2. To induce Landlord to enter into this Lease, Tenant agrees that it shall promptly furnish to Landlord, from time to time, upon Landlord's written request, the most recent year-end unconsolidated financial statements reflecting Tenant's current financial condition audited by a nationally recognized accounting firm. Tenant shall, within ninety (90) days after the end of Tenant's financial year, furnish Landlord with a certified copy of Tenant's year-end unconsolidated financial statements for the previous year audited by a nationally recognized accounting firm. Tenant represents and warrants that all financial statements, records and information furnished by Tenant to Landlord in connection with this Lease are true, correct and complete in all respects. If audited financials are not otherwise prepared, unaudited financials complying with generally accepted accounting principles and certified by the chief financial officer of Tenant as true, correct and complete in all respects shall suffice for purposes of this Section. The provisions of this Section shall not apply at any time while Tenant is a corporation whose shares are traded on any nationally recognized stock exchange.

40.3. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or option for a lease, and shall not be effective as a lease or otherwise until execution by and delivery to both Landlord and Tenant.

40.4. The terms of this Lease are intended by the parties as a final, complete and exclusive expression of their agreement with respect to the terms that are included herein, and may not be contradicted or supplemented by evidence of any other prior or contemporaneous agreement.

40.5. Upon the request of either Landlord or Tenant, the parties shall execute a document in recordable form containing only such information as is necessary to constitute a Notice of Lease under Massachusetts law. All costs of preparing and recording such notice shall be borne by the requesting party. Simultaneously with the execution of any Notice of Lease as provided above, Tenant shall executed a recordable termination of such Notice of Lease (the "Termination Notice"), which Termination Notice shall be held in escrow by Landlord and may be released from escrow and recorded by Landlord after the expiration or earlier termination of this Lease. Neither party shall record this Lease.

40.6. Where applicable in this Lease, the singular includes the plural and the masculine or neuter includes the masculine, feminine and neuter. The words “include,” “includes,” “included” and “including” mean “‘include,’ etc., without limitation.” The word “shall” is mandatory and the word “may” is permissive. The section headings of this Lease are not a part of this Lease and shall have no effect upon the construction or interpretation of any part of this Lease. Landlord and Tenant have each participated in the drafting and negotiation of this Lease, and the language in all parts of this Lease shall be in all cases construed as a whole according to its fair meaning and not strictly for or against either Landlord or Tenant.

40.7. Except as otherwise expressly set forth in this Lease, each party shall pay its own costs and expenses incurred in connection with this Lease and such party’s performance under this Lease; provided that, if either party commences an action, proceeding, demand, claim, action, cause of action or suit against the other party arising out of or in connection with this Lease, then the substantially prevailing party shall be reimbursed by the other party for all reasonable costs and expenses, including reasonable attorneys’ fees and expenses, incurred by the substantially prevailing party in such action, proceeding, demand, claim, action, cause of action or suit, and in any appeal in connection therewith (regardless of whether the applicable action, proceeding, demand, claim, action, cause of action, suit or appeal is voluntarily withdrawn or dismissed).

40.8. Time is of the essence with respect to the performance of every provision of this Lease.

40.9. Each provision of this Lease performable by Tenant shall be deemed both a covenant and a condition.

40.10. Notwithstanding anything to the contrary contained in this Lease, Tenant’s obligations under this Lease are independent and shall not be conditioned upon performance by Landlord.

40.11. Whenever consent or approval of either party is required, that party shall not unreasonably withhold, condition or delay such consent or approval, except as may be expressly set forth to the contrary.

40.12. Any provision of this Lease that shall prove to be invalid, void or illegal shall in no way affect, impair or invalidate any other provision hereof, and all other provisions of this Lease shall remain in full force and effect and shall be interpreted as if the invalid, void or illegal provision did not exist.

40.13. Each of the covenants, conditions and agreements herein contained shall inure to the benefit of and shall apply to and be binding upon the parties hereto and their respective heirs; legatees; devisees; executors; administrators; and permitted successors and assigns. This Lease is for the sole benefit of the parties and their respective heirs, legatees, devisees, executors, administrators and permitted successors and assigns, and nothing in this Lease shall give or be construed to give any other person or entity any legal or equitable rights. Nothing in this Section shall in any way alter the provisions of this Lease restricting assignment or subletting.

40.14. This Lease shall be governed by, construed and enforced in accordance with the laws of the state in which the Premises are located, without regard to such state’s conflict of law principles.

40.15. Tenant guarantees, warrants and represents that the individual or individuals signing this Lease have the power, authority and legal capacity to sign this Lease on behalf of and to bind all entities, corporations, partnerships, limited liability companies, joint venturers or other organizations and entities on whose behalf such individual or individuals have signed.

40.16. This Lease may be executed in one or more counterparts, each of which, when taken together, shall constitute one and the same document.

40.17. No provision of this Lease may be modified, amended or supplemented except by an agreement in writing signed by Landlord and Tenant.

40.18. No waiver of any term, covenant or condition of this Lease shall be binding upon Landlord unless executed in writing by Landlord. The waiver by Landlord of any breach or default of any term, covenant or condition contained in this Lease shall not be deemed to be a waiver of any preceding or subsequent breach or default of such term, covenant or condition or any other term, covenant or condition of this Lease.

40.19. To the extent permitted by Applicable Laws, the parties waive trial by jury in any action, proceeding or counterclaim brought by the other party hereto related to matters arising out of or in any way connected with this Lease; the relationship between Landlord and Tenant; Tenant's use or occupancy of the Premises; or any claim of injury or damage related to this Lease or the Premises.

41. Rooftop Installation Area.

41.1. Tenant may use those portions of the Building identified as "TENANT 100/220/410 ROOFTOP INSTALLATION AREA" on the 5th and 6th pages of Exhibit A attached hereto (collectively, the "Rooftop Installation Area") solely to operate, maintain, repair and replace rooftop antennae, mechanical equipment, communications antennas and other equipment installed by Tenant, or as part of the Tenant Improvements, in the Rooftop Installation Area in accordance with this Article ("Tenant's Rooftop Equipment"). Tenant's Rooftop Equipment shall be only for Tenant's use of the Premises for the Permitted Use. The parties acknowledge and agree that the Rooftop Installation Area depicted on Exhibit A is based on the Basis of Design and URS for the Manufacturing Area and is not based on Approved Plans (as defined in the Work Letter) for the Manufacturing Area. If Landlord determines, in accordance with the Work Letter, that Tenant's Rooftop Equipment can be accommodated in an area that is smaller than the Rooftop Installation Area depicted on Exhibit A, then the Rooftop Installation Area shall be reduced to an area, as determined by Landlord, that is necessary to accommodate Tenant's Rooftop Equipment, and Tenant agrees that upon the written request of Landlord, Tenant shall execute an amendment to this Lease that depicts such final Rooftop Installation Area.

41.2. Other than Tenant's Rooftop Equipment that is being installed by Landlord as part of the Tenant Improvements, Tenant shall install Tenant's Rooftop Equipment at its sole cost and expense, at such times and in such manner as Landlord may reasonably designate, and in accordance with this Article and the applicable provisions of this Lease regarding Alterations. Tenant's Rooftop Equipment and the installation thereof shall be subject to Landlord's prior written approval, which approval shall not be unreasonably withheld. Among other reasons, Landlord may withhold approval if the installation or operation of Tenant's Rooftop Equipment could reasonably be expected to damage the structural integrity of the Building or to transmit vibrations or noise or cause other adverse effects beyond the Premises to an extent not customary in first class laboratory buildings, unless Tenant implements measures that are acceptable to Landlord in its reasonable discretion to avoid any such damage or transmission.

41.3. Tenant, at Tenant's sole cost and expense, shall maintain and keep Tenant's Rooftop Equipment and every part thereof in good condition and repair and in compliance with all Applicable Laws and the manufacturer's specifications therefor, and shall, within ten (10) days after receipt of written notice from Landlord, provide to Landlord any records that Landlord reasonably requests, which shall be subject to the records provisions of Section 18.2. At all times that it is in operation, Tenant's Rooftop Equipment shall meet or exceed the manufacturer's specifications therefor (including without limitation any specifications concerning noise and vibration), and Landlord, from time to time during the Term (including without limitation following the initial installation of Tenant's Rooftop Equipment), may require that Tenant test Tenant's Rooftop Equipment to determine whether it is operating in accordance with said specifications and in accordance with Applicable Laws.

41.4. Tenant shall comply with any roof or roof-related warranties. Tenant shall obtain a letter from Landlord's roofing contractor within thirty (30) days after completion of any Tenant work on the rooftop stating that such work did not affect any such warranties. Tenant, at its sole cost and expense, shall inspect the Rooftop Installation Area at least annually, and correct any loose bolts, fittings or other appurtenances and repair any damage to the roof caused by the installation or operation of Tenant's Rooftop Equipment. Tenant shall not permit the installation, maintenance or operation of Tenant's Rooftop Equipment to violate any Applicable Laws or constitute a nuisance. Tenant shall pay Landlord within thirty (30) days after demand (a) all applicable taxes, charges, fees or impositions imposed on Landlord by Governmental Authorities as the result of Tenant's use of the Rooftop Installation Areas in excess of those for which Landlord would otherwise be responsible for the use or installation of Tenant's Rooftop Equipment and (b) the amount of any increase in Landlord's insurance premiums as a result of the installation of Tenant's Rooftop Equipment. Upon Tenant's written request to Landlord, Landlord shall use commercially reasonable efforts to cause other tenants to remedy any interference in the operation of Tenant's Rooftop Equipment caused by any such tenants' equipment installed after the applicable piece of Tenant's Rooftop Equipment; provided, however, that Landlord shall not be required to request that such tenants waive their rights under their respective leases.

41.5. If Tenant's Rooftop Equipment (a) causes physical damage to the structural integrity of the Building, (b) interferes with any telecommunications, mechanical or other systems located at or near or servicing the Building or the Project that were installed prior to the installation of Tenant's Rooftop Equipment, (c) interferes with any other service provided to other tenants in the Building or the Project by rooftop or penthouse installations that were installed prior to the installation of Tenant's Rooftop Equipment or (d) interferes with any other tenants' business, in each case in excess of that permissible under Federal Communications Commission regulations, then Tenant shall cooperate with Landlord to determine the source of the damage or interference and promptly repair such damage and eliminate such interference, in each case at Tenant's sole cost and expense, within ten (10) days after receipt of notice of such damage or interference (which notice may be oral; provided that Landlord also delivers to Tenant written notice of such damage or interference within twenty-four (24) hours after providing oral notice).

41.6. If Landlord determines that, after the Term Commencement Date, Tenant's Rooftop Equipment is not in compliance with Applicable Laws, then Landlord shall have the right to cause Tenant, at Tenant's cost and expense, to relocate Tenant's Rooftop Equipment to comparably functional space on the roof or in the penthouse of the Building by giving Tenant prior written notice thereof. If Landlord elects to exercise such relocation right, Tenant may, at Tenant's option, propose in writing to Landlord within thirty (30) days after receipt of such notice from Landlord, reasonable alternatives to the relocation of Tenant's Rooftop Equipment that, if taken, would cause Tenant's Rooftop Equipment to comply with Applicable Laws, such as, by way of example only, screening Tenant's Rooftop Equipment (if not then screened) or adding additional screening (if then screened), taking other noise mitigation measures or making adjustments to Tenant's Rooftop Equipment to reduce the noise emanating therefrom. If Landlord consents to the same, such consent not to be unreasonably withheld (except that with respect to any such mitigation measures that affect the appearance of the Building or the roof or base Building systems, such consent shall be at Landlord's sole and absolute discretion), then Landlord shall permit Tenant, at Tenant's cost and expense, to undertake such mitigation measures. If such mitigation measures cause Tenant's Rooftop Equipment to be in compliance with Applicable Laws, then Landlord shall not exercise its relocation right under this Section 41.6. If, however, such mitigation measures do not cause Tenant's Rooftop Equipment to be in compliance with Applicable Laws, or if Landlord does not approve such mitigation measures, or if Tenant does not propose any mitigation measures within the 30-day time period set forth above, then Tenant shall arrange for the relocation of Tenant's Rooftop Equipment within sixty (60) days after receipt of Landlord's notification of such relocation or within thirty (30) days after Landlord does not approve any proposed mitigation measures or promptly after Landlord has determined that such mitigation measures have not caused Tenant's Rooftop Equipment to be in compliance with Applicable

Laws. In the event Tenant fails to arrange for relocation within the foregoing time periods, Landlord shall have the right to arrange for the relocation of Tenant's Rooftop Equipment in a manner that does not unnecessarily interrupt or interfere with Tenant's use of the Premises for the Permitted Use.

42. Option to Extend Term. Tenant shall have two options ("Options") to extend the Term by five (5) years each as to the entire Premises, upon the following terms and conditions. Any extension of the Term pursuant to the Options shall be on all the same terms and conditions as this Lease, except as follows:

42.1. Base Rent at the commencement of each Option term shall equal to the then-current fair market value for comparable Class A office and laboratory space in the East Cambridge submarket of comparable age, quality, level of finish and proximity to amenities and public transit, and taking into account the location of the Building in the Cambridgeport sub-submarket ("FMV"), and shall be further increased on each annual anniversary of the Option term commencement date by three percent (3%). Tenant may, no more than thirteen (13) months prior to the date the Term is then scheduled to expire, request Landlord's estimate of the FMV for the Option term. Landlord shall, within fifteen (15) days after receipt of such request, give Tenant a written proposal of such FMV. If Tenant gives written notice to exercise the Option, such notice shall specify whether Tenant accepts Landlord's proposed estimate of FMV. If Tenant does not accept the FMV, then the parties shall endeavor to agree upon the FMV, taking into account all relevant factors, including (a) the size of the Premises, (b) the length of the Option term, (c) rent in comparable buildings in the relevant submarket, including concessions offered to new tenants, such as free rent, tenant improvement allowances and moving allowances, (d) Tenant's creditworthiness, (e) the quality and location of the Building and the Project, (f) the location of the Building in the Cambridgeport sub-submarket and (g) the systems and improvements in the portion of the Premises that is not the Manfuacturing Area and the value of the Manufacturing Area as so-called "warm" laboratory space. In the event that the parties are unable to agree upon the FMV within thirty (30) days after Tenant notifies Landlord that Tenant is exercising the applicable Option, then either party may request that the same be determined as follows: a senior officer of a nationally recognized leasing brokerage firm with local knowledge of the East Cambridge and Cambridgeport laboratory/research and development leasing submarket (the "Baseball Arbitrator") shall be selected and paid for jointly by Landlord and Tenant. If Landlord and Tenant are unable to agree upon the Baseball Arbitrator, then the same shall be designated by the local chapter of the Judicial Arbitration and Mediation Services or any successor organization thereto (the "JAMS"). The Baseball Arbitrator selected by the parties or designated by JAMS shall have at least ten (10) years' experience in the leasing of laboratory/research and development space in the East Cambridge and Cambridgeport submarkets and (z) not have been employed or retained by either Landlord or Tenant or any affiliate of either for a period of at least ten (10) years prior to appointment pursuant hereto. Each of Landlord and Tenant shall submit to the Baseball Arbitrator and to the other party its determination of the FMV. The Baseball Arbitrator shall grant to Landlord and Tenant a hearing and the right to submit evidence. The Baseball Arbitrator shall determine which of the two (2) FMV determinations more closely represents the actual FMV. The arbitrator may not select any other FMV for the Premises other than one submitted by Landlord or Tenant. The FMV selected by the Baseball Arbitrator shall be binding upon Landlord and Tenant and shall serve as the basis for determination of Base Rent payable for the Option term. If, as of the commencement date of either Option term, the amount of Base Rent payable during such Option term shall not have been determined, then, pending such determination, Tenant shall pay Base Rent equal to the Base Rent payable with respect to the last year of the then-current Term. After the final determination of Base Rent payable for applicable Option term, the parties shall promptly execute a written amendment to this Lease specifying the amount of Base Rent to be paid during the applicable Option term. Any failure of the parties to execute such amendment shall not affect the validity of the FMV determined pursuant to this Section.

42.2. The Option is not assignable separate and apart from this Lease.

42.3. The Option is conditional upon Tenant giving Landlord written notice of its election to exercise the Option at least twelve (12) months prior to the end of the expiration of the then-current Term. Time shall be of the essence as to Tenant's exercise of the applicable Option. Tenant assumes full responsibility for maintaining a record of the deadlines to exercise the Option. Tenant acknowledges that it would be inequitable to require Landlord to accept any exercise of the Option after the date provided for in this Section.

42.4. Notwithstanding anything contained in this Article to the contrary, Tenant shall not have the right to exercise the Option:

(a) During the time commencing from the date Landlord delivers to Tenant a written notice that Tenant is in default under any provisions of this Lease and continuing until Tenant has cured the specified default to Landlord's reasonable satisfaction; or

(b) At any time after any Default as described in Article 31 of the Lease (provided, however, that, for purposes of this Section 42.4(b), Landlord shall not be required to provide Tenant with notice of such Default) and continuing until Tenant cures any such Default, if such Default is susceptible to being cured; or

(c) Tenant has subleased more than fifty percent (50%) of the Rentable Area of the Premises as of the exercise of the applicable Option or at the commencement of the applicable Option term (unless such sublease constituted a Business Transfer); or

(d) In the event that Tenant has defaulted in the performance of any monetary obligations or material non-monetary obligations under this Lease two (2) or more times during the twelve (12)-month period immediately prior to the date that Tenant intends to exercise the Option, whether or not Tenant has cured such defaults.

42.5. The period of time within which Tenant may exercise the Option shall not be extended or enlarged by reason of Tenant's inability to exercise such Option because of the provisions of Section 42.4.

42.6. All of Tenant's rights under the provisions of the Option shall terminate and be of no further force or effect, after Tenant's due and timely exercise of the Option if, after such exercise, but prior to the commencement date of the new term, Tenant defaults in the performance of any monetary obligations or material non-monetary obligations under this Lease and Tenant has also defaulted in any monetary obligations or material nonmonetary obligations under this Lease one (1) or more times during the preceeding twelve (12)-month period.

43. Right of First Offer.

43.1. Subject to (a) the conditions set forth in this Article, (b) any other party's pre-existing rights with respect to the Available ROFO Premises (as defined below), (c) Tenant, both as of the time of exercising the ROFO (as defined below) and as of the commencement of the term with respect to the Available ROFO Premises, (i) not being in default (A) of any non-monetary obligation under this Lease of which Landlord has delivered notice to Tenant or (B) of any monetary obligation under this Lease, (ii) not having assigned this Lease or sublet any portion of the Premises (except with respect to an Exempt Transfer) and (iii) occupying (as the original tenant under this Lease or a tenant pursuant to an Exempt Transfer under this Lease) seventy-five percent (75%) of the Premises, Tenant shall have a one-time right of first offer ("ROFO") as to any rentable premises within the Building for which Landlord is seeking a tenant (the "Available ROFO Premises"). To the extent that Landlord renews or extends a then-existing lease with any then-existing tenant of any space in the Building under any extension or renewal rights in existence under any such lease as of the Execution Date, or enters into a new lease with such then-existing tenant for the same premises provided that the term for such new

lease (including any extension or renewal terms) does not exceed the term (including any extension or renewal terms) under any existing lease for such tenant as of the Execution Date, the affected space shall not be deemed to be Available ROFO Premises. In the event Landlord intends to market Available ROFO Premises, Landlord shall provide written notice thereof to Tenant (the "Advice"). The Advice shall include the terms under which Landlord is prepared to lease the Available ROFO Premises to Tenant, including the base rent, , property management fee, Tenant's improvement allowance, if any, any renewal term and all other material economic terms. Tenant may lease such Available ROFO Premises under such terms, by delivering written notice of exercise to Landlord (the "Notice of Exercise") within fifteen (15) business days after the date of the Advice.

43.2. Terms for Offering Space.

(a) The term for the Available ROFO Premises shall commence upon the commencement date stated in the Advice and expire on the Term Expiration Date (as it may be extended pursuant to Section 42 above) and during such period, such Available ROFO Premises shall be considered a part of the Premises, provided that all of the terms and conditions of this Lease shall apply to the Available ROFO Premises except to the extent that they conflict with the Advice, in which case the Advice shall govern until the parties have entered into the Offering Amendment (as hereinafter defined).

(b) Tenant shall pay Base Rent and Operating Expenses for the Available ROFO Premises in accordance with the terms and conditions of the Advice.

(c). The Available ROFO Premises (including improvements and personalty, if any) shall be accepted by Tenant in its condition and as-built configuration existing on the earlier of the date Tenant takes possession of the Available ROFO Premises or as of the date the term for such Available ROFO Premises commences, unless the Advice specifies any work to be performed by Landlord in the Available ROFO Premises, in which case Landlord shall perform such work in the Available ROFO Premises.

43.3. The rights of Tenant hereunder with respect to the Available ROFO Premises shall terminate on the earlier to occur of: (i) Tenant's failure to exercise its ROFO within the fifteen (15) business day period provided in Section 43.1 above; and (ii) the date Landlord would have provided Tenant an Advice if Tenant had not been in violation of one or more of the conditions set forth in Section 43.1 above, and in the event such rights of Tenant terminate with respect to the Available ROFO Premises, Landlord shall have the right to consummate a lease of the Available ROFO Premises to any other tenant and Tenant's ROFO shall be deemed waived for such space for the remainder of the Term of this Lease. Notwithstanding the immediately foregoing, if Tenant fails to exercise its ROFO as set forth above and if Landlord intends to lease the Available ROFO Premises to a third party that is not the existing occupant of such space at a Net Effective Rent (defined below) that is less than ninety-five percent (95%) of the Net Effective Rent that would be payable under the original Advice, then, prior to offering to lease such Available ROFO Premises to a third party, Landlord shall again give Tenant an Advice and Tenant shall have a ROFO with respect to such Available ROFO Premises, subject to, and in accordance with the provisions of this Article 43.

43.4. As used in this Article 43, the term "Net Effective Rent" shall mean the net present value (using the same discount factor in each case) of the aggregate consideration, determined on an average annual basis, payable to Landlord under the proposal at issue (i.e., either the Advice or the offer to another party, as the case may be), taking into account all fixed base rent, additional rent, free rent, construction or other allowances, the cost of any work performed in the Available ROFO Premises by Landlord at its expense, the length of lease term, and all other relevant economic terms, as the same may be modified by Landlord to account for the other tenant-party's financial strength.

43.5. If Tenant exercises its ROFO, Landlord shall prepare an amendment (the "Offering Amendment") adding the Available ROFO Premises to the Premises on the terms set forth in the Advice. A copy of the Offering Amendment shall be sent to Tenant within a reasonable time after Landlord's receipt of the Notice of Exercise executed by Tenant, and Tenant shall execute and return the Offering Amendment to Landlord within fifteen (15) days thereafter, but an otherwise valid exercise of the ROFO shall be fully effective whether or not the Offering Amendment is executed.

43.6. Notwithstanding anything in this Article to the contrary, any exercise by Tenant of the ROFO during any period of time in which Tenant is not permitted to exercise the ROFO in accordance with Section 43.1 above shall be void and of no effect. In addition, Tenant shall not be entitled to exercise the ROFO if Tenant has defaulted in the performance of any monetary obligations or material non-monetary obligations under this Lease two (2) or more times during the twelve (12) month period prior to the date on which Tenant seeks to exercise the ROFO.

43.7. Notwithstanding anything in this Lease to the contrary, Tenant shall not assign or transfer the ROFO (other than as part of an Exempt Transfer), either separately or in conjunction with an assignment or transfer of Tenant's interest in the Lease, without Landlord's prior written consent, which consent Landlord may withhold in its sole and absolute discretion.

43.8. If Tenant exercises the ROFO, Landlord does not guaranty that the Available ROFO Premises will be available on the anticipated commencement date for the Lease as to such Premises due to a holdover by the then-existing occupants of the Available ROFO Premises or for any other reason beyond Landlord's reasonable control.

44. Bicycle Storage. For so long as Landlord provides bicycle storage to all of the tenants in the Building, Tenant shall be able to access and use bicycle storage at the Parking Garage, at no additional cost. Landlord shall have no liability to Tenant or its employees with respect to any loss or damage to any bicycles or other personal property or equipment in such bicycle storage area. Landlord agrees that, in addition to Landlord's Work set forth on Exhibit B-2 attached hereto, the Landlord's Work shall include the installation of covered bicycle storage in the Parking Garage to serve Tenant and other tenants and occupants of the Building and neighboring properties.

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IN WITNESS WHEREOF, the parties hereto have executed this Lease as a sealed Massachusetts instrument as of the date first above written.

LANDLORD:

BMR-SIDNEY RESEARCH CAMPUS LLC,
a Delaware limited liability company

By:	/s/ William Kane
Name:	William Kane
Title:	Senior Vice President, Boston Market Lead

TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By:	
Name:	
Title:	

IN WITNESS WHEREOF, the parties hereto have executed this Lease as a sealed Massachusetts instrument as of the date first above written.

LANDLORD:

BMR-SIDNEY RESEARCH CAMPUS LLC,
a Delaware limited liability company

By: _____
Name: _____
Title: _____

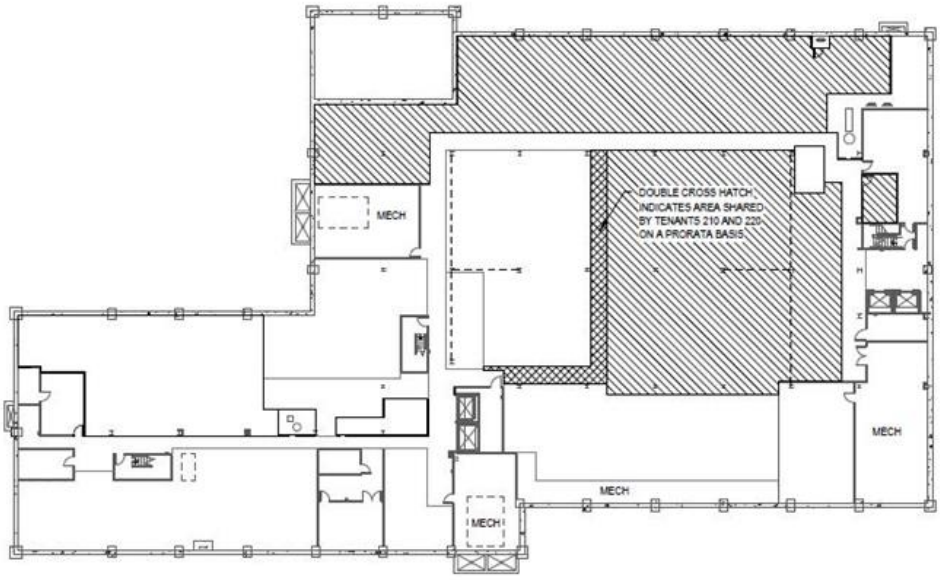
TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By: /s/ Roger Pomerantz
Name: Roger Pomerantz
Title: President, CEO, Chairman

EXHIBIT A

PREMISES



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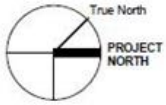
Tenant Premises

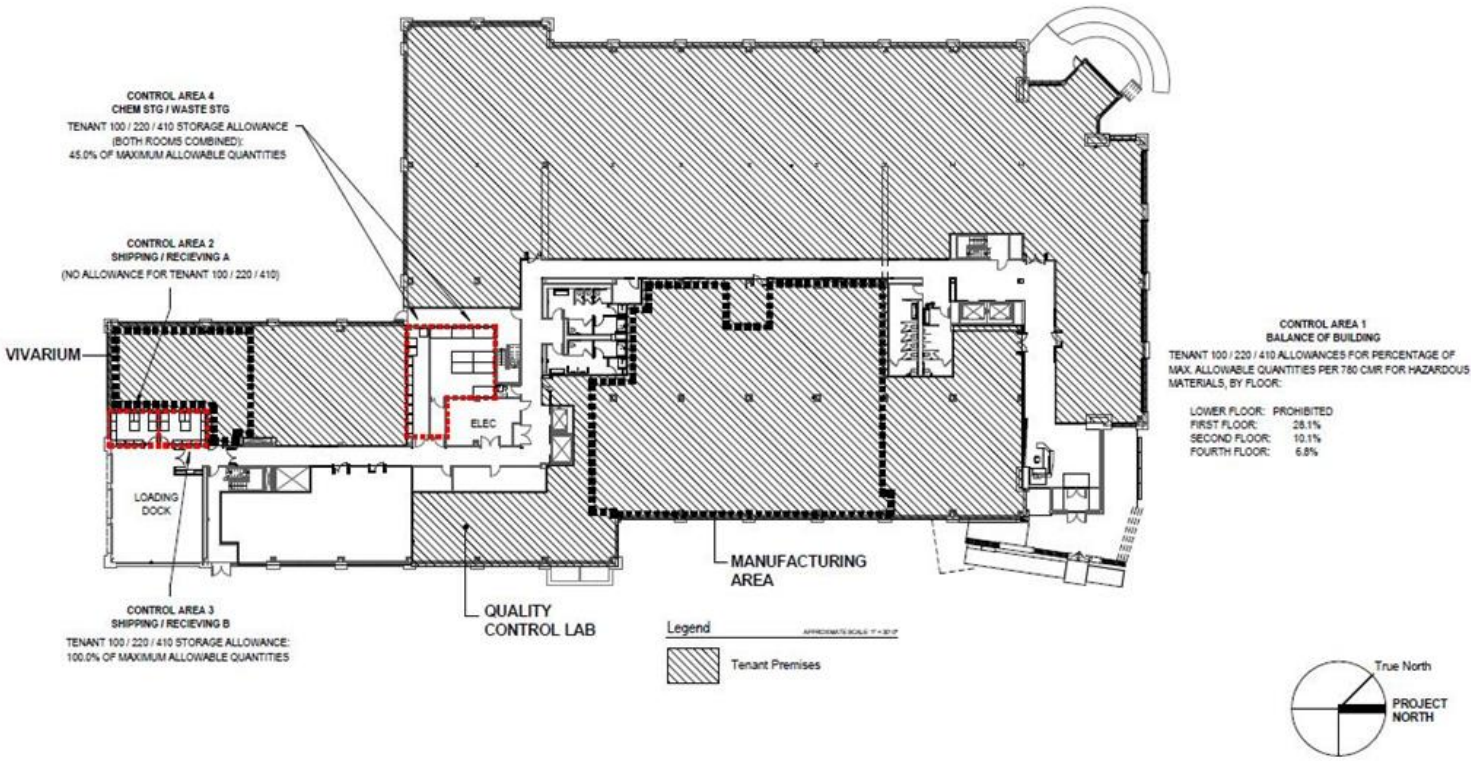


BioMed Realty
Discover here.
prepared by ARROWSTREET

Premises Plan - Tenant 100 / 220 /410

200 Sidney Street | Lower Floor

Cambridge, Massachusetts | 11 November 2015



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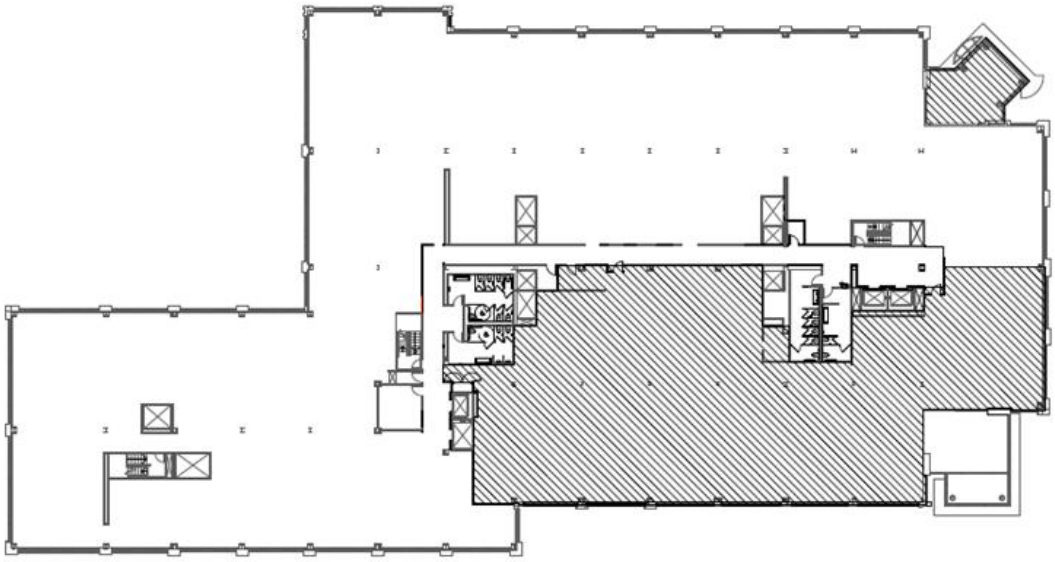
prepared by ARROWSTREET

Premises Plan - Tenant 100 / 220 /410

200 Sidney Street | First Floor

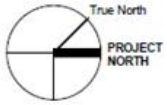
Cambridge, Massachusetts | 11 November 2015



REFER TO FIRST FLOOR PLAN FOR CONTROL AREA INFORMATION.

Legend

Tenant Premises



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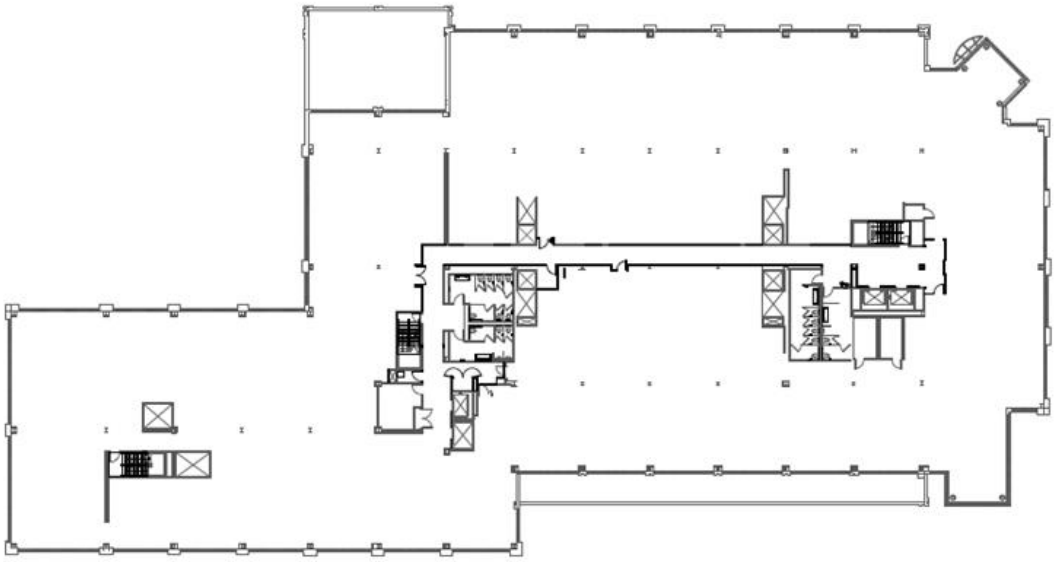
prepared by ARROWSTREET

Premises Plan - Tenant 100 / 220 /410

200 Sidney Street | **Second Floor**

Cambridge, Massachusetts | 11 November 2015



REFER TO FIRST FLOOR PLAN FOR CONTROL AREA INFORMATION.

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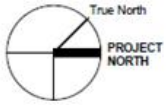
Tenant Premises



BioMed Realty
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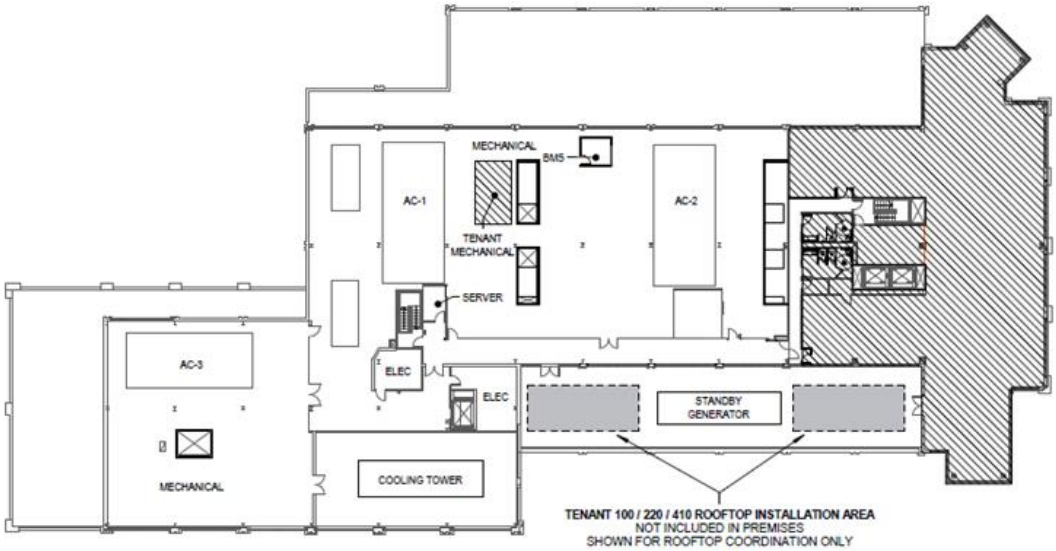
Premises Plan - Tenant 100 / 220 /410

200 Sidney Street | Third Floor

Cambridge, Massachusetts | 11 November 2015



TENANT 100 / 220 / 410 ROOFTOP INSTALLATION AREA
NOT INCLUDED IN PREMISES
SHOWN FOR ROOFTOP COORDINATION ONLY

REFER TO FIRST FLOOR PLAN FOR CONTROL AREA INFORMATION.

Legend

Tenant Premises

True North

PROJECT NORTH

BioMed Realty
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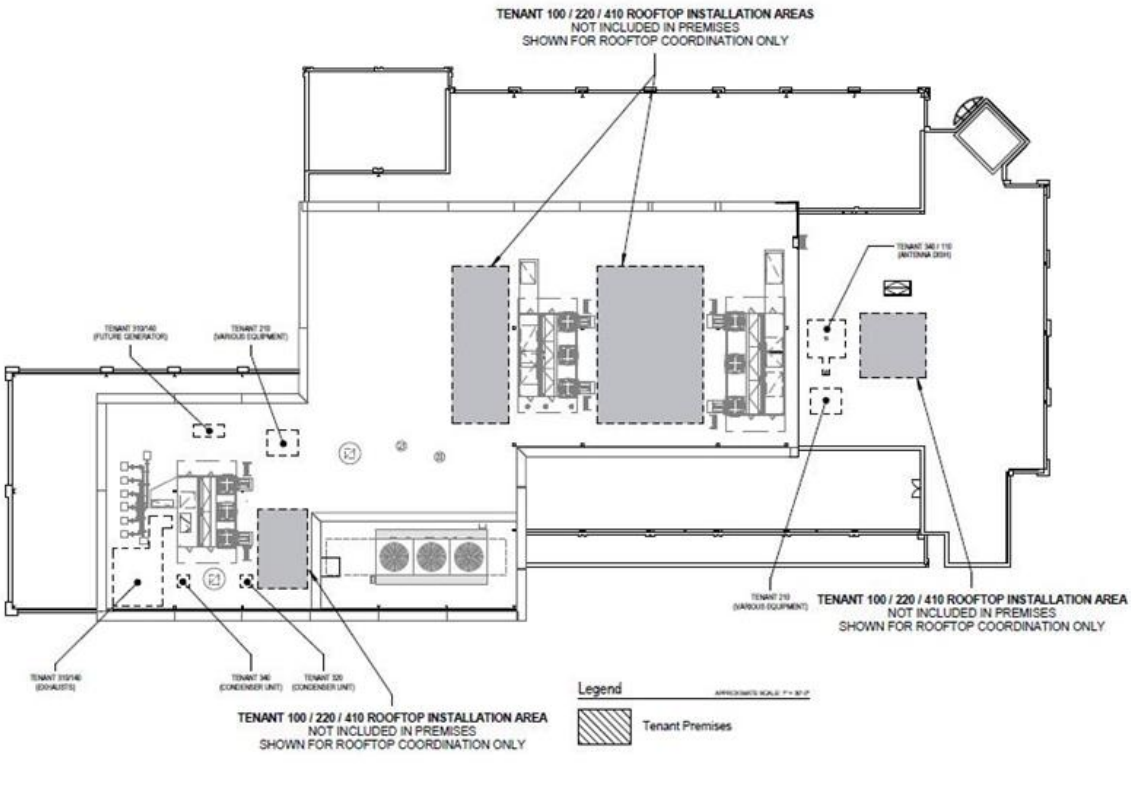
prepared by ARROWSTREET

Premises Plan - Tenant 100 / 220 /410

200 Sidney Street | Fourth Floor

Cambridge, Massachusetts | 11 November 2015



BioMed Realty
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prepared by ARROWSTREET

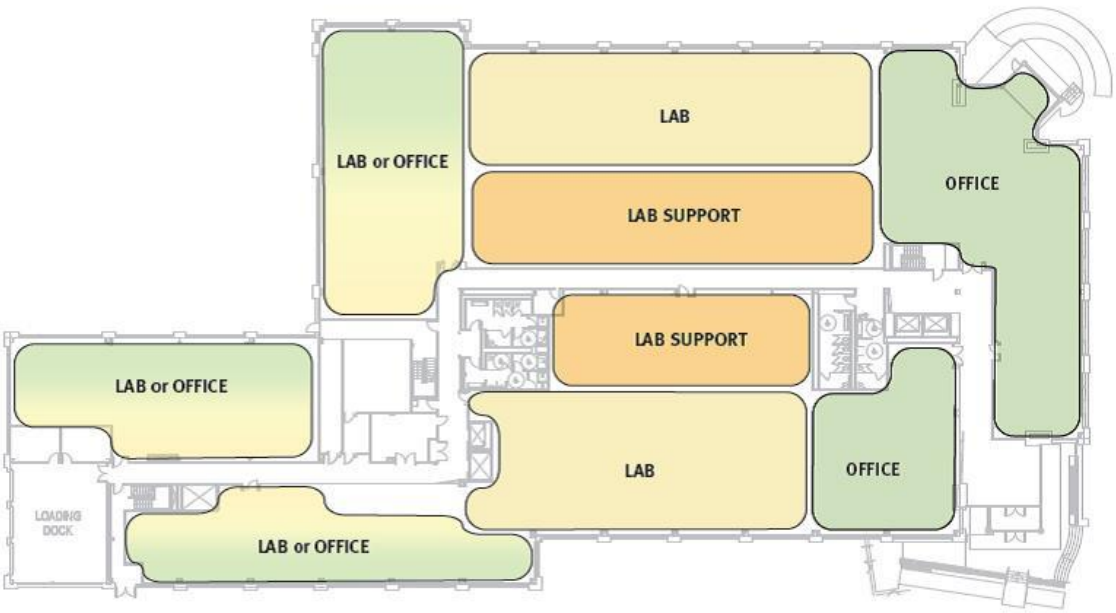
Premises Plan - Tenant 100 / 220 /410

200 Sidney Street | Roof Level

Cambridge, Massachusetts | 11 November 2015

EXHIBIT A-1

LAB AND OFFICE ZONES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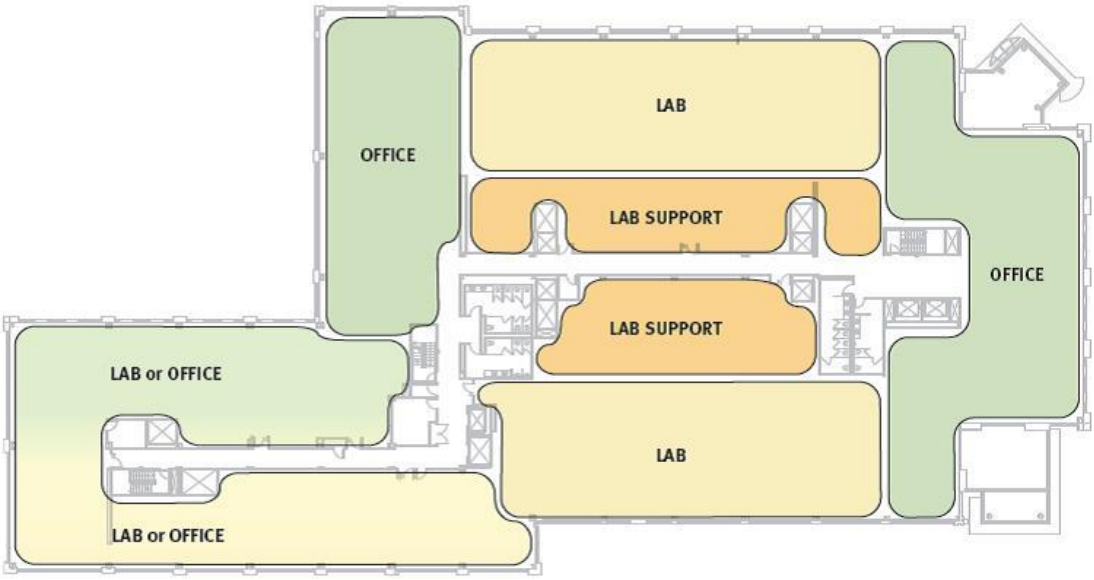
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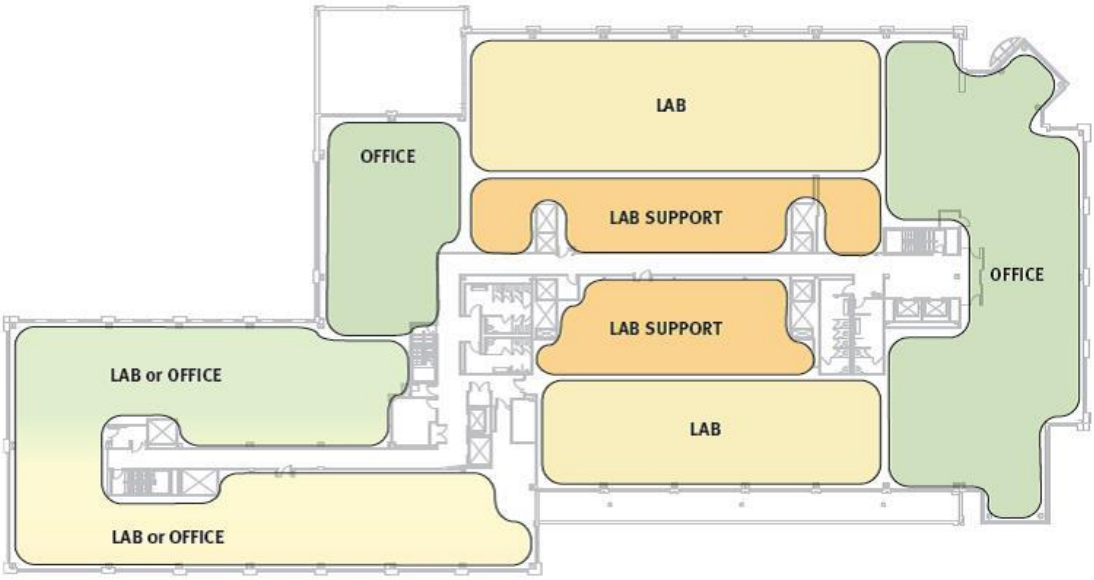
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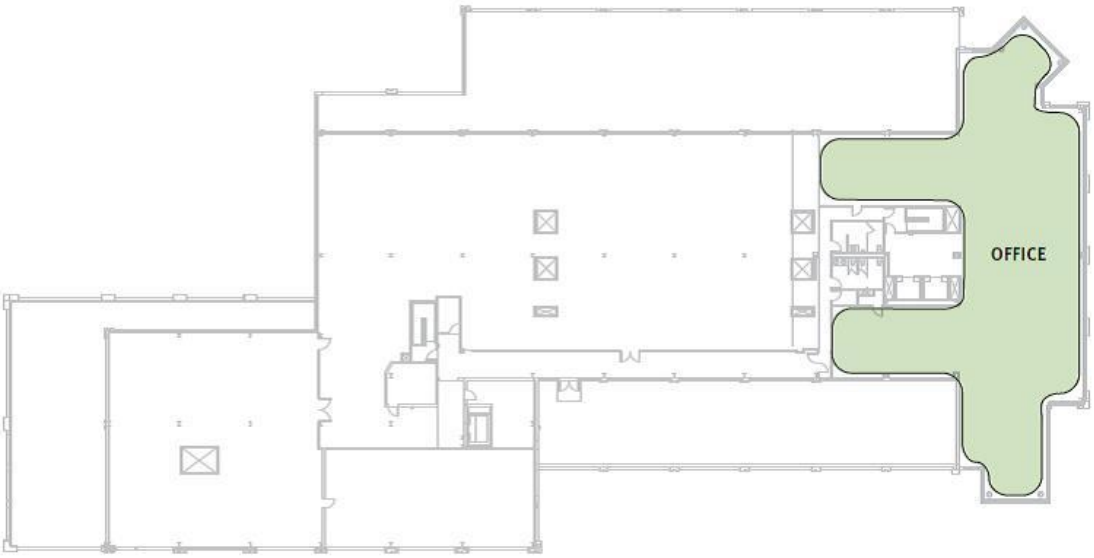
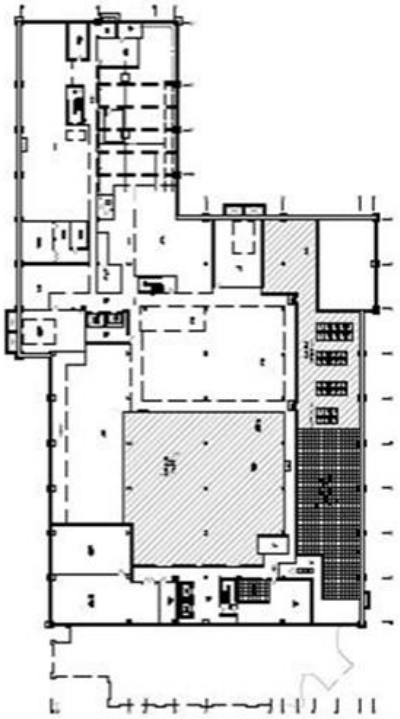
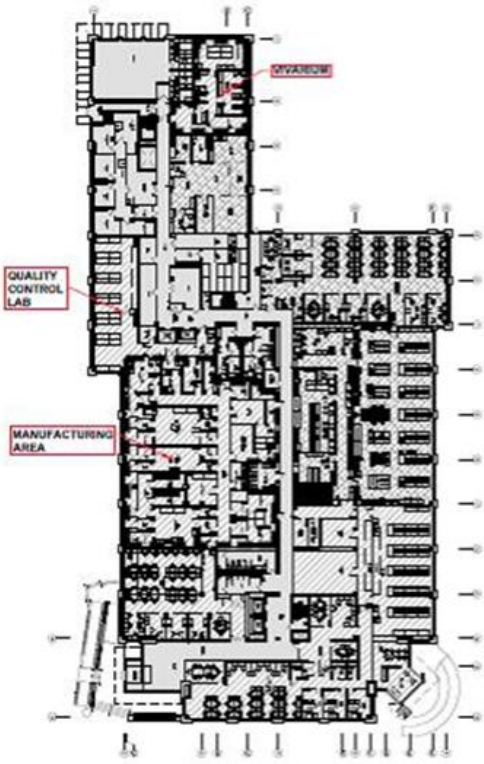

OFFICE

EXHIBIT A-2

PHASING PLAN



BASEMENT FLOOR PLAN



FIRST FLOOR PLAN

RICHMOND

[illegible]
77 M[illegible], MA 01748
T 508.435.9700 F 508.435.9718

SERES PHASING PLANS

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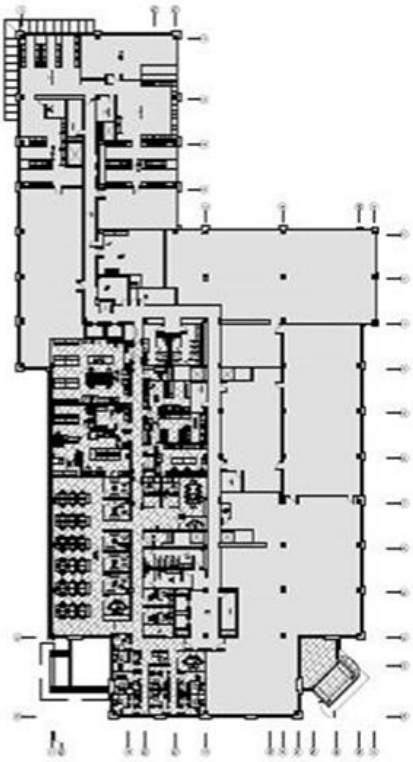
P[illegible] 1B

P[illegible] 2

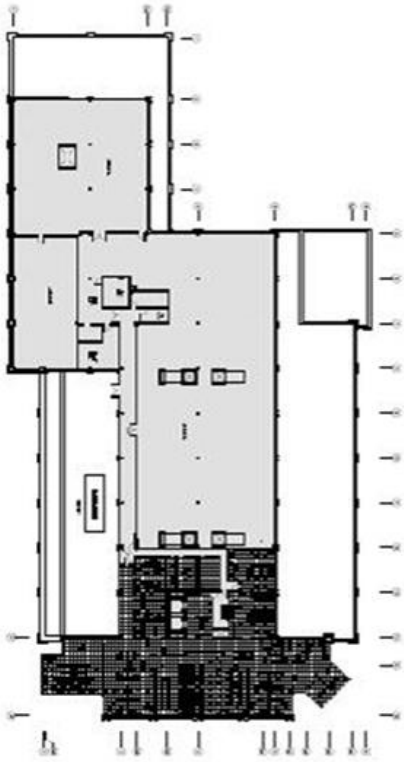
SERES THERAPEUTICS

200 S[illegible]
C[illegible], MA

N[illegible] 11, 2015
N[illegible]



SECOND FLOOR PLAN



FOURTH FLOOR PLAN

RICHMOND

[illegible]
77 M[illegible]; MA 01748
T 508.435.9700 F 508.435.9718

SERES PHASING PLANS

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SERES THERAPEUTICS
200 S[illegible]
C[illegible], MA

N[illegible] 11, 2015
N[illegible]

EXHIBIT B

WORK LETTER

This Work Letter (this "Work Letter") is made and entered into as of the 11th day of November, 2015, by and between BMR-SIDNEY RESEARCH CAMPUS LLC, a Delaware limited liability company ("Landlord"), and SERES THERAPEUTICS, INC., a Delaware corporation ("Tenant"), and is attached to and made a part of that certain Lease dated as of November 11, 2015 (as the same may be amended, amended and restated, supplemented or otherwise modified from time to time, the "Lease"), by and between Landlord and Tenant for the Premises located at 200 Sidney Street, Cambridge, Massachusetts. All capitalized terms used but not otherwise defined herein shall have the meanings given them in the Lease.

1. General Requirements.

1.1. Authorized Representatives.

(a) Landlord designates, as Landlord's authorized representative ("Landlord's Authorized Representative"), (i) Edward McDonald as the person authorized to initial plans, drawings, approvals and to sign change orders pursuant to this Work Letter and (ii) an officer of Landlord as the person authorized to sign any amendments to this Work Letter or the Lease. Tenant shall not be obligated to respond to or act upon any such item until such item has been initialed or signed (as applicable) by the appropriate Landlord's Authorized Representative. Landlord may change either Landlord's Authorized Representative upon one (1) business day's prior written notice to Tenant.

(b) Tenant designates Candace B. Martin ("Tenant's Authorized Representative") as the person authorized to initial and sign all plans, drawings, change orders and approvals pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any such item until such item has been initialed or signed (as applicable) by Tenant's Authorized Representative. Tenant may change Tenant's Authorized Representative upon one (1) business day's prior written notice to Landlord.

1.2. Schedule. The schedule for design and development of the Phase 1A Improvements and Phase 1B Improvements (collectively, the "Phase 1 Improvements"), including the time periods for preparation and review of construction documents, approvals and performance, shall be in accordance with the schedule prepared by Landlord and attached hereto as Exhibit B-4-a (the "Phase 1 Schedule"). The Phase 1 Schedule shall be subject to adjustment as mutually agreed upon in writing by the parties, or as otherwise provided in this Work Letter. The schedule for design and development of the Phase 2 Improvements, including the time periods for preparation and review of construction documents, approvals and performance, shall be in accordance with the schedule prepared by Landlord and attached hereto as Exhibit B-4-b (the "Phase 2 Schedule"). The Phase 2 Schedule is a preliminary schedule based upon the current design specified in the Draft Manufacturing Area Schematic Plans and is the schedule upon which the Estimated Phase 2 Delivery Date is based. The final Phase 2 Schedule, based upon finalizing the Manufacturing Area Approved Plans and Approved Manufacturing Area Budget (as both such terms are hereinafter defined) in accordance with the terms of this Work Letter, shall be prepared by Landlord. Once prepared by Landlord, changes to such final Phase 2 Schedule shall be subject to adjustment as mutually agreed upon in writing by the parties, or as otherwise provided in this Work Letter.

1.3. Landlord's Architects, Contractors and Consultants. The architect, engineering consultants, design team, construction manager, general contractor and subcontractors responsible for the construction of the Tenant Improvements shall be selected by Landlord; provided, however, that Tenant shall have the right to reasonably approve the architect, MEP engineer, and construction manager. Landlord and Tenant hereby approve The Richmond Group (construction manager), Dineen Architects and Planners (architect), and AHA Engineering (MEP engineers).

1.4. Construction Meetings. Landlord, its general contractor and Tenant shall reasonably cooperate to schedule and conduct regular construction meetings (approximately once per week, except as otherwise agreed to by the parties) regarding the progress of the Tenant Improvements and Landlord's Work. During such meetings, Landlord shall use commercially reasonable efforts to notify Tenant of any potential delays in construction. Tenant's representative shall have the right to attend such meetings via conference call or other reasonably agreed means.

1.5. Tenant Improvements. All Tenant Improvements shall be performed by Landlord's contractor, at Tenant's sole cost and expense (subject to Landlord's obligations with respect to the TI Allowance) and in substantial accordance with the Approved Plans (as defined below), the Lease and this Work Letter. To the extent that the total projected cost of the Tenant Improvements (as projected by Landlord) exceeds the TI Allowance (such excess, the "Excess TI Costs"), Tenant shall pay the costs of the Tenant Improvements on a pari passu basis with Landlord as such costs become due, in the proportion of Excess TI Costs payable by Tenant to the TI Allowance payable by Landlord. If the cost of the Tenant Improvements (as projected by Landlord) increases over Landlord's initial projection, then Landlord may notify Tenant and Tenant shall pay any additional Excess TI Costs in the same way that Tenant pays such initial Excess TI Costs. If Tenant fails to pay, or is late in paying, any sum due to Landlord under this Work Letter, then Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including the right to interest and the right to assess a late charge), and for purposes of any litigation instituted with regard to such amounts the same shall be considered Rent. All material and equipment furnished by Landlord or its contractors as the Tenant Improvements shall be new or "like new," and the Tenant Improvements shall be performed in a first-class, workmanlike manner.

1.6. Landlord's Work. Landlord shall perform Landlord's Work at Landlord's sole cost and expense, which cost will not be reimbursable from the TI Allowance. Any work to the Common Areas required by Applicable Laws as a result of Landlord's Work shall be considered Landlord's Work and shall be undertaken at Landlord's sole cost and expense. Any work to the Common Areas required by Applicable Laws as a result of the Tenant Improvements shall be considered Tenant Improvements and shall be undertaken by Landlord and shall be paid for in accordance with Section 4.5 of the Lease and this Work Letter.

2. Plans for Tenant Improvements.

2.1. Plans for Lab/Office Improvements. Landlord shall prepare final plans and specifications for the Phase 1 Improvements and the Phase 2 Improvements (excluding the Manufacturing Area and the Quality Control Lab) (collectively, the "Lab/Office Improvements") that are consistent with and are logical evolutions of the plans attached hereto as Exhibit B-1-a. As soon as such final plans and specifications for the Lab/Office Improvements (the "Lab/Office Construction Plans") are completed, Landlord shall deliver the same to Tenant for Tenant's approval, which approval shall not be unreasonably withheld, conditioned or delayed. In a commercially reasonable manner after the execution of the Lease, Landlord shall consult with Tenant and Landlord shall finalize the Lab/Office Construction Plans. If the Lab/Office Construction Plans are disapproved by Tenant, then Tenant shall notify Landlord in writing of its reasonable objections to such Lab/Office Construction Plans, and the parties shall confer and negotiate in good faith to reach agreement on the Lab/Office Construction Plans. Promptly after the Lab/Office Construction Plans are finalized, two (2) copies of the Lab/Office Construction Plans shall be initialed and dated by Landlord and Tenant, and Landlord shall promptly submit such Lab/Office Construction Plans to all appropriate Governmental Authorities for approval. The Lab/Office Construction Plans so approved, and all change orders specifically permitted by this Work Letter, are referred to herein as the "Lab/Office Approved Plans."

2.2. Plans for Manufacturing Area Improvements.

(a) Landlord has prepared schematics covering the Phase 2 Improvements applicable to the Manufacturing Area and the Quality Control Lab (collectively, the "Manufacturing Area Improvements") in conformity with the applicable provisions of this Work Letter (the "Draft Manufacturing Area Schematic Plans") which are attached hereto as Exhibit B-1-c. The Draft Manufacturing Area Schematic Plans contain sufficient information and detail to accurately describe the proposed design to Tenant. Tenant shall notify Landlord in writing within five (5) business days after receipt of the Draft Manufacturing Area Schematic Plans whether Tenant approves or objects to the Draft Manufacturing Area Schematic Plans and of the manner, if any, in which the Draft Manufacturing Area Schematic Plans are unacceptable. Tenant's failure to respond within such five (5) business day period shall be deemed approval by Tenant. If Tenant reasonably objects to the Draft Manufacturing Area Schematic Plans, then Landlord shall revise the Draft Manufacturing Area Schematic Plans and cause Tenant's objections to be remedied in the revised Draft Manufacturing Area Schematic Plans. Landlord shall then resubmit the revised Draft Manufacturing Area Schematic Plans to Tenant for approval, such approval not to be unreasonably withheld, conditioned or delayed. Tenant's approval of or objection to revised Draft Manufacturing Area Schematic Plans and Landlord's correction of the same shall be in accordance with this Section until Tenant has approved the Draft Manufacturing Area Schematic Plans in writing or been deemed to have approved them. The iteration of the Draft Manufacturing Area Schematic Plans that is approved or deemed approved by Tenant without objection shall be referred to herein as the "Approved Manufacturing Area Schematic Plans." For each day after the Execution Date that Tenant has not finally approved the Draft Manufacturing Schematic Plans in writing, and notwithstanding anything in this Lease or Work Letter to the contrary, then in addition to any additional delays in Substantial Completion of the Phase 2 Improvements caused by Tenant, it shall be a day-for-day delay by Tenant of the Estimated Phase 2 Delivery Date (i.*e.*, the date Substantial Completion of the Phase 2 Improvements would have occurred but for such delay by Tenant).

(b) Landlord shall prepare final plans and specifications for the Manufacturing Area Improvements that (a) are consistent with and are logical evolutions of the Approved Manufacturing Area Schematic Plans and (b) incorporate any other Tenant-requested (and Landlord-approved) Changes (as defined below). As soon as such final plans and specifications for the Manufacturing Area Improvements (the "Manufacturing Area Construction Plans") are completed, Landlord shall deliver the same to Tenant for Tenant's approval, which approval shall not be unreasonably withheld, conditioned or delayed. If the Manufacturing Area Construction Plans are disapproved by Tenant, then Tenant shall notify Landlord in writing of its reasonable objections to such Manufacturing Area Construction Plans, and the parties shall confer and negotiate in good faith to reach agreement on the Manufacturing Area Construction Plans. Promptly after the Manufacturing Area Construction Plans are finalized, two (2) copies of the Manufacturing Area Construction Plans shall be initialed and dated by Landlord and Tenant, and Landlord shall promptly submit such Manufacturing Area Construction Plans to all appropriate Governmental Authorities for approval. The Manufacturing Area Construction Plans so approved, and all change orders specifically permitted by this Work Letter, are referred to herein as the "Manufacturing Area Approved Plans". As used in this Work Letter, the term "Approved Plans" shall mean either the Lab/Office Approved Plans or the Manufacturing Area Approved Plans, as the context requires.

2.3. Notwithstanding anything in the Lease or this Work Letter to the contrary, Landlord shall only be responsible for constructing the Tenant Improvements in accordance with the Approved Plans and shall not in any way be responsible for ensuring that the Tenant Improvements satisfy the requirements of Governmental Authorities (including, without limitation, the Food and Drug Administration) regarding use of the Premises or any portion thereof as a "clean room" in accordance with good manufacturing practices or for obtaining validation or licensing from any such Governmental Authorities, the responsibility for which shall be borne exclusively by Tenant.

2.4. Changes to Plans. Any changes to the Lab/Office Construction Plans, the Lab/Office Approved Plans, the Basis of Design, the URS, the Draft Manufacturing Area Schematic Plans, the Approved Manufacturing Area Schematic Plans, the Manufacturing Area Construction Plans or the Manufacturing Area Approved Plans (each, a "Plan") by Tenant (each, a "Tenant Change"), and any changes to the Approved Plans by Landlord (each, a "Landlord Change"), shall be requested and instituted in accordance with the provisions of this Article 2 and shall be subject to the written approval of the non-requesting party in accordance with this Work Letter. For purposes of clarity, any modification or change to the Basis of Design, the URS, the Draft Manufacturing Area Schematic Plans, the Approved Manufacturing Area Schematic Plans or the Manufacturing Area Construction Plans initiated or requested by Landlord is expressly not a Landlord Change and is not subject to this Section 2.4, and further, in connection with any such modifications or changes, Landlord, in its reasonable discretion, may extend the Estimated Phase 2 Delivery Date without liability to Tenant. For purposes of Section 2.4(a) below, the term "Change" shall mean either a Tenant Change or Landlord Change depending upon the party requesting the Change.

(a) Change Request. Either Landlord or Tenant may request Changes by notifying the other party thereof in writing in substantially the same form as the AIA standard change order form (or, with respect to Tenant Changes to Plans that are not Approved Plans, in any other form as Landlord may reasonably accept) (a "Change Request"), which Change Request shall detail the nature and extent of any requested Changes, including (a) the Change, (b) the party required to perform the Change and (c) any modification of the applicable Plan necessitated by the Change. The party requesting the Change shall be solely responsible for the cost and expense of any necessary revisions to the applicable Plan and any increases in the cost of the Tenant Improvements as a result of such Change. If the requesting party is the Tenant, and if the Change results in a delay of the Substantial Completion of either the Phase 1 Improvements or the Phase 2 Improvements after the Estimated Term Commencement Date, the Estimated Phase 1B Delivery Date or the Estimated Phase 2 Delivery Date, as the case may be, and as determined by Landlord, then, in accordance with Section 4.3 of the Lease, the Term Commencement Date (with respect to Phase 1A), or the date of Substantial Completion of the Phase 1B Improvements or the date of Substantial Completion of the Phase 2 Improvements, as the case may be, shall be the date that such dates would have occurred but for such delay, and Landlord shall have no obligation to perform overtime work or take any other extraordinary measures in order reduce or otherwise mitigate such delay. Change Requests shall be signed by the requesting party's Authorized Representative.

(b) If any Change requested by Tenant increases the cost of the Tenant Improvements in excess of the costs reflected on the Approved Lab/Office Budget or Approved Manufacturing Area Budget (as both terms are hereinafter defined), then Tenant may apply any remaining TI Allowance to pay the cost of such Change, but Tenant shall not have the right (and Landlord shall not be obligated) to apply any of the Additional Amount to pay the cost of such Change. Change Requests shall be signed by the requesting party's Authorized Representative.

(c) Approval of Changes. All Change Requests shall be subject to the other party's prior written approval, which approval shall not be unreasonably withheld, conditioned or delayed. The non-requesting party shall have five (5) business days after receipt of a Change Request to notify the requesting party in writing of the non-requesting party's decision either to approve or object to the Change Request. The non-requesting party's failure to respond within such five (5) business day period shall be deemed approval by the non-requesting party.

3. Requests for Consent. Except as otherwise provided in this Work Letter, Tenant shall respond to all requests for consents, approvals or directions made by Landlord pursuant to this Work Letter within five (5) days following Tenant's receipt of such request. Tenant's failure to respond within such five (5) day period shall be deemed approval by Tenant.

4. TI Allowance.

4.1. Application of TI Allowance. If the entire TI Allowance is not applied toward or reserved for the costs of the Tenant Improvements, then Tenant shall not be entitled to a credit of such unused portion of the TI Allowance. If the entire Excess TI Costs advanced by Tenant to Landlord are not applied toward the costs of the Tenant Improvements, then Landlord shall promptly return such excess to Tenant following completion of the Tenant Improvements.

5. Approval of Budgets for the Tenant Improvements.

5.1. Landlord and Tenant agree that the project budget for the Lab/Office Improvements attached hereto as Exhibit B-3-a, which budget shall include a fee for Landlord's role in managing and reviewing the Tenant Improvements (the "Approved Lab/Office Budget"), depicts the parties' understanding of the estimated cost to complete the Lab/Office Improvements.

5.2. Landlord and Tenant agree that the project budget with respect to the Manufacturing Area Improvements attached hereto as Exhibit B-3-b (the "Preliminary Manufacturing Area Budget") is a preliminary budget for the estimated cost of the Manufacturing Area Improvements based on the Basis of Design and URS, which such Basis of Design and URS shall be superseded by the Manufacturing Area Approved Plans. Upon the parties' agreement of the Manufacturing Area Approved Plans, the Preliminary Manufacturing Area Budget will be revised accordingly, and upon the parties' written agreement thereof, such revised Preliminary Budget shall be the final approved budget (the "Approved Manufacturing Area Budget") for the cost of the Manufacturing Area Improvements. Notwithstanding anything to the contrary set forth elsewhere in this Work Letter or the Lease, Landlord shall not have any obligation to expend any portion of the TI Allowance until Landlord and Tenant shall have approved in writing the Approved Manufacturing Area Budget.

6. Miscellaneous.

6.1. Incorporation of Lease Provisions. Sections 40.6 through 40.19 of the Lease are incorporated into this Work Letter by reference, and shall apply to this Work Letter in the same way that they apply to the Lease.

6.2. General. Except as otherwise set forth in the Lease or this Work Letter, this Work Letter shall not apply to improvements performed in any additional premises added to the Premises at any time or from time to time, whether by any options under the Lease or otherwise; or to any portion of the Premises or any additions to the Premises in the event of a renewal or extension of the original Term, whether by any options under the Lease or otherwise, unless the Lease or any amendment or supplement to the Lease expressly provides that such additional premises are to be delivered to Tenant in the same condition as the initial Premises.

6.3. Punch list. Within ten (10) days after the date of Substantial Completion of the Tenant Improvements, Landlord's Authorized Representative and Tenant's Authorized Representative shall inspect the Premises and identify "punch list" items of the Tenant Improvements (i.e., minor defects or conditions in the Tenant Improvements that do not materially and adversely interfere with Tenant's use and occupancy of the Premises for the permitted use set forth in the Lease) and jointly prepare a written list of such "punch list" items. Landlord shall use commercially reasonable efforts to complete all "punch list" items within thirty (30) days after such inspection, subject to Force Majeure or any delay caused by the action or omission of Tenant, its employees, contractors or representatives.

6.4. Warranties. To the extent assignable, Landlord will assign all warranties obtained by Landlord in connection with the Tenant Improvements, including, without limitation, any equipment for the Premises installed by Landlord; provided, however, that, notwithstanding any such assignment, Landlord shall also retain

the right to enforce such warranties against the applicable contractor, at Landlord's sole option, and further provided that if any such warranties are not assignable, then Landlord, upon written notice from Tenant, shall use commercially reasonable efforts to enforce such non-assignable warranties. With respect to those warranties that have been assigned to Tenant, upon Tenant's written request of Landlord and at Tenant's sole cost and expense, Landlord shall reasonably cooperate with Tenant in enforcing such warranties; provided, however, that Landlord shall no have obligations under this sentence in connection with any litigation between Tenant and the provider of such warranty.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Work Letter as a sealed Massachusetts instrument to be effective on the date first above written.

LANDLORD:

BMR-SIDNEY RESEARCH CAMPUS LLC,
a Delaware limited liability company

By: /s/ William Kane
Name: William Kane
Title: Senior Vice President, Boston Market Lead

TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, Landlord and Tenant have executed this Work Letter as a sealed Massachusetts instrument to be effective on the date first above written.

LANDLORD:

BMR-SIDNEY RESEARCH CAMPUS LLC,
a Delaware limited liability company

By: _____
Name: _____
Title: _____

TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By: /s/ Roger Pomerantz
Name: Roger Pomerantz
Title: President, CEO, Chairman

EXHIBIT B-1-a

TENANT IMPROVEMENT PLANS FOR LAB/OFFICE IMPROVEMENTS

[SEE ATTACHED]

ARCHITECTURAL BASIS OF DESIGN

Seres Therapeutics
200 Sidney Street
Cambridge, Massachusetts

R.E. Dinneen Architects & Planners, Inc.
22 October 2015

TABLE OF CONTENTS

SECTION 1:	**Office Areas**
	Reception Areas, Open Office Areas, Executive Offices, Private and Shared Offices, Conference Rooms, Telephone Rooms, Break Room, Coffee Bars, and Copy Areas.
FUNCTION:	Office Space.
ARCHITECTURAL:	
Flooring:	Carpet tile for direct-glue installation; installed budget at $40.00 SY at 4th floor only; installed budget at $35.00 SY at the balance of the spaces. Porcelain tile, by Landlord, at 4th Floor Elevator Lobby.
	Solid Vinyl Wood Plank at Break Room and Coffee Bars.
	Wall Base to be 4” high straight at carpet areas, cove at vinyl plank.
Wall Finish:	Tenant Standard eggshell finish, latex paint – Benjamin Moore base wall paint plus 6 accent colors.
Ceiling Height/Finish:	9’-6” AFF @ Floors 1 & 2; 8’-6” @ Floor 4 (coordinate with existing mechanicals); 2’x2’ tegular acoustical tile (white) Armstrong ‘Ultima’ 1912 with 1/8” reveal Silhouette 9/16” Slot-bolt grid (white or clear anodized); GWB ceiling soffits with smooth finish on metal stud system at various heights.
Door/Frame/Hardware:	Glass entrance doors and sidelights shall match building standard: 7’-8” high frameless glass, full height sidelights, and single glass door hardware, with mag locks and motion sensor release.
	Fourth floor Seminar Room and Board Room shall be 7’-0” high tempered glass doors with 18” transom, recessed closer, pivot hinges and 8’-6” frameless glass sidelites. Break Room doors shall be 7’-0” high tempered glass doors with 18” transom, and Dorma sliding door hardware, with 8’-6” frameless glass sidelites.
	Add Alternate: DIRTT aluminum framed glazing system, 8’-6” tall, with 36” acoustically sealed swing doors at the Seminar and Board Rooms and acoustically sealed sliding doors at the Break Room.
	All Small Conference Room, Private and Shared Office and Telephone Room doors shall be 8’-0” solid core wood with hickory stained oak veneer, full-glass lite and hollow metal frames. Butt-glazed sidelites at Medium (and above) Conference Rooms and Executive offices.
	Film Allowance Required for full height glazing sidelites and glass doors.
Millwork:	Fourth Floor Elevator Lobby reception workstation shall be solid surface counter and wood veneer plywood, and stainless steel column enclosure
	Copy Room cabinets to be premium plastic laminate base and wall units with laminate countertop.

	Coffee Bar cabinets to be premium plastic laminate base and wall units with 26” tall plastic laminate backsplash; Break Room cabinets to be premium plastic laminate base and wall units with solid surface countertops and glass tile backsplash.
Equipment:	Operable partition by Hufcor with marker board and end glass panels. STC panel rating shall be 50; glass rating shall be 45.
	4’ x 6’ glass marker boards at Conference Rooms; (2) 4 x 4 glass marker boards at Board Room; 4 x 4 Porcelain enamel steel marker boards at Private Offices
	Tenant furnished / contractor installed appliances: two (2) french door refrigerators, two (2) built-in microwave ovens and dishwasher at Break Room; one (1) french door refrigerator and one (1) built-in microwave at Coffee Bars.
	Flat screen TVs (in Boardroom, Seminar Room and Medium Conference Rooms, and A/V components shall be by Tenant.
Window Treatment:	Building Standard window treatment, consisting of horizontal mini-blinds, are to be installed at all perimeter windows. Supplemental window treatment for room darkening or aesthetic value are to be provided by Tenant for installation by contractor.

SECTION 2	**Research Laboratories**
	R & D Lab, Bioprocessing-Fermentation Lab, Pathogen Lab, Molecular Technologies Suites, and Bioprocessing Formulations.
FUNCTION:	General laboratory environment.
ARCHITECTURAL:	
Flooring:	Vinyl Composition Tile (VCT) shall be Mannington Commercial “Progressions”, in a 4-color pattern; with 4” coved Wall Base.
Wall Finish:	Tenant Standard eggshell finish, latex paint – Benjamin Moore base wall paint plus 1 accent color.
Ceiling Height/Finish:	9’-6” AFF (coordinate with existing mechanicals); 2’-0” x 4’-0” x $3/4$” mineral fiber, square edged, Armstrong Ultima 1913; and 15/16” Armstrong Prelude XL.
Door/Frame/Hardware:	Doors – painted metal; building standard paint grade doors at common corridor: 3’-0” x 7’-0” no-lite (Scope Rooms); 3’-0” x 7’-0”, half-lite (2nd Floor Shared Equipment, & secondary doors at Molecular Technology Suite and Tissue Culture Suite); Pair Doors: 3’-0” x 7’-0” & 1’-0” x 7’-0”, no lite (all common corridor Lab doors); Pair Doors: 3’-0” x 7’-0” & 1’-0” x 7’-0”, half-lite in active leaf (balance of Lab doors). Frames – Hollow metal, alkyd enamel paint finish. Hardware – Sargent 10 Line Cylindrical Lockset, B Lever Design with L Rose Design, both in finish 626 “satin chromium plated”; Hinge – Stanley standard weight ball bearing FBB179 ANSI A8112, 4-1/2” x 4-1/2” steel; Floor/Wall stop – Rockwood in satin 441/406-8 chrome finish. Closers, flush bolts, armor plate, silencers.
Casework:	Fixed Casework at all sink units: metal case with metal cabinet/drawer fronts and 1” epoxy tops; metal utility chase with removable panel. Modular Table Benches shall be painted, welded steel frame, with tubular steel uprights supporting phenolic re-agent shelving and electrical plug strip, suspended metal cabinet or drawer units (1 p/table, 50% distribution), and 1” thick epoxy top. Wall shelving shall be phenolic on painted metal brackets and standards.
EQUIPMENT:	
	Lab equipment, floor and bench mounted, per Equipment Matrix, by Tenant; Two existing fume hoods shall be repaired, electrostatically painted, and re-used on Floor 1. One existing fume hood shall be repaired, electrostatically painted, and relocated on Floor 2.

SECTION 3	**Tissue Culture Suite**
	Immunology Lab, Tissue Culture 1, Tissue Culture 2, Equipment Room
FUNCTION:	Tissue Culture laboratory environment.
ARCHITECTURAL:	
Flooring:	Sheet vinyl flooring, welded seams, with integral flash cove base.
Wall Finish:	Tenant Standard eggshell finish, latex paint – Benjamin Moore base wall paint.
Ceiling Height/Finish:	Tenant Standard: 9’-6” AFF; 2’-0” x 4’-0” x 1/2” USG “ClimaPlus” vinyl faced sheetrock, square edged tile (white), and USG Donn DXLA 15/16” aluminum capped exposed tee grid system (white).
Door/Frame/Hardware:	See previous.
Casework:	See previous.
EQUIPMENT:	Emergency Eyewash/Shower units, per plan.
	Lab equipment, floor and bench mounted per equipment matrix, by Tenant.

SECTION 5 **Pilot Plant**

SECTION 6 **Lab Support Spaces**

Glass Wash Room, Cryo Storage Service Corridors, Janitor's Closets, and Receiving Area (including Offices, Sampling, Shipping Prep, and Caged Storage Areas).

ARCHITECTURAL:

Flooring: VCT Composition Tile (VCT) shall be Mannington Commercial "Progressions", in a 4-color pattern with 4" coved Wall Base.

Epoxy Dur-A-Quartz flooring, abrasion resistant, with integral flash cove base at Glass Wash.

Wall Finish: Tenant Standard eggshell finish, latex paint – Benjamin Moore base wall paint.

Acrylic epoxy paint on moisture and mildew resistant, insulated GWB construction. Perimeter demising walls to have moisture barrier.

Ceiling Height/Finish: 9'-6" AFF; 2'-0" x 4'-0" x $^{3}/_{4}$" mineral fiber, square edged, Armstrong Ultima 1913; and 15/16" Armstrong Prelude XL; insert TC ceiling at Glass Wash.

Door/Frame/Hardware: Doors – solid core wood with clear finish, maple face veneers;
3'0" x 7'-0", no lite at Janitor's closets;
3'-0" x 7'-0", with half-lite at Offices;
Pair Doors – 3'-0" x 7'-0" and 1'-0" x 7'-0" no lite, at common corridor;
3'-0" x 7'-0" and 1'-0" x 7'-0" with half-lite at Sampling, Shipping Prep and Glass Wash.

Caging with 4'-0" sliding doors at Quarantine, Reject Material and General Storage.

Frames – Hollow metal, alkyd enamel paint finish.

Hardware – Sargent 10 Line Cylindrical Lockset, B Lever Design with L Rose Design, both in finish 626 "satin chromium plated"; Hinge – Stanley standard weight ball bearing FBB179 ANSI A8112, 4-1/2" x 4-1/2" steel; Floor/Wall stop – Rockwood in satin 441/406-8 chrome finish. Closers, flush bolts, armor plate, silencers.

Casework: Stainless steel sink assembly at Glass Wash, Type 304; 1 5/8" diameter; tube legs with bullet leveling feet; 1" diameter support bars at rear and sides; 24" x 18" integral sink with marine edge; 6" integral backsplash.

Modular Tables at Receiving/Shipping, per previous.

EQUIPMENT: Two (2) Steam Autoclaves, Full Height Glass Wash and undercounter Glass Wash at Glass Wash Room.

SECTION 7	**Basement Storage Areas**
ARCHITECTURAL:	
Flooring:	N/A
Wall Finish:	Caging System: varied heights due to existing pipe, conduit and beam obstructions.
Ceiling Height/Finish:	N/A
Door/Frame/Hardware:	Caging with 4’-0” sliding doors at Quarantine, Reject Material and General Storage.
EQUIPMENT:	Power and Data Drops in support of Server Racks (by Tenant), refrigerator, freezers and mechanical equipment.

Seres Therapeutics
Tenant Improvement

200 Sidney Street
Cambridge, MA

Office/Lab/ACF
Basis of Design
Draft 10.08.2015

October 14, 2015

Prepared By:

AHA CONSULTING ENGINEERS

Lexington, MA | Cambridge, MA | Atlanta, GA | Washington, DC
24 Hartwell Avenue, Third Floor | Lexington, MA 02421
781-372-3000

Based on 8th Edition, Massachusetts Building Code

Fire Protection

The building is provided with an existing automatic wet-pipe sprinkler protection and automatic wet standpipes in accordance with 780CMR, and NFPA 13. An existing fire pump serves the standpipe and sprinkler systems for the building.

The system design shall include the tenant area coverage shall have concealed sprinkler heads.

Fire Protection design shall be based upon the following NFPA 13 criteria:

Procedure Rooms and Holding Rooms (without fume hoods), hallways, holding, gowning and cage prep: Light Hazard

Procedure rooms and Holding Rooms (with fume hoods), storage rooms, and receiving rooms: Ordinary Hazard Group 1

Automatic sprinkler systems in areas of Light Hazard Occupancy are designed with a minimum design density of .10 GPM per square foot over the hydraulically most remote 1500 square feet. Maximum protection area per sprinkler head shall be 225 square feet for upright and pendent sprinkler heads. Hose allowance shall be 100 GPM.

Automatic sprinkler systems in areas of Ordinary Hazard Group I Occupancy are designed with a minimum design density of .15 GPM per square foot over the hydraulically most remote 1500 square feet. Maximum protection area per sprinkler head shall be 130 square feet for upright and pendent sprinkler heads. Hose allowance shall be 250 GPM.

No specialty fire suppression systems are provided

Plumbing

RO, potable and non-potable water (hot & cold, vacuum, compressed air, and tempered water systems shall be provided by the base building. Tenant shall connect to existing distribution without tenant space and re-route distribution piping to suit new lab areas, lab benches, hoods and ceiling panels per the equipment matrix.

The existing dual stage pH neutralization system shall be as currently provided by the base building with existing risers. Tenant shall route new distribution piping to existing risers and connect with a sample testing trap configuration prior to connection to risers.

Tenant shall be responsible for specialty gas systems (N2, CO2, etc) with distribution piping routed to locations indicated in the equipment matrix. Specialty gas vendor shall provide tanks. Manifolds will part of the distribution system.

Office area kitchenette will have domestic cold water, waste and vent connected to existing building services. Hot water will be generated by a point of use heater below the sink or above ceiling depending on whether a dishwasher is provided in space.

Non-potable hot water is generated by base building duplex gas fired water heaters located in the penthouse mechanical room and shall serve all laboratory sinks and equipment throughout the tenant space.

Floor drains shall be provided at all new equipment requiring drains such as ice makers, glass washers, autoclaves, steam generators, etc.

RO shall be piped to the humidification units serving the ACF Area. All new RO piping shall be installed in a continuous loop, with no dead legs. Piping shall match existing polypropylene material, shall be joined utilizing socket weld joints, and shall be continuously supported to ensure no trapped sections of piping. All piping shall be installed with a positive pitch to allow all section to drain back to risers or sink outlets.

ACF sinks in the receiving and gowning rooms shall be piped to the building sanitary drainage & vent system, sinks in procedure room's connection to the lab waste/vent system with a sampling port.

Cage wash and autoclave equipment shall have self-contained electric steam generators with cool down tanks. A separate cold water connection with connected temperature sensor in the floor drain trap shall be provided to protect against cool down system failure, and to prevent the discharge of water in excess of 140 degrees F into the plumbing drainage system in accordance with the MA State Plumbing Code.

HVAC

Equipment from the base building is sized to adequately maintain a cooling temperature within the Tenant areas of an inside condition of 75ºF, dry bulb at 50% relative humidity; with outside condition of 91ºF dry bulb and 74ºF wet bulb during summer and 72ºF dry bulb inside at zero degree dry bulb outside during the winter.

The allowance for occupancy density for air conditioning design is one (1) person for 400 square feet of lab and one (1) person for 200 square feet of office.

Air flow from the base building system for the lab area is a variable air volume system with supply and exhaust air capacity at a rate of 2 CFM/SF.

Air flow from the base building system for the office area is a variable air volume, with a plenum return system with a capacity of 1.25 CFM/SF.

Hot water shall be piped to all variable air volume units from the base building distribution system.

Variable air terminal unit shall serve the IT/Data Room.

The main server room will have a split system air conditioning unit on generator power to operate under normal and generator conditions. The air cooled condensing unit will be located toward the loading dock area.

Existing cold rooms shall be storage only, and will not require any additional ventilation.

BSC's which are 60% exhausted will be ducted into the general exhaust system thru a constant flow terminal unit. BSC's which are 100% exhausted will ducted to the general exhaust system thru a booster fan and constant flow terminal unit. The BSC's which are 100% exhausted will be combined where possible on a single booster fan.

Six foot fume hoods shall be constant type rated at 100 FPM face velocity at 18 inch sash height opening (785 CFM/hood).

ACF Area shall be designated for 72°± 2° dry bulb, 40% (winter) to 55% (summer) RH range in the holding rooms and 72°± 2° dry bulb, 25% (winter) to 55% (summer) RH in the remaining rooms. Constant flow terminal units shall be connected to the base building supply air system with an independent tenant exhaust air system with dual fans. Each fan will be rated for 55% capacity of the total system, with both fans operating during normal and generator power conditions.

- Procedure rooms with and without hoods shall have a minimum of 10 air changes per hour.
- Holding rooms with and without hoods shall a minimum of 15 air changes per hour.
- All other rooms and corridors will be balanced to maintain pressure relationships per air flow diagram.

A 5 ton split system air conditioning unit with 20 KW electric heating coil shall be cross connected into the ACF Area ductwork distribution system with dampers to provide stand – by conditions for the holding rooms only. Air handling unit shall be located in the basement and connected to an intake plenum with refrigerant piping connecting the air cooled condensing unit located on grade. The heating and cooling functions will not operate at the same time and will be control by the average temperature in the holding rooms.

Primary electric in line humidifier shall be installed to serve the entire ACF. Humidifiers shall be stainless steel and served from the RO system. Primary humidifier shall be controlled from a common exhaust duct from the ACF. Secondary humidifiers shall be install to serve each holding room and controlled from wall mounted humidistats. Humidifiers are not operational during normal power outage.

Conference room shall be on independent zones. Open offices and closed offices shall be grouped in areas per the HVAC zoning plan.

Automatic Temperature Control system shall be an extension of the base building system. The following requirements shall be incorporated into the control of Seres Therapeutics systems for proper operation and energy savings:

- Under normal power all air and water valves shall modulate to maintain set point temperature.
- In occupied mode the lab and office air valves shall modulate between maximum and minimum set points.
- In un-occupied mode, the lab valve will reset minimum to 4 air changes and the office air valves will close. Terminal units shall cycle to maintain night set back temperatures.
- The ACF control will not change under any condition.
- On generator power all supply and exhaust air valves in the office and lab shall fail closed, except the fume hood air valves which shall remain operational. In the ACF the supply valve shall fail closed, the exhaust valve shall remain operational, and the cross over dampers shall switch operation to allow for the backup system/sequence to function, serving the one holding room.

Electrical

Lighting Requirements:

In general, lighting will be provided in all spaces. New fixtures will be as proposed by the architect and lighting designer as required to meet space lighting requirements as proposed below.

- Office Areas: 30-40 foot candles.
- Laboratory Areas: 60-75 foot candles.
- Lab Support Areas: 50 foot candles.

Lighting controls will be provided in all spaces as required to meet the current energy code.

- Open office areas controlled via occupancy sensors with separate controls for lighting in daylight zones, (as defined as 15’ from exterior glazing) manual override switch stations and light reduction controls.
- Enclosed office controlled via local occupancy sensors with integral or separate manual on override switch stations.

- Laboratory areas controlled via programmable microprocessor based lighting control system with separate controls for lighting in daylight zones, (as defined as 15’ from exterior glazing) manual override switch stations and light reduction controls.

Power Requirements:

In general, power will be provided as required to meet the program requirements and as dictated by the equipment and utility matrix and associated equipment cut information.

Office Areas:

- Provide duplex receptacles and a single tele/data outlet per enclosed office. Open office furniture shall be fed from a multi-wire, 4-circuit feed. Conference and multipurpose areas will have additional power for equipment and in floor locations as required by owner’s telecommunications and audio/video programming.

Laboratory Areas:

- Bench/Casework; provide surface raceway with 20-ampere, 120-volt duplex receptacles mounted 18 inches on center to match existing equipment. Two (2) 20 Amp circuits per bench. Fume Hoods provide (2) dedicated 20 ampere, 120 volt circuits. Where shown on plans, overhead ceiling utility panels will provide power to free standing equipment and bench areas. Provide tel/data and alarm point box/raceway as required by equipment matrix.

Lab Support Areas:

- Provide dedicated duplex receptacles along perimeter walls and 208-volt receptacles as required by equipment matrix. Provide tel/data box/raceway per equipment matrix.

Other requirements:

- Security System – new power locations as required by security system component layouts. (Security system by owner)

- Telephone/Data rooms – new power locations as required by system component layouts. (Tel/Data system by owner)

Power check metering:

- Electronic check metering equipment furnished by tenant to monitor tenant power usage.

Standby Power and Generators:

An existing diesel fired generator currently supplies power to tenant lab systems equipment, mechanical equipment and areas throughout the building. Existing

distribution will be modified to serve tenant. Branch circuits will be modified to accommodate the following standby power loads:

Office Area:	None
Laboratory Areas:	As required by equipment matrix
Vivarium:	See section below.
Data Room:	As determined by owner.
Mechanical Systems:	Selected ACF Systems and HVAC Controls

Vivarium:

The vivarium Electrical system will be served by the modified normal and optional stand-by power distribution in the building.

Lighting Controls:

- Holding rooms shall have a local electronic programmable timer switch for day/night settings (adjustable with DST functionality built in) located outside the door of each holding room.
    - Animal lighting system shall provide 10-30 FC utilizing full spectrum fluorescent or LED sealed and gasketed fixtures. Holding room lights shall be dimmable locally within each holding room and have a local override located outside the door of each holding room.
- Procedure Rooms and remaining areas: Full spectrum fluorescent or LED lighting system shall be controlled via programmable microprocessor based lighting control system. Lighting system shall provide 50-75 FC.
- Other Spaces: Lighting controls to meet the local energy Code Chapter 13 requirements. Lighting will be provided utilizing 1’x4’, 2’x2’ and 2’x4’ lensed fluorescent fixtures to provide sufficient lighting levels.

Power:

- Bench/Casework and equipment power will be provided as required in the equipment and utility matrix. Tel/data and alarm point locations will be provided as required in the equipment and utility matrix.

Standby Power:

- Holding Rooms: Lighting will be provided on optional standby power. Each animal holding rack shall be provided with duplex receptacle on the existing optional standby power. In addition, optional standby power will be provided as required in the equipment and utility matrix.
- HVAC Systems as required

Fire Alarm

Base building fire alarm system shall be fully addressable and expansion capabilities, Tenant shall expand from the base building system and shall be limited to the renovation area.

ACF fire alarm devices shall be low frequency sounder type with separate strobe devices.

Communications

Locations for wireless networking will be provided per the tenant's direction.

Conduits exist to the 1st, 2nd, and 4th floors for tenant communications vendor to install wiring, devices and terminations.

Box and conduit for security devices will be provided at access points as indicated by the architect.

SERES THERAPEUTICS

TENANT IMPROVEMENTS
200 SIDNEY STREET,
CAMBRIDGE, MASSACHUSETTS

SCHEMATIC DESIGN

PROJECT DIRECTORY

DRAWING LIST

SITE MAP

a.e. Dennen
Architects &
Planners, inc.

BioMed Realty

SERES

RICHMOND

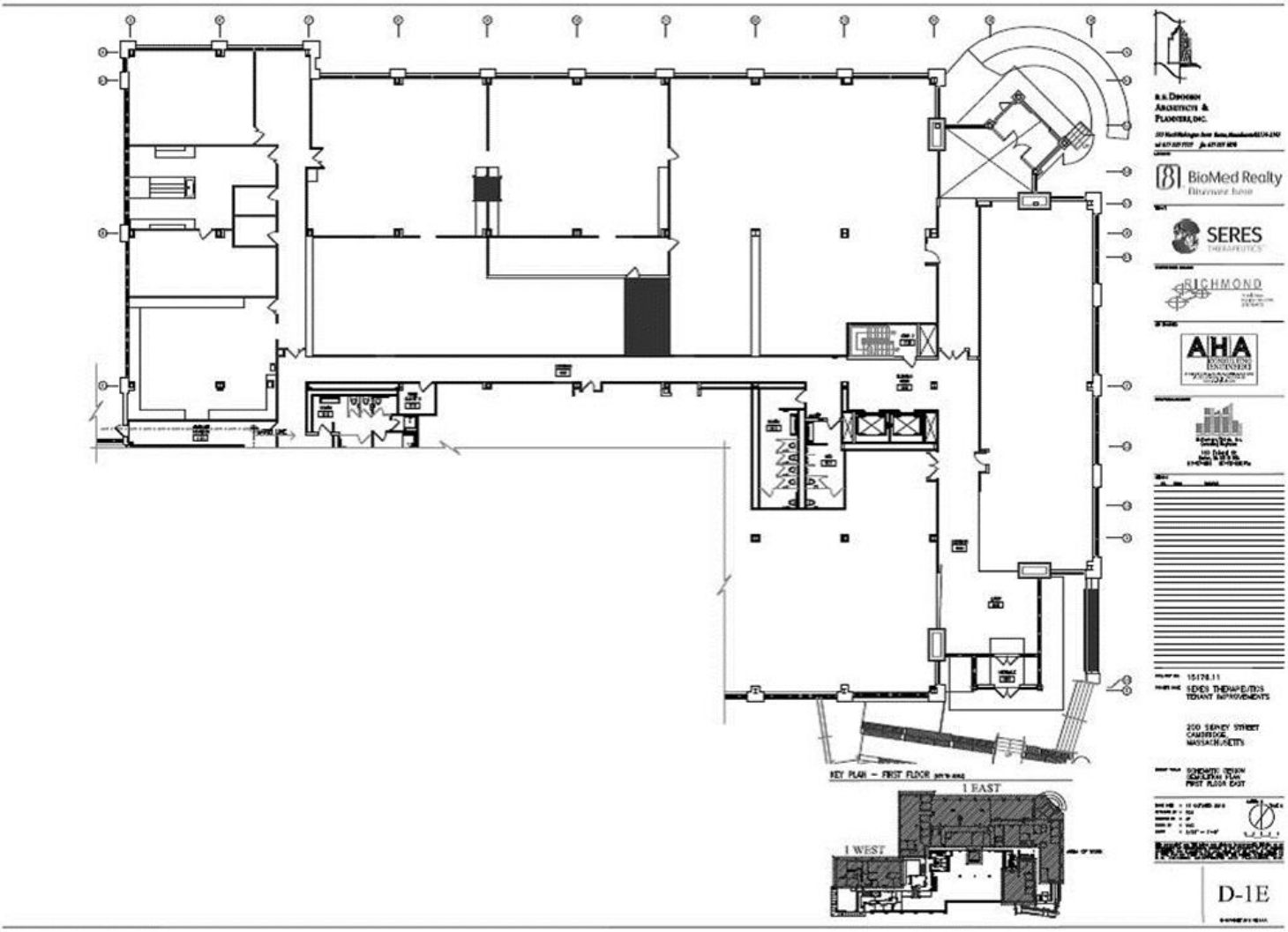
AHA

15176.11

SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

T-1


KEY PLAN – FIRST FLOOR
1 EAST
1 WEST
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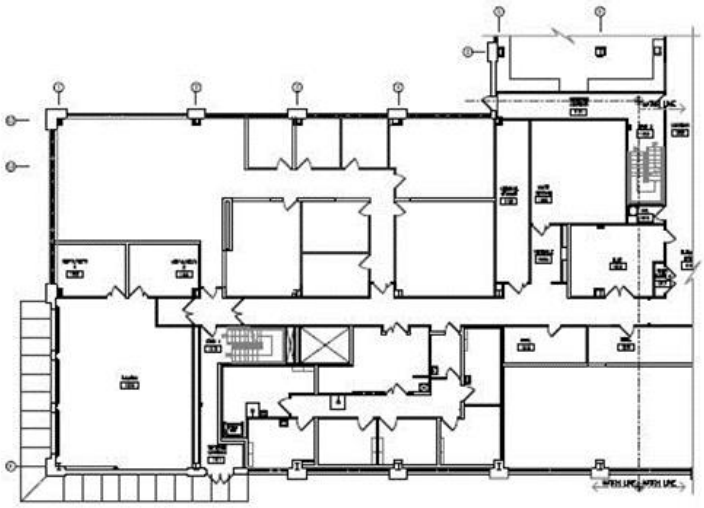
SERES
AHA
D-1E



KEY PLAN – FIRST FLOOR

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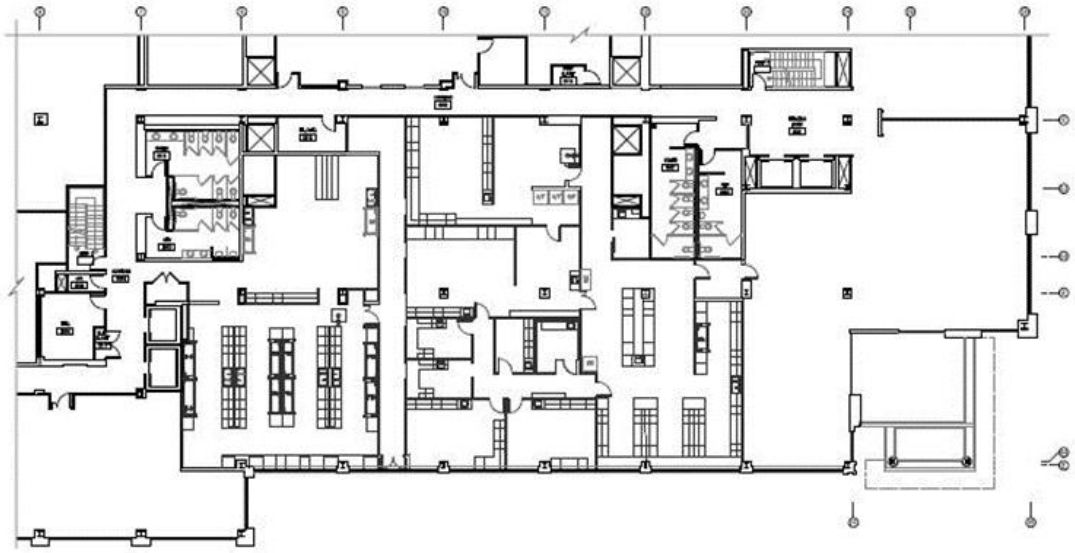
200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

D-1W



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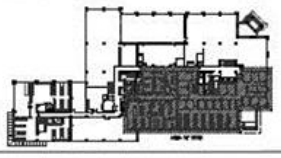

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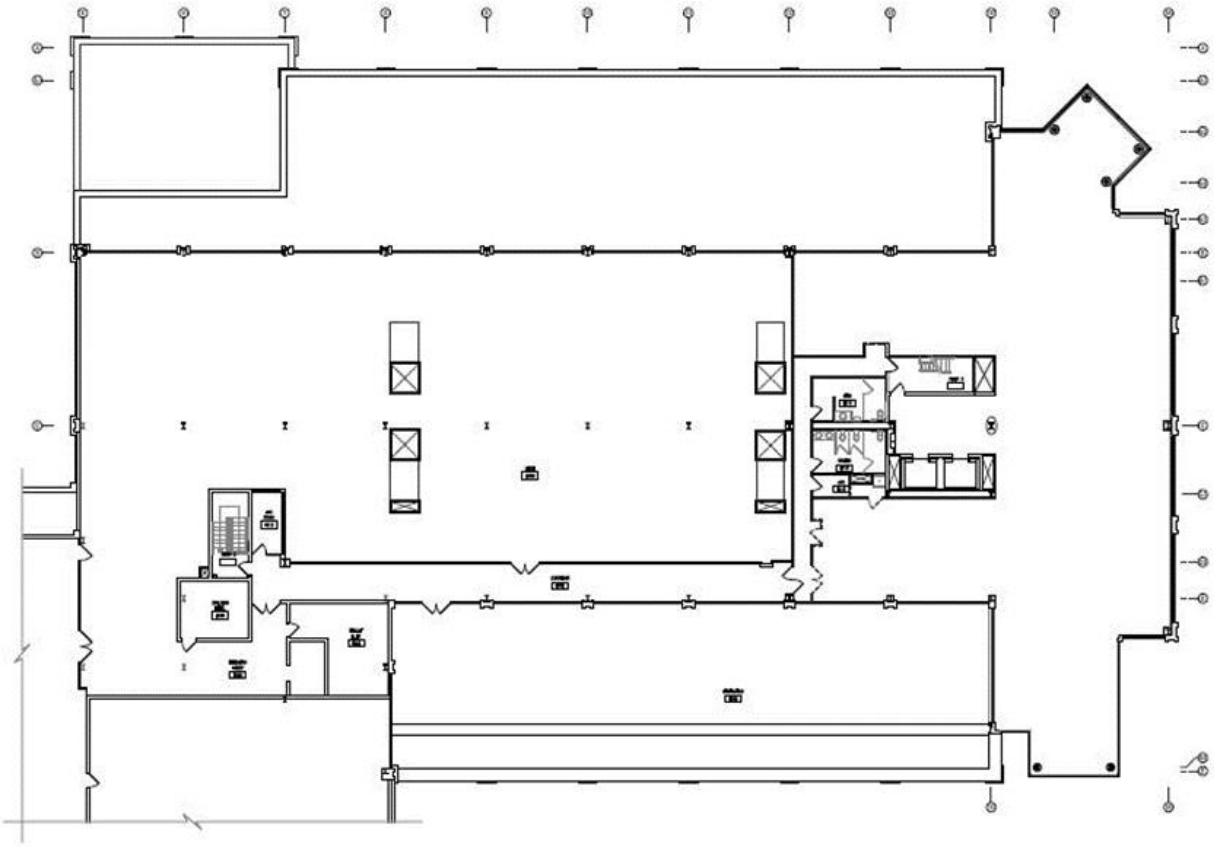

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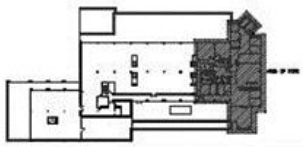

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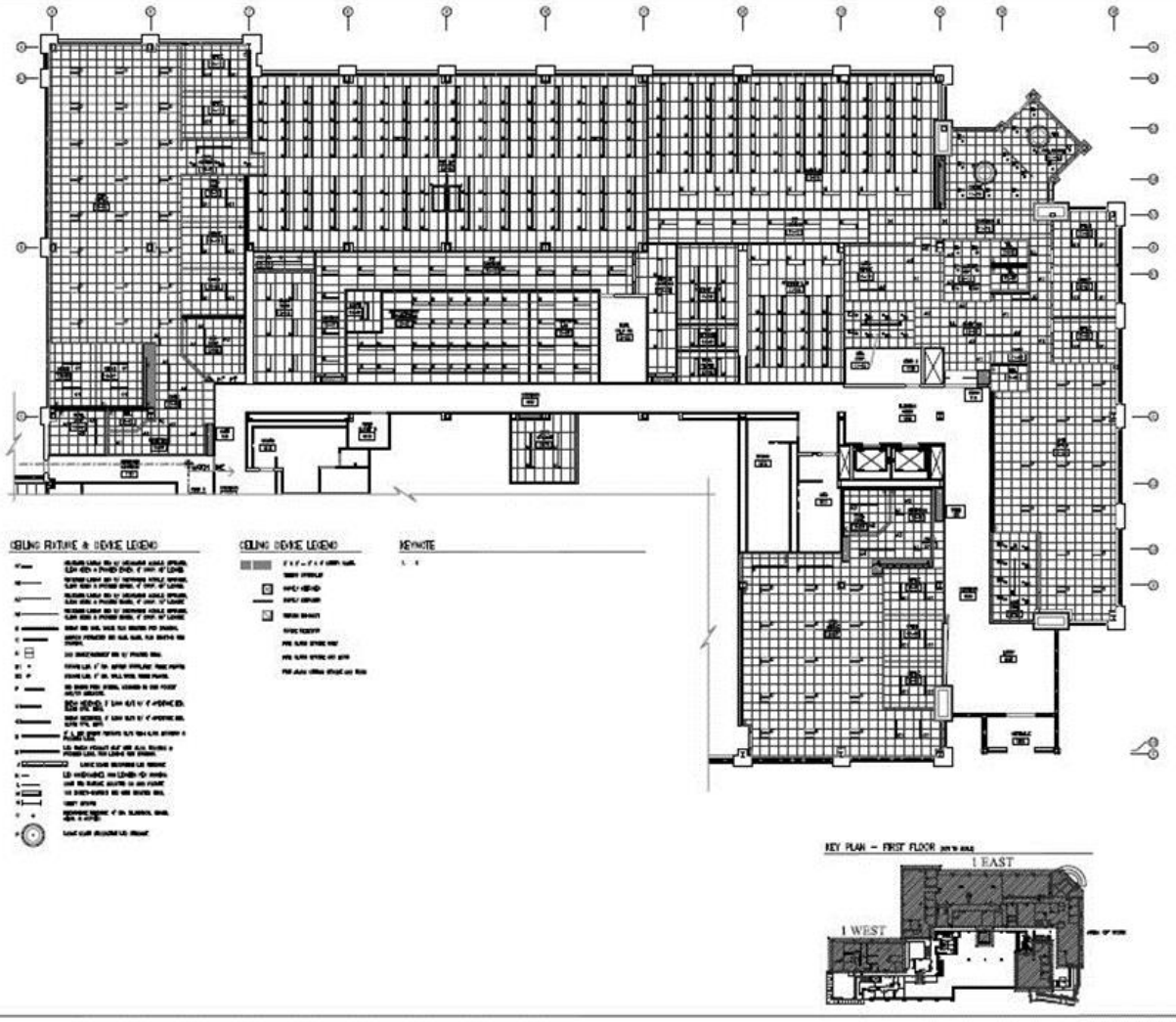

CEILING FIXTURE & DEVICE LEGEND

CEILING DEVICE LEGEND

KEYNOTE

KEY PLAN – FIRST FLOOR

S.A. DAVISON ARCHITECTS & PLANNERS, INC.

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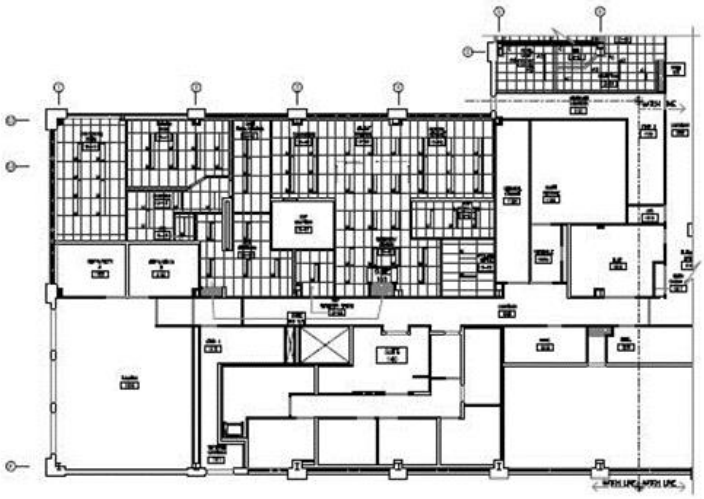
SERES THERAPEUTICS TENANT IMPROVEMENTS

200 SIDNEY STREET CAMBRIDGE, MASSACHUSETTS

REFLECTED CEILING PLAN FIRST FLOOR EAST

A-2.1E



CEILING FIXTURE & DEVICE LEGEND

CEILING DEVICE LEGEND

KEYNOTE

KEY PLAN – FIRST FLOOR

S.A. Dennison Architects & Planners, Inc.

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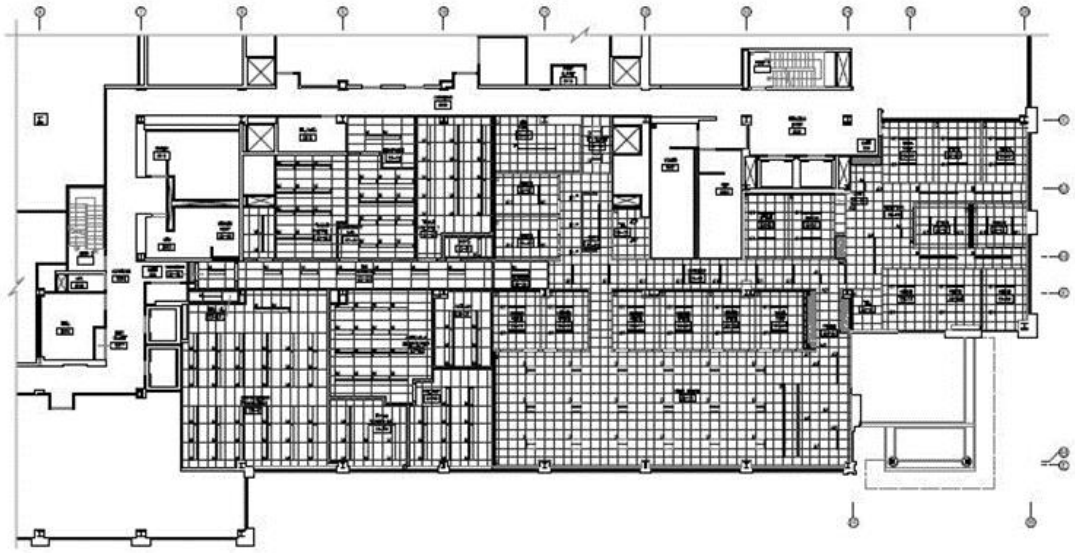
SERES THERAPEUTICS TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

REFLECTED CEILING PLAN
FIRST FLOOR WEST

A-2.1W

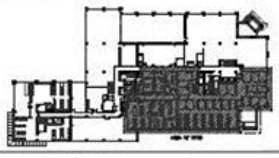


CEILING FIXTURE & DEVICE LEGEND

CEILING DEVICE LEGEND

KEYNOTE

KEY PLAN – SECOND FLOOR



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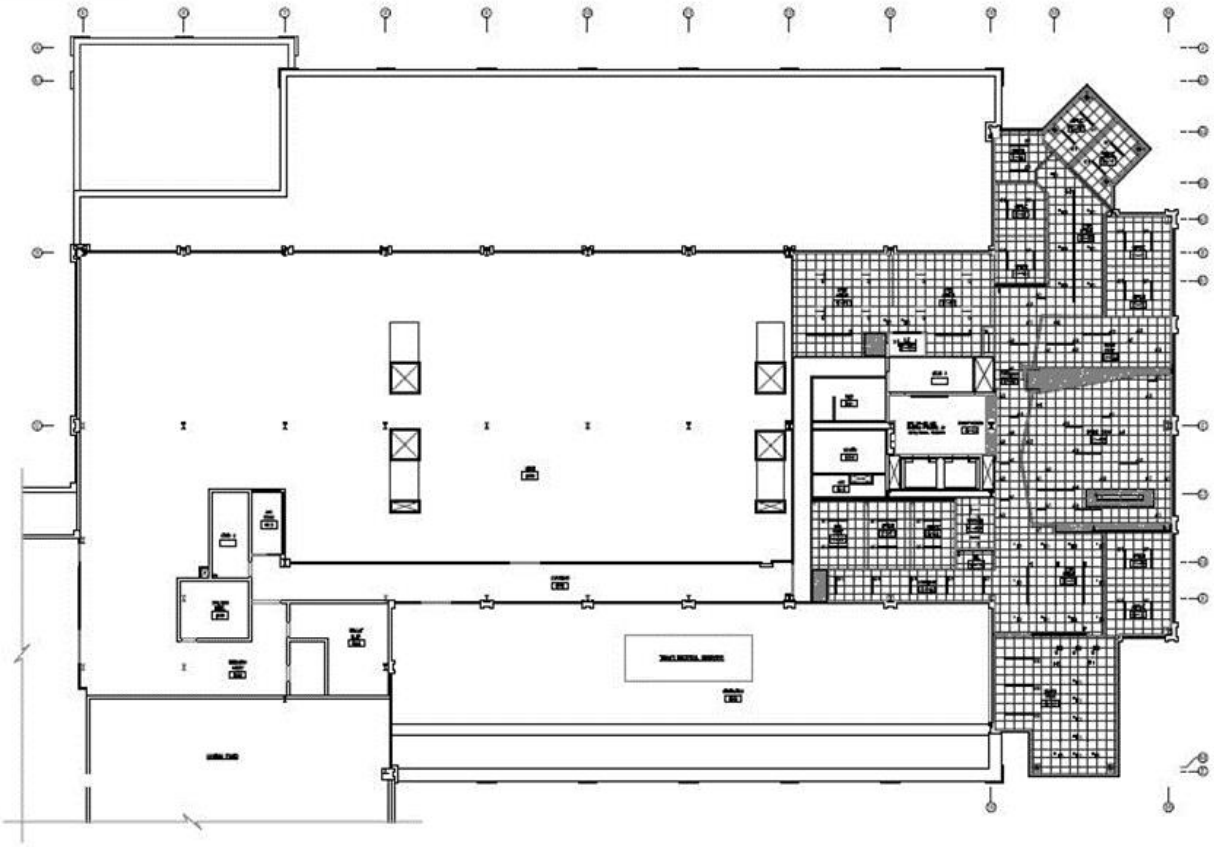
SERES THERAPEUTICS TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

REFLECTED CEILING PLAN
SECOND FLOOR

A-2.2

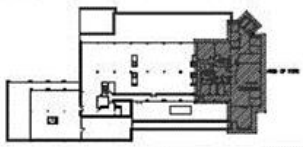


CEILING FIXTURE & DEVICE LEGEND

CEILING DEVICE LEGEND

KEYNOTE

KEY PLAN – FOURTH FLOOR



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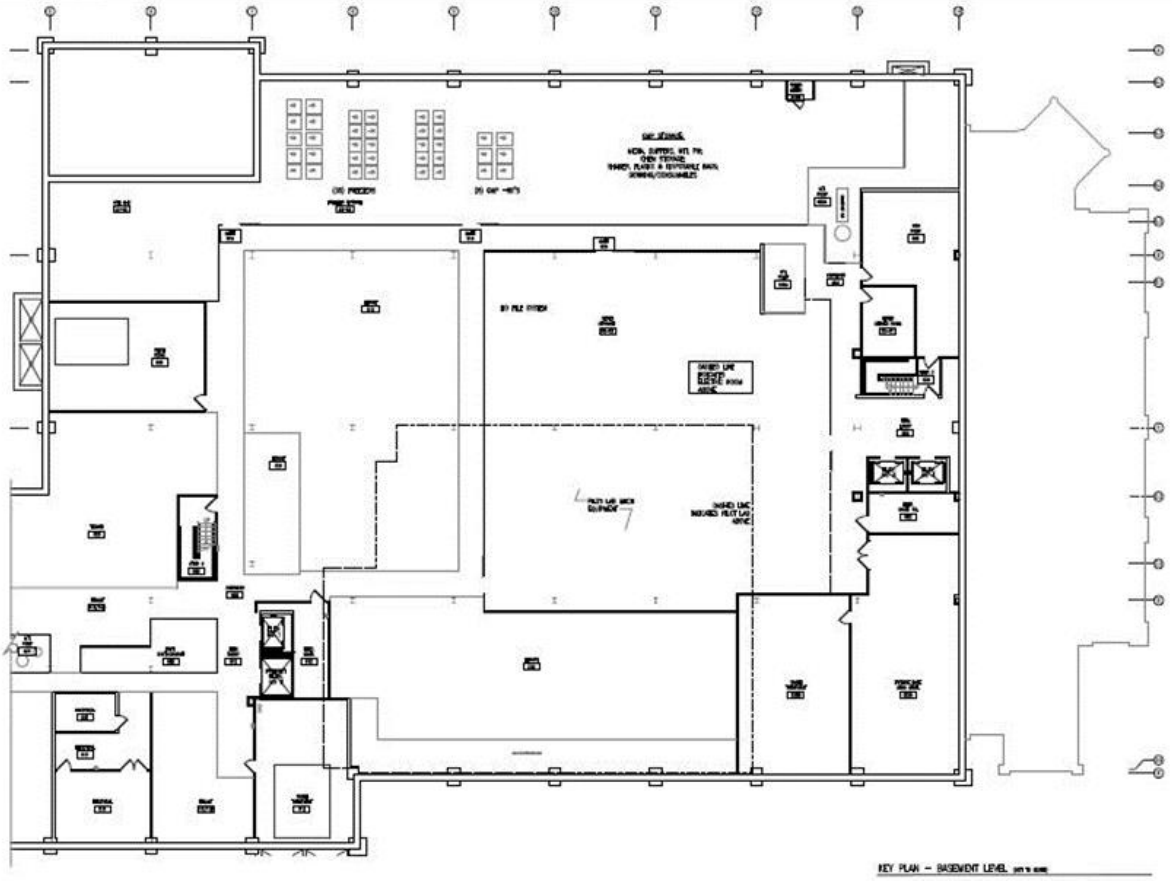
200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

A-2.4



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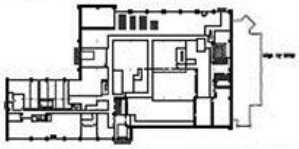

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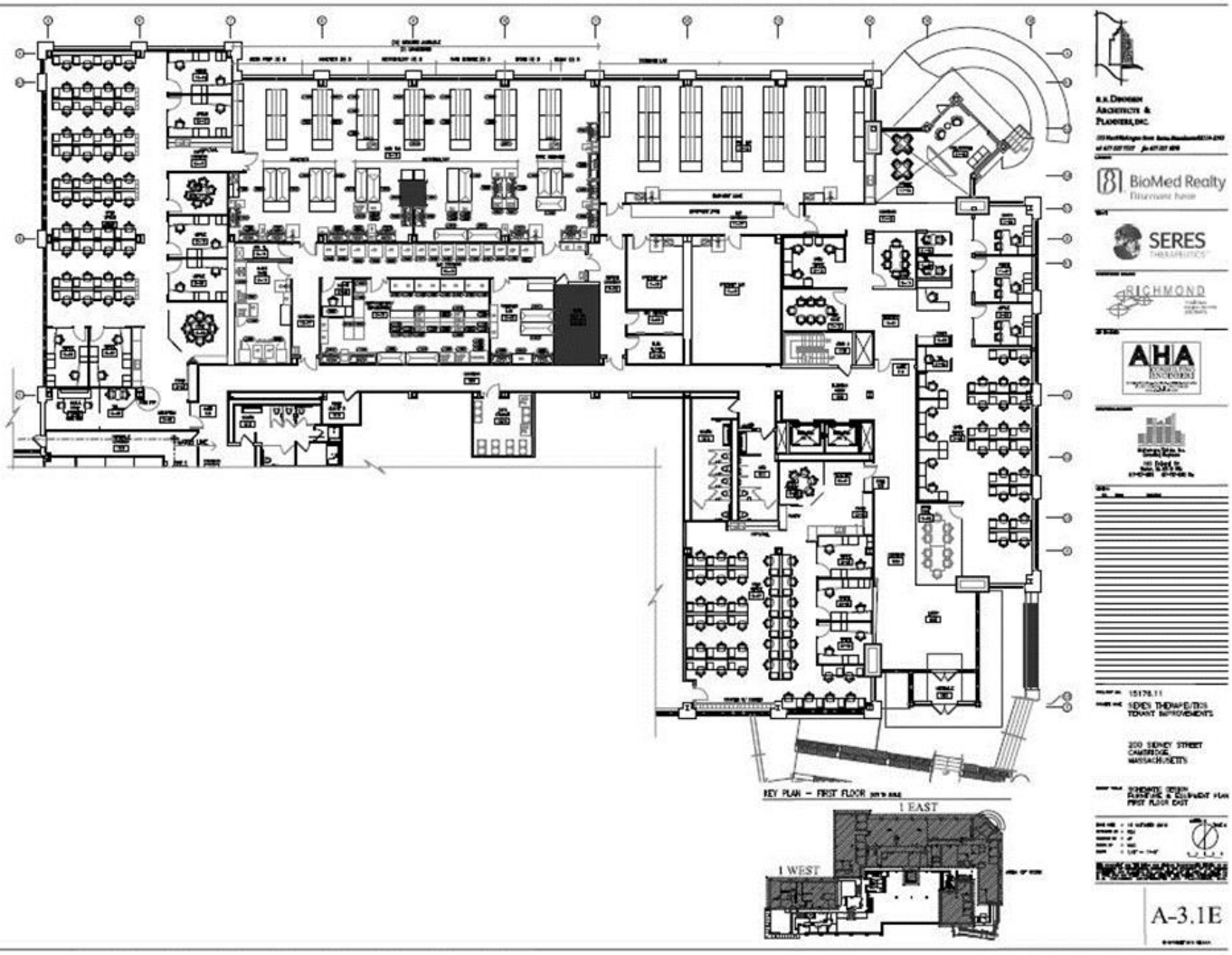
KEY PLAN – FIRST FLOOR
1 EAST
1 WEST
BioMed Realty
SERES
RICHMOND
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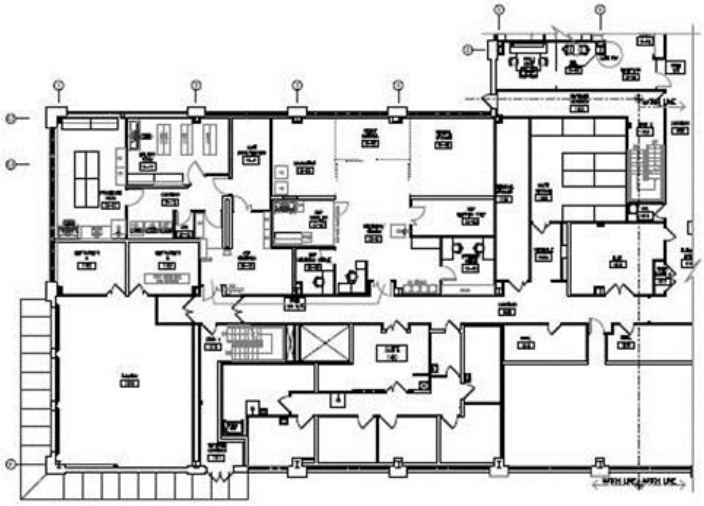
200 SIDNEY STREET
CAMBRIDGE
MASSACHUSETTS
A-3.1E



KEY PLAN – FIRST FLOOR

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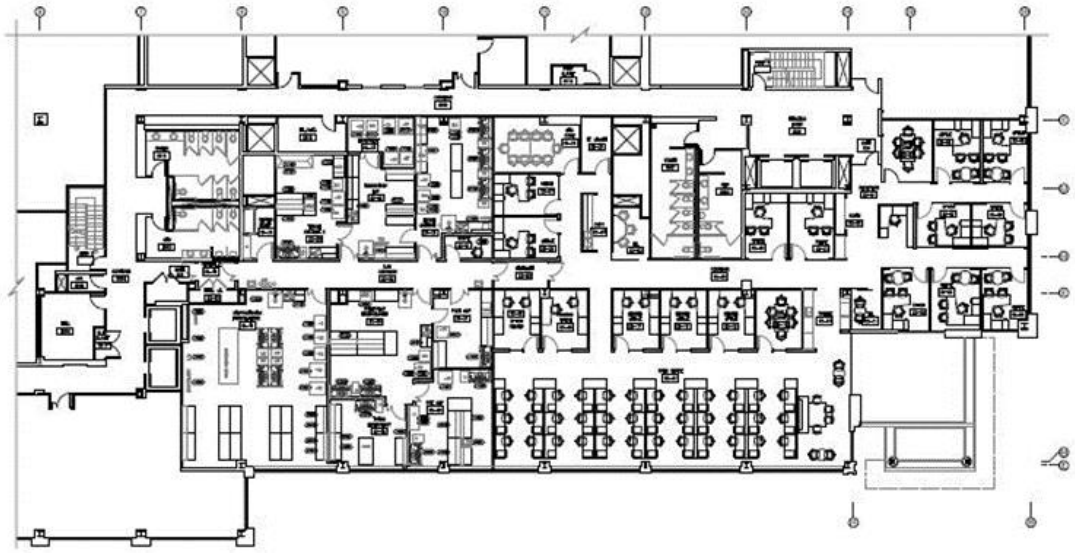
SERES THERAPEUTICS TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

A-3.1W



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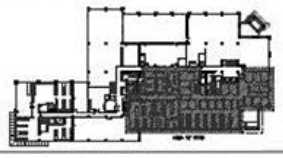

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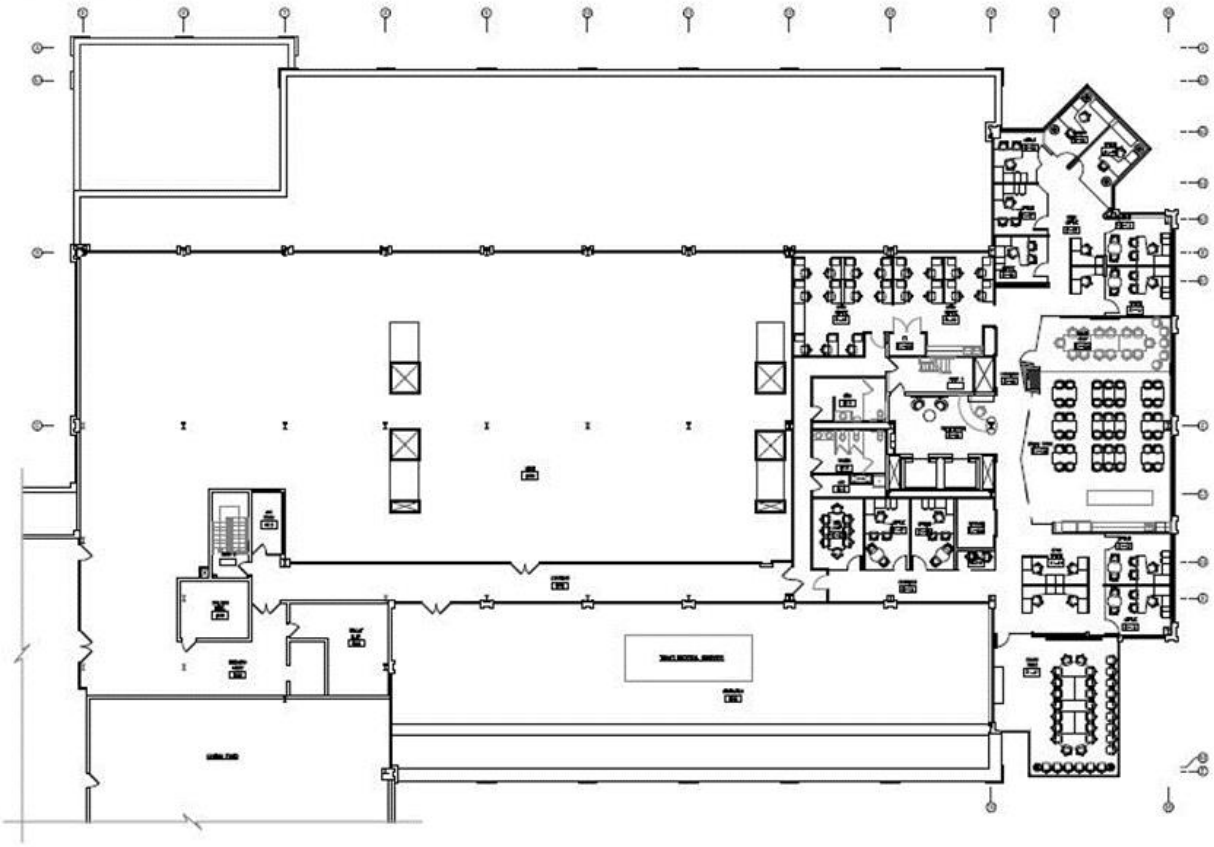
CAMBRIDGE,
MASSACHUSETTS

DIMENSIONAL FURNITURE & EQUIPMENT PLAN
SECOND FLOOR

A-3.2



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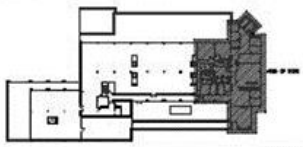

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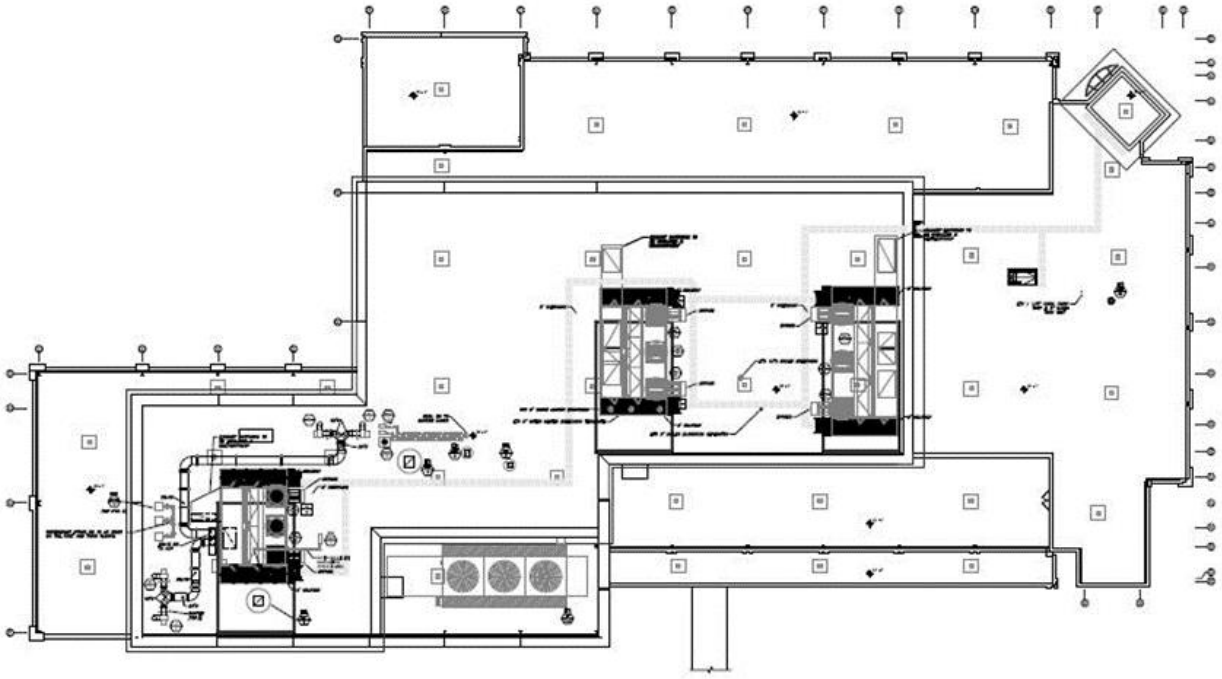
A-3.4



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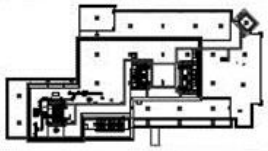

A.K. Dennen Architects & Planners, Inc.

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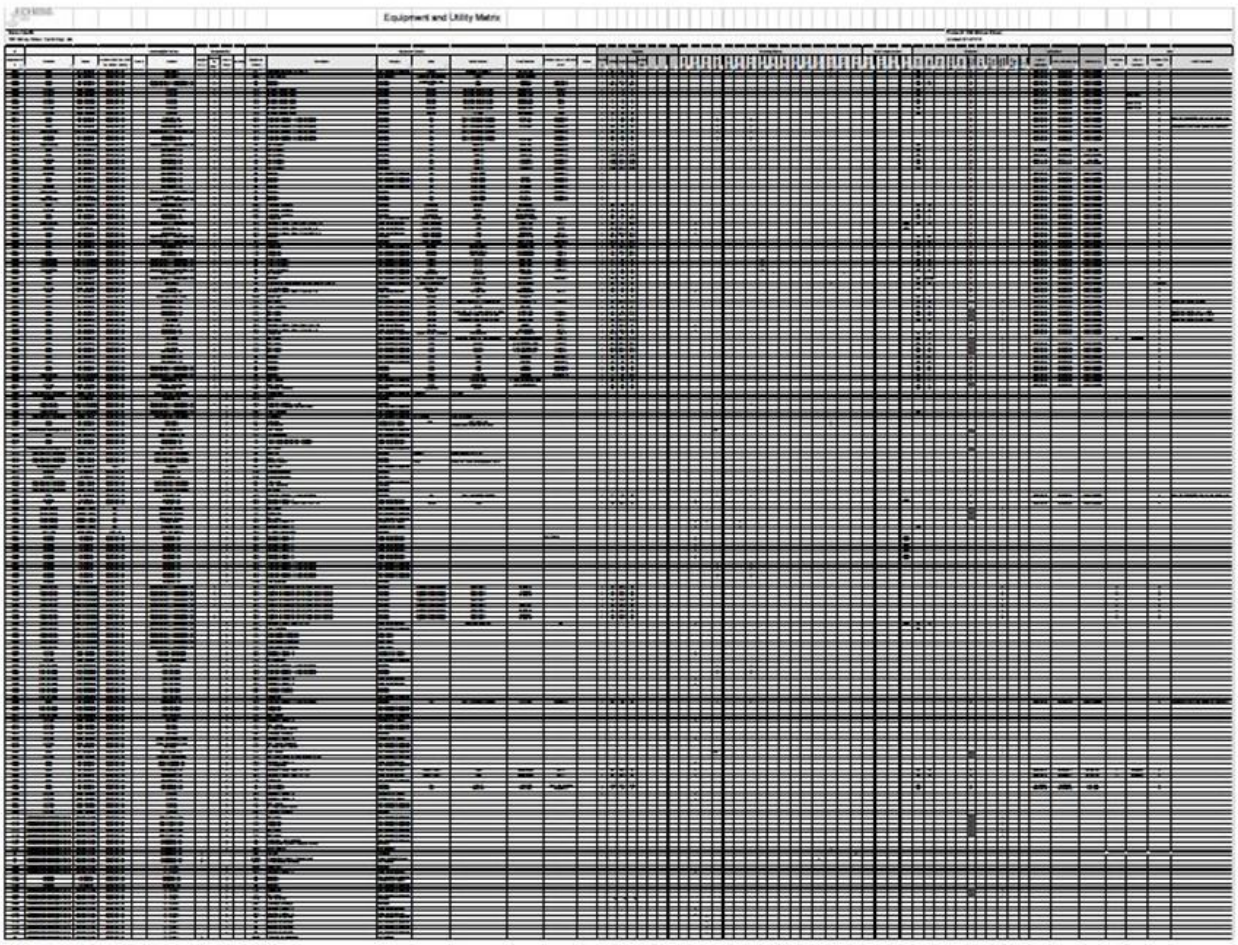
SERES THERAPEUTICS TENANT IMPROVEMENTS

200 SIDNEY STREET CAMBRIDGE, MASSACHUSETTS

ARCHITECTURAL DEMOLITION ROOF LEVEL

A-3.5



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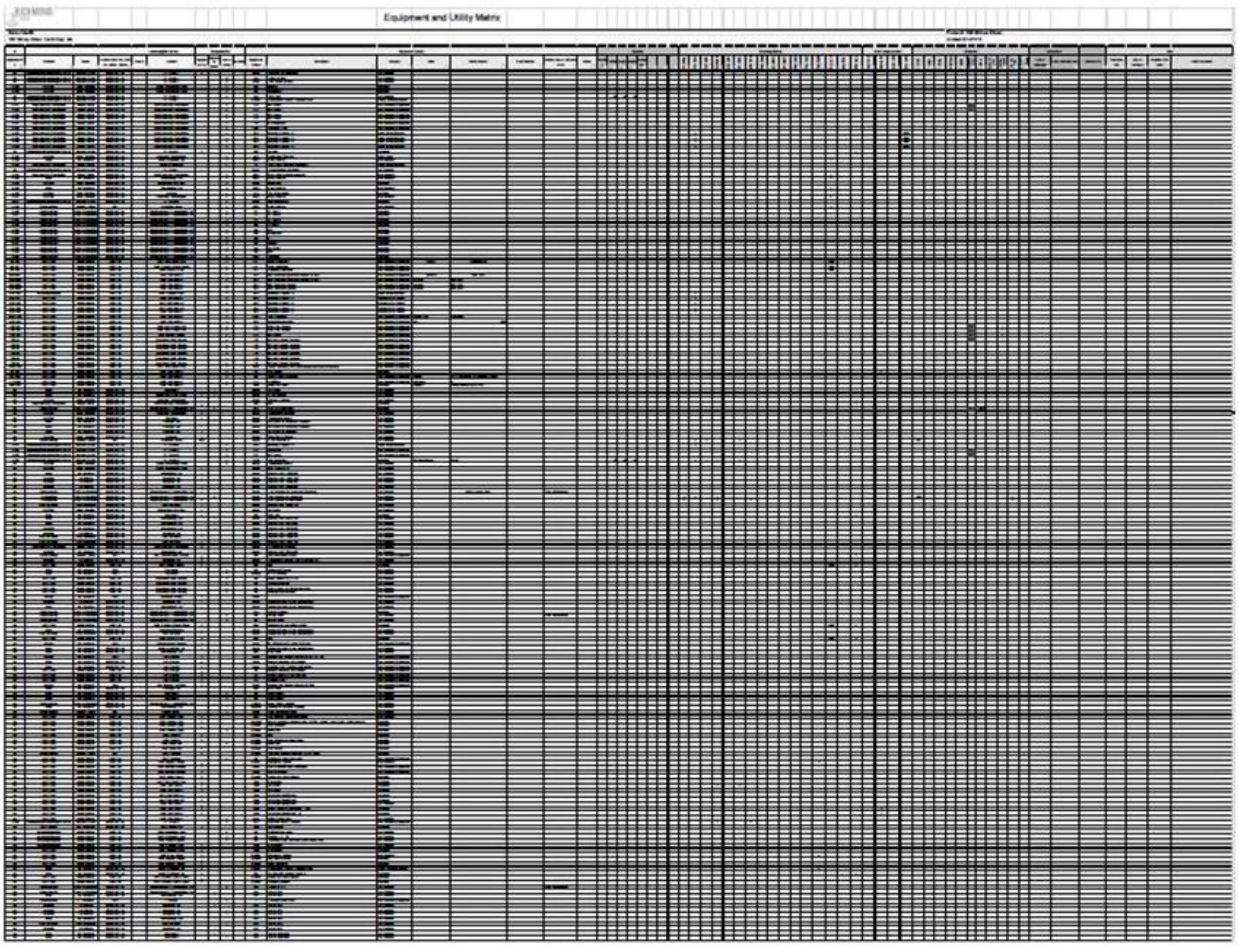
A-3.6



S.A. Dennehy Architects & Planners, Inc.

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SERES THERAPEUTICS

RICHMOND

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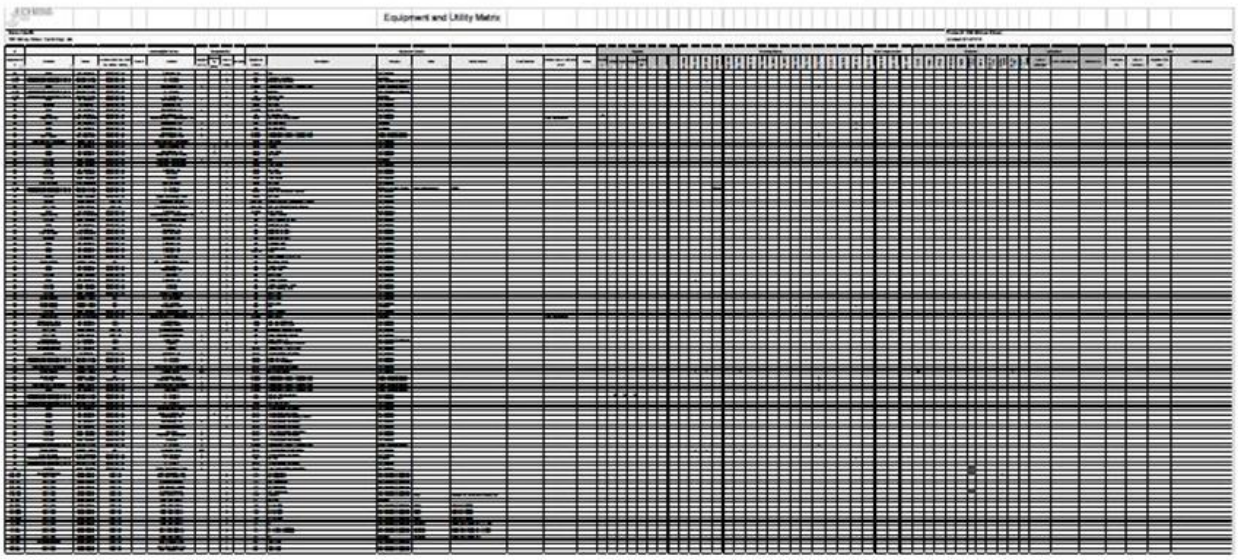
200 SIDNEY STREET
CAMBRIDGE
MASSACHUSETTS

A-3.7



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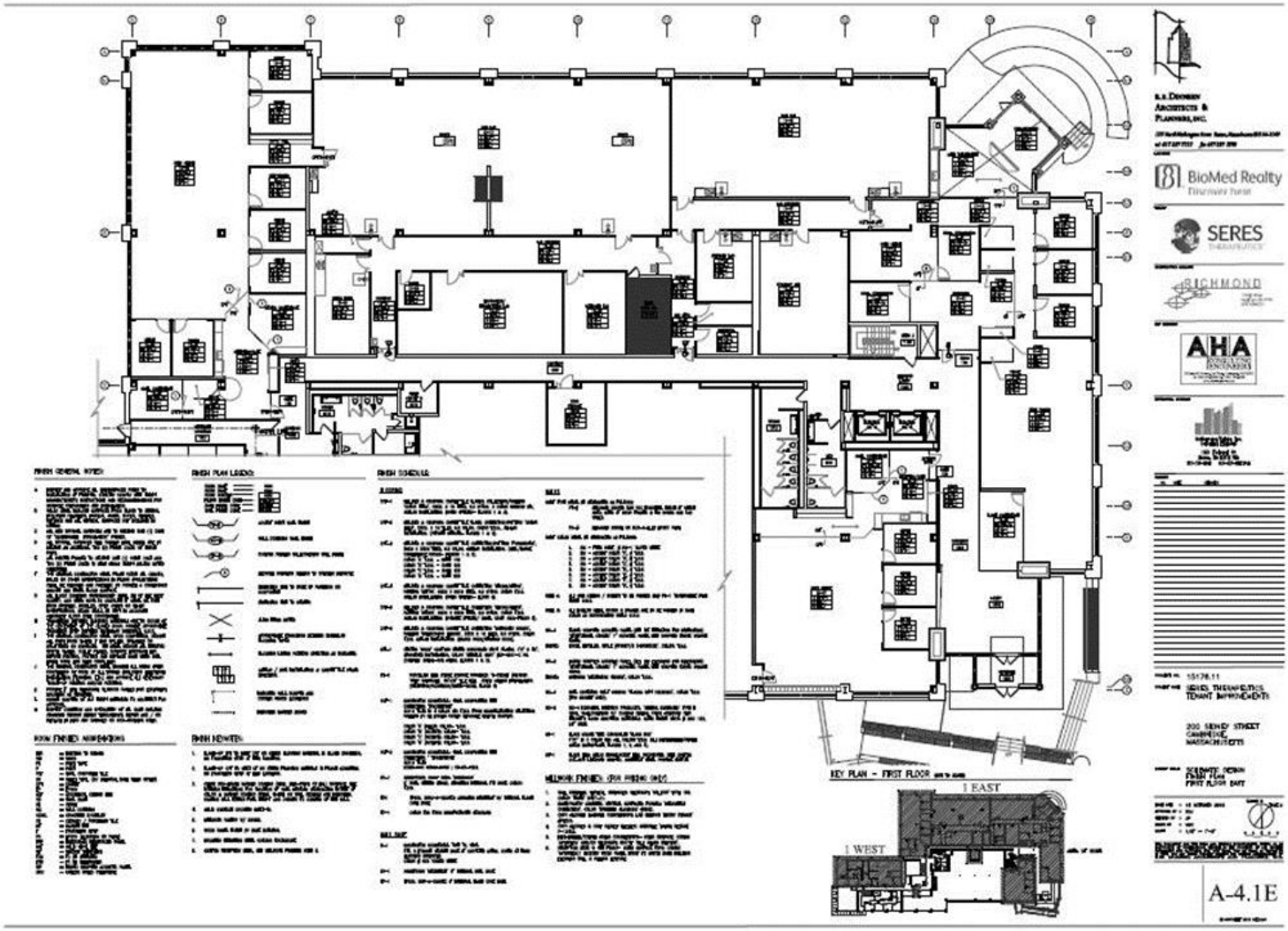
SERES THERAPEUTICS

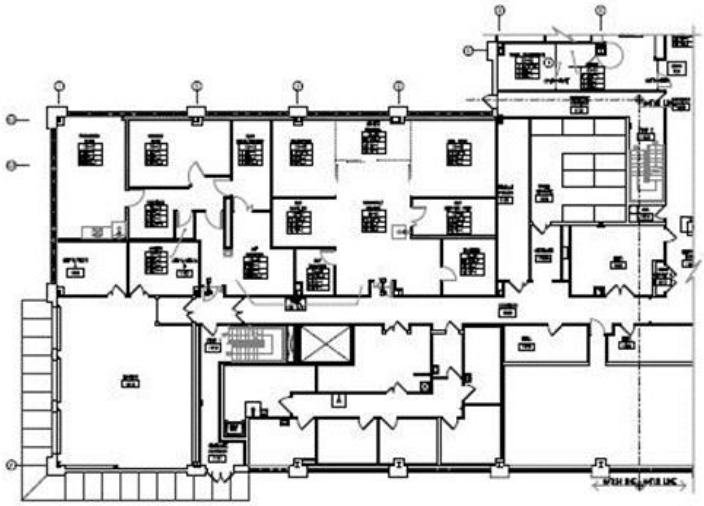
RICHMOND

AHA

200 SIDNEY STREET
CAMBRIDGE
MASSACHUSETTS

A-3.8


KEY PLAN - FIRST FLOOR
1 EAST
1 WEST
A-4.1E



FINISH KEYNOTES

KEY PLAN - FIRST FLOOR

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RICHMOND

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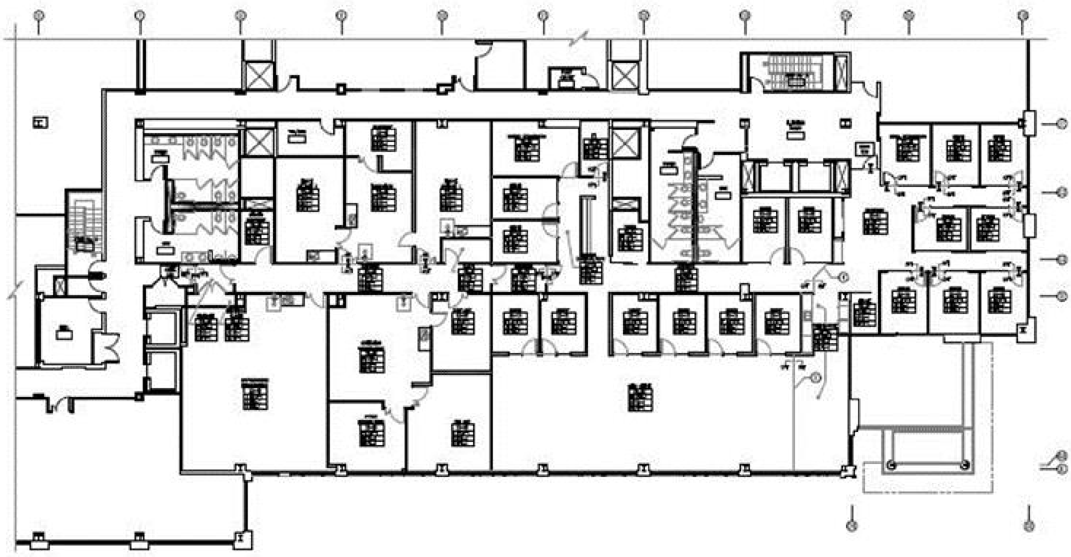
200 SIDNEY STREET
CAMBRIDGE,
MASSACHUSETTS

A-4.1W



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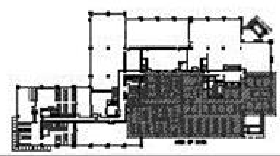

Architects & Planners, Inc.

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SERES

RICHMOND

AHA

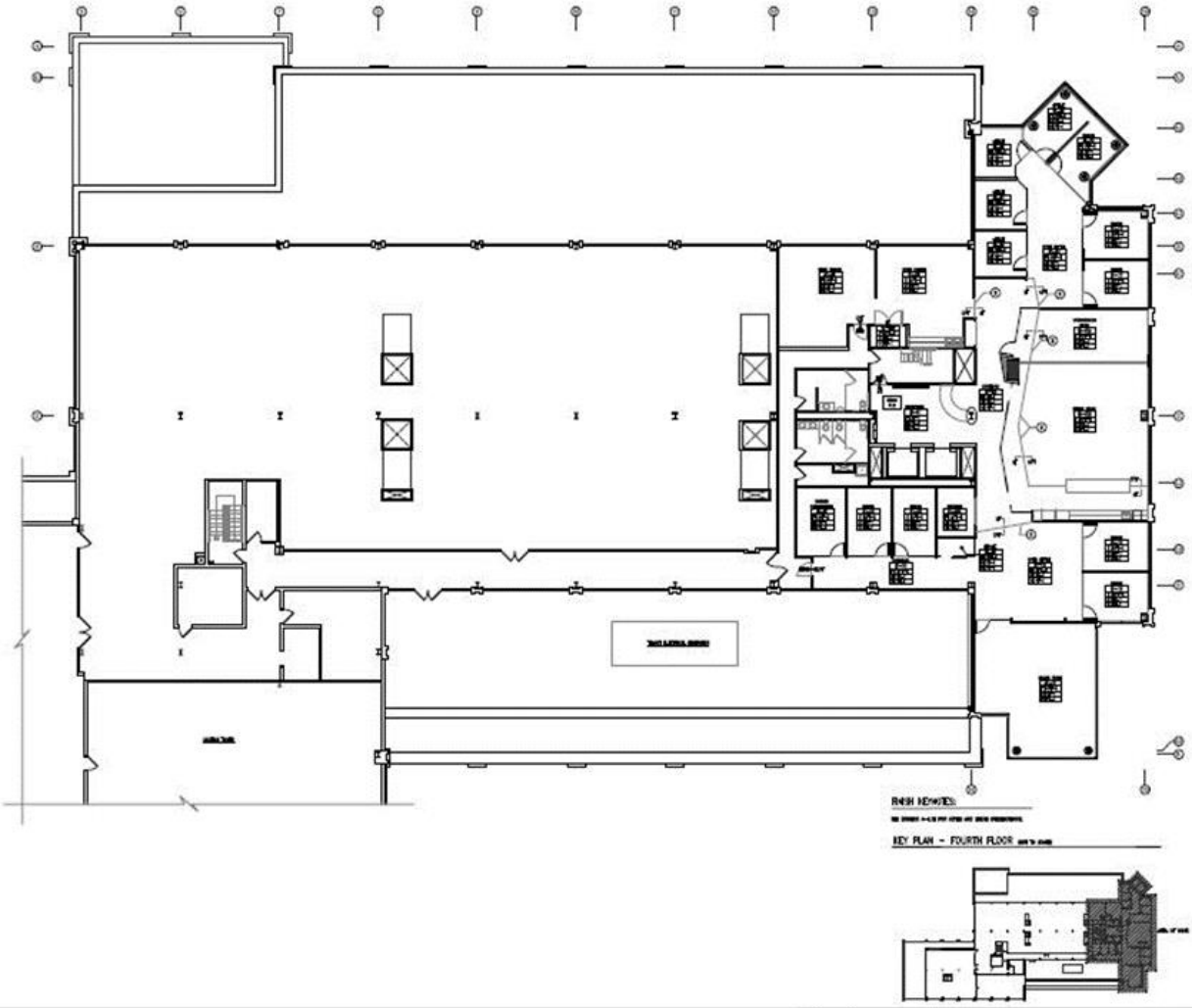
PROJECT NO. 15176.11

SERES THERAPEUTICS TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MASSACHUSETTS

SCHEMATIC DESIGN
FINISH PLAN
SECOND FLOOR

A-4.2



KEY PLAN - FOURTH FLOOR

S.A. Dennen Architects & Planners, Inc.

BioMed Realty

SERES THERAPEUTICS

RICHMOND

AHA

200 SIDNEY STREET
CAMBRIDGE
MASSACHUSETTS

A-4.4

EXHIBIT B-1-b

BASIS OF DESIGN AND URS FOR MANUFACTURING AREA IMPROVEMENTS

[SEE ATTACHED]

Seres Therapeutics
Tenant Improvement

200 Sidney Street
Cambridge, MA

Phase II
Basis of Design

November 2, 2015

Prepared By:

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Based on 8th Edition, Massachusetts Building Code

Fire Protection

The building is provided with an existing automatic wet-pipe sprinkler protection and automatic wet standpipes in accordance with 780CMR, and NFPA 13. An existing fire pump serves the standpipe and sprinkler systems for the building.

The system design shall include the tenant area coverage shall have concealed sprinkler heads.

Fire Protection design shall be based upon the following NFPA 13 criteria:

Procedure Rooms and Holding Rooms (without fume hoods), hallways, holding, gowning and cage prep: Light Hazard

Procedure rooms and Holding Rooms (with fume hoods), storage rooms, and receiving rooms: Ordinary Hazard Group 1

Automatic sprinkler systems in areas of Light Hazard Occupancy are designed with a minimum design density of .10 GPM per square foot over the hydraulically most remote 1500 square feet. Maximum protection area per sprinkler head shall be 225 square feet for upright and pendent sprinkler heads. Hose allowance shall be 100 GPM.

Automatic sprinkler systems in areas of Ordinary Hazard Group I Occupancy are designed with a minimum design density of .15 GPM per square foot over the hydraulically most remote 1500 square feet. Maximum protection area per sprinkler head shall be 130 square feet for upright and pendent sprinkler heads. Hose allowance shall be 250 GPM.

No specialty fire suppression systems are provided

Plumbing

RO, potable and non-potable water (hot & cold, vacuum, compressed air, and tempered water systems shall be provided by the base building. Tenant shall connect to existing distribution without tenant space and re-route distribution piping to suit new lab areas, lab benches, hoods and ceiling panels per the equipment matrix (dated 10.29.2015) and Architectural equipment plans.

The existing dual stage pH neutralization system shall be as currently provided by the base building with existing risers. Tenant shall route new distribution piping to existing risers and connect with a sample testing trap configuration prior to connection to risers.

Tenant shall be responsible for specialty gas systems (N2, CO2, O2, SG, MA, etc) with distribution piping routed to locations indicated in the equipment matrix (dated 10.29.2015) and Architectural equipment plans. Specialty gas vendor shall provide tanks. Manifolds will part of the distribution system.

It is our understanding that the special gas as required by the tenant shall contain a minimum of 10% Hydrogen. Per discussion with the owners representative, there will be no requirement for flammable gas cabinets. Flammable gas detection sensors and alarms shall be provided within the cylinder/manifold room. Alarm shall be local with dry contacts for connection to BMS.

All cylinder gases shall be distributed in oxygen grade, bagged and capped copper tubing. All tubing shall be brazed utilizing a continuous nitrogen purge. All flammable gases shall be installed in type 316 stainless steel tubing, and shall be joined utilizing Swagelok type fittings and valves.

Office area kitchenette will have domestic cold water, waste and vent connected to existing building services. Hot water will be generated by a point of use heater below the sink or above ceiling depending on whether a dishwasher is provided in space.

Non-potable hot water is generated by base building duplex gas fired water heaters located in the penthouse mechanical room and shall serve all laboratory sinks and equipment throughout the tenant space.

Floor drains shall be provided at all new equipment requiring drains such as ice makers, glass washers, autoclaves, steam generators, etc.

Glass wash and autoclave equipment shall have self-contained electric steam generators with cool down tanks. A separate cold water connection with connected temperature sensor in the floor drain trap shall be provided to protect against cool down system failure, and to prevent the discharge of water in excess of 140 degrees F into the plumbing drainage system in accordance with the Commonwealth of Massachusetts Uniform Plumbing Code.

RO shall be piped to the humidification units serving the ACF Area. All new RO piping shall be installed in a continuous loop, with no dead legs. Piping shall match existing polypropylene material, shall be joined utilizing socket weld joints, and shall be continuously supported to ensure no trapped sections of piping. All piping shall be installed with a positive pitch to allow all section to drain back to risers or sink outlets.

ACF sinks in the receiving and gowning rooms shall be piped to the building sanitary drainage & vent system, sinks in procedure rooms connection to the lab waste/vent system with a sampling port.

Pilot plant design shall follow the latest Seres User/Design Requirements signed off on October 26, 2015. Pilot plant shall consist of the following equipment and systems.

- A new USP grade pure water distribution skid shall be located within the basement mechanical space located below the Pilot Lab. Piping shall be distributed in a continuous loop to all points of use as indicated in the system matrix. All piping shall be run in interior and exterior electro polished type 316 stainless steel. All SS piping shall be orbitally welded, and fully passivated prior to being put into use. All drops to equipment shall terminate with a zero static valve. All connections at drops shall utilize stainless steel sanitary fittings (tri-clover).

- A new RO generating skid shall be located in the basement. This system shall be dedicated to the HVAC humidification requirements within the Pilot Lab. Flow rates shall be confirmed pending final HVAC design.
- A new RO reject reclamation system shall be provided to collect all rejected RO water from both the pure water skid and the RO skid. The water shall be treated per MA Plumbing Board requirements (UV filtration.) Piping shall be extended up to the penthouse where it shall connect to the existing cooling tower make-up connection.
- New piping within the Pilot lab shall be provided to all fixtures and outlets as described in the building matrix as well as the signed off URS document. NCW, NHW, TW, Vacuum, & CA shall extend from the existing building service mains to all sinks, safety stations, Autoclaves, BSC's, etc within the lab space.
- New specialty gas piping consisting of Instrument Air, Nitrogen, Oxygen, & Special Gas (10% Hydrogen) shall be distributed locally from cylinder manifolds located in the gas storage room. All tubing shall be oxygen grade, bagged and capped, brazed copper as described above. Special gas shall run in polished type 316 stainless steel tubing, and shall be joined utilizing Swagelok style fittings.
- All drops within the Pilot Lab clean rooms shall transition to type 316 stainless steel tubing, and shall run exposed on the walls utilizing clean room style mounting hardware. Outlets shall utilize Swagelok diaphragm style shut offs. Final connections and regulators shall be provided by the end user.

HVAC

Equipment from the base building is sized to adequately maintain a cooling temperature within the Tenant areas of an inside condition of 75ºF, dry bulb at 50% relative humidity; with outside condition of 91ºF dry bulb and 74ºF wet bulb during summer and 72ºF dry bulb inside at zero degree dry bulb outside during the winter.

The allowance for occupancy density for air conditioning design is one (1) person for 400 square feet of lab and one (1) person for 200 square feet of office.

Air flow from the base building system for the lab area is a variable air volume system with supply and exhaust air capacity at a rate of 2 CFM/SF.

Air flow from the base building system for the office area is a variable air volume, with a plenum return system with a capacity of 1.25 CFM/SF.

Hot water shall be piped to all variable air volume units from the base building distribution system.

Variable air terminal unit shall serve the IT/Data Room.

Cold rooms shall be storage only, no ventilation is required.

Six foot fume hoods in Biology West and Tissue Culture shall be constant type rated at 100 FPM face velocity at 18 inch sash height opening (785 CFM/hood).

All 100C% exhausted BSC's will be ducted to the general exhaust system thru an exhaust VAV.

All equipment exhaust connections shall be per the latest equipment matrix sent on October 29, 2015.

ACF Area shall be designated for 72°± 2° dry bulb, 40% (winter) to 55% (summer) RH range in the holding rooms and 72°± 2° dry bulb, 25% (winter) to 55% (summer) RH in the remaining rooms. Constant flow terminal units shall be connected to the base building supply air system with an independent tenant exhaust air system with dual fans. Each fan will be rated for 55% capacity of the total system, with both fans operating during normal and generator power conditions.

- Procedure rooms with and without hoods shall have a minimum of 10 air changes per hour.
- Holding rooms with and without hoods shall a minimum of 15 air changes per hour.
- All other rooms and corridors will be balanced to maintain pressure relationships per air flow diagram.

A 5 ton split system air conditioning unit with 20 KW electric heating coil shall be cross connected into the ACF Area ductwork distribution system with dampers to provide stand – by conditions for the holding rooms only. Air handling unit shall be located in the basement and connected to an intake plenum with refrigerant piping connecting the air cooled condensing unit located on grade. The heating and cooling functions will not operate at the same time and will be control by the average temperature in the holding rooms.

Air cooled condensing unit for the ACF shall be located on the roof.

Primary electric in line humidifier shall be installed to serve the entire ACF. Humidifiers shall be stainless steel and served from the RO system. Primary humidifier shall be controlled from a common exhaust duct from the ACF. Secondary humidifiers shall be install to serve each holding room and controlled from wall mounted humidistats. Humidifiers are not operational during normal power outage.

Sampling room shall have a primary humidification unit, mounted on the wall and piped into the main ductwork. The unit shall be controlled from a sensor in the exhaust ductwork stream. The room shall have 20 ACH of supply air off the house HVAC system.

Conference room shall be on independent zones. Open offices and closed offices shall be grouped in areas.

Pilot plant design shall follow the latest Seres User/Design Requirements signed off on October 26, 2015. Pilot plant shall consist of the following equipment and systems. In general, the Grade C areas

will have 45 air changes per hour with a minimum of 25% outside air and the Grade D/CNC areas will have 20 air changes per hour with 30% outside air.

- Primary air handling unit rated for 15,000 CFM of 100% outside air, with heat recovery coil, glycol heating coil, chilled water coil, pre-filters and 85% filters, fan wall with in line humidification 450 lb/hr steam supply unit fed from the Pilot plant RO system. The humidification unit shall either be gas fired or electric. The primary unit shall serve the secondary air handling units, and once thru zones as defined on the HVAC zoning plan. Units shall be double wall construction.
- Primary air unit will require and areaway for 100% outside air.
- Secondary air handling unit serving GMP support areas and corridors as defined on the HVAC zoning plan. The unit shall include a pre-filter/85% filter section, hot water coil, chilled water coil and fan wall. Units shall be double wall construction.
- Secondary air handling unit serving Prep and Sterilization as defined on the HVAC zoning plan. The unit shall include a pre-filter/85% filter section, hot water coil, chilled water coil and fan wall. Units shall be double wall construction.
- Secondary air handling unit serving Suite A as defined on the HVAC zoning plan. The unit shall include a pre-filter/85% filter section, hot water coil, chilled water coils, desiccant wheel, high heat section and fan. Units shall be double wall construction and shall be manufactured by Munter’s. The system shall have a secondary electric humidification unit rated for 60 lbs/hr and 20 KW.
- Secondary air handling unit serving Suite B as defined on the HVAC zoning plan. The unit shall include a pre-filter/85% filter section, hot water coil, chilled water coil and fan wall. Units shall be double wall construction.
- Secondary air handling unit serving Suite C as defined on the HVAC zoning plan. The unit shall include a pre-filter/85% filter section, hot water coil, chilled water coil and fan wall. Units shall be double wall construction.
- Secondary air handling unit serving Suite D as defined on the HVAC zoning plan. The unit shall include a pre-filter/85% filter section, hot water coil, chilled water coil and fan wall. Units shall be double wall construction.
- 200 ton air cooled chilled water system, consisting of two 100 ton air cooled chillers with 30% glycol solution, pumps and accessories, serving the air handling units.
- Two 1,500 MBH condensing gas fired hot water boilers with boiler pumps and system pumps with accessories serving the air handling units and heating coils. The primary air handling unit shall have a glycol loop.

- The exhaust unit shall be a high plume fan assembly with 30% filters, heat recovery coil, and VFD control on the unit with bypass dampers. The matching heat recovery coil shall be in the primary air handling unit.
- Control sequence for the VHP purge system is described in the documents.

Automatic Temperature Control system shall be an extension of the base building system. The following requirements shall be incorporated into the control of Seres Therapeutics systems for proper operation and energy savings:

- Under normal power all air and water valves shall modulate to maintain set point temperature.
- In occupied mode the lab and office air valves shall modulate between maximum and minimum set points.
- In un-occupied mode, the lab valve will reset minimum to 4 air changes and the office air valves will close. Terminal units shall cycle to maintain night set back temperatures.
- The ACF control will not change under any condition.
- On generator power all supply and exhaust air valves in the office and lab shall fail closed, except the fume hood air valves which shall remain operational. In the ACF the supply valve shall fail closed, the exhaust valve shall remain operational, and the cross over dampers shall switch operation to allow for the backup system/sequence to function, serving the three holding rooms.
- The entire Pilot plant shall be on generator power.

Electrical

Lighting Requirements:

In general, lighting will be provided in all spaces. New fixtures will be as proposed by the architect and lighting designer as required to meet space lighting requirements as proposed below.

- Office Areas: 30-40 foot candles.
- Laboratory Areas: 60-75 foot candles.
- Lab Support Areas: 50 foot candles.
- Vivarium: See section below.
- Pilot Lab: See section below.

Emergency lighting will be provided via a combination of local battery packs and small scale remote battery systems.

Lighting controls will be provided in all spaces as required to meet the current energy code.

- Open office areas controlled via occupancy sensors with separate controls for lighting in daylight zones, (as defined as 15’ from exterior glazing) manual override switch stations and light reduction controls.
- Enclosed office controlled via local occupancy sensors with integral or separate manual on override switch stations.
- Laboratory areas controlled via programmable microprocessor based lighting control system with separate controls for lighting in daylight zones, (as defined as 15’ from exterior glazing) manual override switch stations and light reduction controls.
- Vivarium: See section below.
- Pilot Lab: See section below.

Power Requirements:

In general, power will be provided as required to meet the program requirements and as dictated by the equipment and utility matrix and associated equipment cut information.

Office Areas:

- Provide duplex receptacles and a single tele/data outlet per enclosed office. Open office furniture shall be fed from a multi-wire, 4-circuit feed. Conference and multipurpose areas will have additional power for equipment and in floor locations as required by owner’s telecommunications and audio/video programming.

Laboratory Areas:

- Bench/Casework; provide surface raceway with 20-ampere, 120-volt duplex receptacles mounted 18 inches on center to match existing equipment. Two (2) 20 Amp circuits per bench. Fume Hoods provide (2) dedicated 20 ampere, 120 volt circuits. Where shown on plans, overhead ceiling utility panels will provide power to free standing equipment and bench areas. Provide tel/data and alarm point box/raceway as required by equipment matrix.
- Vivarium: See section below.
- Pilot Lab: See section below.

Lab Support Areas:

- Provide dedicated duplex receptacles along perimeter walls and 208-volt receptacles as required by equipment matrix. Provide tel/data box/raceway per equipment matrix.

Other requirements:

- Security System – new power locations as required by security system component layouts. (Security system by owner)
- Telephone/Data rooms – new power locations as required by system component layouts. (Tel/Data system by owner)

Power check metering:

- Electronic check metering equipment furnished by tenant. The equipment will interface with landlord provided metering equipment to monitor tenant power usage.

Standby Power and Generators:

Existing diesel fired generators currently supply power to tenant lab systems equipment, mechanical equipment and areas throughout the building. Existing distribution will be modified to serve tenant. Branch circuits will be modified to accommodate the following standby power loads

- Office Area: None
- Laboratory Areas: As required by equipment matrix
- Mechanical Systems: Selected ACF Systems HVAC systems and HVAC Controls
- Vivarium: See section below.

A new 450kW/562.5kVA natural gas fired optional standby generator will be provided, mounted on the roof, with a walk-in, sound attenuated, weatherproof enclosure. The generator will feed (2) automatic transfer switches, feeding branch circuits to accommodate the following standby power loads

- Pilot Lab: See section below.

Vivarium:

The vivarium Electrical system will be served by the modified normal and existing optional stand-by power distribution in the building.

Lighting Controls:

- Holding rooms shall be controlled via programmable microprocessor based lighting control system. Animal lighting system shall provide 10-30 FC utilizing full spectrum fluorescent or LED 1'x4', 2'x2' and 2'x4' sealed and gasketed fixtures. Holding room lights shall be dimmable locally and have a local override located outside the door of each holding room. Animal red light shall be provided via red filtered jelly jar type fixtures controlled independently via separate time switch as required by programming.
- Procedure Rooms and remaining areas: Full spectrum fluorescent or LED lighting shall provide 50-75 FC utilizing 1'x4', 2'x2' and 2'x4' sealed and gasketed fixtures. Lights shall be controlled via programmable microprocessor based lighting control system with local manual override controls.
- Other Spaces: Lighting controls to meet the local energy Code Chapter 13 requirements. Lighting will be provided utilizing 1'x4', 2'x2' and 2'x4' lensed fluorescent fixtures to provide sufficient lighting levels.

Power:

- Bench/Casework and equipment power will be provided as required in the equipment and utility matrix. Tel/data and alarm point locations will be provided as required in the equipment and utility matrix.

Standby Power:

- Holding Rooms: Lighting and controls will be provided on optional standby power. Each animal holding rack shall be provided with duplex receptacle on the existing optional standby power. In addition, optional standby power will be provided as required in the equipment and utility matrix.
- HVAC Systems as required

Pilot Lab:

Pilot lab design shall follow the latest Seres User/Design Requirements signed off on October 26, 2015. The Pilot Lab Electrical system will be served by modified normal and new optional stand-by power distribution.

Lighting and Controls:

- Production areas: 1'x4', 2'x2' and 2'x4' recessed class 10,000 sealed, lensed fluorescent or LED lighting shall provide a uniform light level of 80-100FC as measured at 30" AFF. Lighting system shall be controlled via fully programmable microprocessor based lighting control relay system via a programmed time of day schedule. Low voltage override control stations will be provided

within or outside each space, as determined, for override and lighting control outside of a pre-set schedule.

- Light filtration to reduce specific light wavelengths will be provided as determined by space requirements.

- Support and prep areas:1'x4', 2'x2' and 2'x4' recessed class 100,000 sealed, lensed fluorescent or LED lighting shall provide a uniform light level of 50-75FC as measured at 30" AFF. Lighting system shall be controlled via fully programmable microprocessor based lighting control relay system via a programmed time of day schedule. Low voltage override control stations will be provided within each space, for override and lighting control outside of a pre-set schedule.

    - Light filtration to reduce specific light wavelengths will be provided as determined by space requirements.

- Other Spaces: 1'x4', 2'x2' and 2'x4' recessed class 100,000 sealed, lensed fluorescent or LED lighting shall provide adequate lighting levels for the space. Lighting system shall be controlled via fully programmable microprocessor based lighting control relay system via a programmed time of day schedule. Low voltage override control stations will be provided within each space, for override and lighting control outside of a pre-set schedule.

Power:

- Bench/Casework and equipment power will be provided as required in the equipment and utility matrix. Tel/data and alarm point locations will be provided as required in the equipment and utility matrix. All devices will be flush mounted and provided with gasketed WP cover plates.

Standby Power:

- Lighting throughout the pilot lab will be provided on optional standby power.

- Equipment will be provided with optional standby power as required in the equipment and utility matrix.

- HVAC equipment and control systems will be provided with standby power as required to maintain supply, exhaust and environmental conditions.

Fire Alarm

The base building fire alarm system shall be fully addressable and expansion capabilities, Tenant shall expand from the base building system and shall be limited to the renovation area.

ACF fire alarm devices shall be low frequency sounder type with separate strobe devices.

Communications

Locations for wireless networking will be provided per the tenant’s direction.

Box and conduit for Tel/Data and Phone devices will be provided as required in the equipment and utility matrix.

Box and conduit for security devices will be provided at access points as indicated by the architect.

CONFIDENTIAL/PROPRIETARY INFORMATION

TITLE: **200 Sidney Street GMP Pilot Production Facility User/Design Requirements Specification**

Specifications Approval Cover

The signatures below indicate approval of these specifications.

	NAME AND TITLE (Printed)	SIGNATURE	DATE
ORIGINATOR: Commissioning Agents, Inc.	Gregg Singer Validation Specialist		22OCT2015
APPROVED BY: Seres Facilities	Sarah Garant Process Development Engineer Facilities		22OCT2015
APPROVED BY: Seres Manufacturing	Nedim Emil Altaras Senior Director Manufacturing		26OCT2015
APPROVED BY: Seres Quality	Robert Jassmond Senior Director Quality		26OCT2015

Seres Therapeutics
200 Sidney Street
GMP Pilot Production Facility
User/Design Requirements Specification

Area	Section	UR #	Description	Category
Concept	Overall Design	0001	Designed to FDA Guidance for Industry: Manufacturing Biological Intermediates and Biological Drug Substances Using Spore-Forming Microorganisms (current version)	UR
Concept	Overall Design	0002	Clean rooms meet EudraLex Volume 4 Annex 1 (Manufacture of Sterile Medicinal Products) current version requirements	UR
Concept	Overall Design	0003	Facility is intended for multi-product operation on a campaign basis.	UR
Concept	Overall Design	0004	Design basis is: 1. Two DS process trains and one DP encapsulation train running simultaneously. 2. One DS process train and one DP process train running simultaneously. Only case 1 or case 2 is required at the same time; the facility must be capable of switching between the cases as required for DP production.	UR
Architecture	Overall Design	0005	Each manufacturing suite room (including potential associated support suites) shall be reconfigurable and sized for simultaneous manufacturing at up to one at 250L scale and one at 50L scale, including a shaking incubator, bioreactor, centrifuge and/or TFF, and associated biosafety cabinets.	UR
Architecture	Overall Design	0006	Process train requirements could be met by four simultaneous 250L bioreactors in the DS processing area.	DR
Architecture	Overall Design	0007	Pressure differentials maintain exclusion of foreign material at entrances from common corridors, and maximize containment of spores within processing suites. Leak tightness of rooms, including space above ceilings, is adequate to maintain cleanliness, differential pressures, pest control, and containment.	UR
Architecture	Overall Design	0008	Intended use of the facility is as a pilot plant, with future equipment to be determined. Flexibility in equipment support and configuration is required.	UR
Architecture	General	0009	Unclassified support spaces can have exposed duct and pipe. Steel and walls will be painted. Lighting is appropriate for activities in all areas. Floors are sealed and suitable for traffic levels.	DR
Architecture	General	00010	Janitor closets are included in CNC support space and unclassified support spaces, including room for storage of cleaning equipment and a sink with USP pure water for mixing cleaning supplies.	DR
Architecture	General	00011	Either a unisex locker room with considerations for privacy, or separate male/female locker rooms, is provided. This space is used to change from street clothes to tech suit and clean room shoes.	DR
Architecture	General	00012	Space in locker rooms is provided for storage of clean room shoes, street shoes, street clothes, disposable gowning equipment, and clean tech suits, as well as a bin for used tech suits.	DR

Area	Section	UR #	Description	Category
Architecture	General	00013	Maintain at least 3 feet for access between fixed equipment and walls, in cases where access is required.	DR
Architecture	General	00014	Ceiling height must allow access for equipment up to 250L Thermo Fisher SUB reactors and biosafety cabinets including considerations for both operations and maintenance. Equipment to be confirmed on equipment list.	DR
Architecture	General	00015	Doors, airlocks, and corridors are sized to remove the largest relocatable piece of equipment for maintenance in that area.	UR
Architecture	General	00016	Viewing windows are provided within the manufacturing area, where feasible.	DR
Architecture	General	00017	In manufacturing areas, utilize portable tables or counter top with undercounter cart/rack. All will be cleanable and portable rather than fixed cabinetry.	DR
Architecture	General	00018	Biosafety cabinets are in Grade C rooms.	UR
Architecture	General	00019	Pass throughs will be located to facilitate convenient transfer of materials. They will be configured to maintain the environment and containment in the connected spaces, and cleanable in a similar manner to the connected rooms.	DR
Architecture	General	00020	A hood is required in the media preparation area for flammables and powder handling.	UR
Architecture	General	00021	The environment within biosafety cabinets is Grade A.	UR
Architecture	General	00022	EMS instruments monitor and record critical parameters, including temperature, humidity, differential pressure, and supply and exhaust airflow in processing rooms. Instruments are accessible for maintenance and calibration. Outside and total air changes per hour will be calculated for each suite based on airflow.	UR
Architecture	General	00023	Door interlocks will prevent opening more than one door into/out of a classified room to maximize differential pressure maintenance and spore containment. Interlock design will consider configuration for VHP cycles, including the potential for propping doors open	DR
Architecture	General	00024	Locker rooms and rooms used for gowning/degowning, such as airlocks, will contain a demarcation (entrance/exit) line with a change in floor color.	DR
Architecture	General	00025	Rooms where gowning or degowning are performed will contain personnel supports such as bars (preferred) or benches.	DR
Architecture	General	00026	Unclassified mechanical room is available for support equipment as needed.	UR
Architecture	General	00027	Closed circuit cameras will be provided in manufacturing areas.	UR
Architecture	Storage	00028	-80C +/- 10C freezer space in a CNC area. Space requirements to be determined.	UR

Area	Section	UR #	Description	Category
Architecture	Storage	00029	5C +/- 3C refrigerator space in a CNC area. Space requirements to be determined	UR
Architecture	Storage	00030	Flammables storage in a CNC area. Space requirements to be determined	UR
Architecture	Storage	00031	Cryo storage for master cell banking convenient to the pilot facility. Space requirements to be determined.	UR
Architecture	Storage	00032	Additional -80C freezer space for GMP storage of drug substance outside the classified areas, but in an access controlled space. Space requirements to be determined.	UR
Architecture	Storage	00033	Additional GMP flammables storage outside the classified areas. Space requirements to be determined.	UR
Architecture	Storage	00034	Controlled room temperature (20-25C with short duration excursions to 15-30C) storage required for raw materials and disposable equipment. Adequate EMS instrumentation will be installed to provide representation of temperatures throughout the space.	UR
Architecture	Storage	00035	Humidity controlled storage for capsules at 50% +/- 15%. Adequate EMS instrumentation will be installed to provide representation of humidity throughout the storage space.	UR
Architecture	Storage	00036	Rejected materials to be caged. All other storage materials can be open storage in a controlled access room.	UR
Architecture	Storage	00037	Sampling room adjacent to warehouse with outside vented biosafety cabinet, controlled room temperature, and humidity maintained <50%.	UR
Architecture	Storage	00038	All storage temperature and humidity parameters are maintained during a loss of primary electrical power.	UR
Automation	EMS	00039	The Seres Environmental Monitoring System (EMS) will be separate from the landlord system, with access limited to users authorized by Seres.	UR
Automation	EMS	00040	The EMS will follow GAMP and IEEE software management practices.	UR
Automation	EMS	00041	The EMS with meet 21 CFR Part 11 and EU Annex 11 requirements for storage of electronic records and signatures in a closed system. No biometric signatures are required.	UR
Automation	EMS	00042	All refrigerators and freezers will have temperature monitored and alarmed on EMS.	UR
Automation	EMS	00043	EMS central equipment will be located in a room that is accessible without gowning and convenient to the manufacturing area. Access will be controlled.	DR
Automation	EMS	00044	A physical interface (desktop computer) to the EMS will be installed on site.	DR
Automation	EMS	00045	EMS data storage servers may be located on or off site, and will be provided with backup power and secure physical and logical access.	DR

Area	Section	UR #	Description	Category
Automation	EMS	00046	Remote access to the EMS to authorized users will be provided, including remote notification of alarms and warnings and access to graphics.	UR
Automation	EMS	00047	Alarms and warnings will be reconfigurable by authorized users. Alarms and warnings may be configured for each point with any combination of alarms or warnings used (for example, only low warning, or only low alarm and high warning, etc.). Each alarm/warning will have a configurable delay; for example, a low warning may have a different delay from a high alarm for the same point.	DR
Automation	EMS	00048	Local Uninterruptible Power Supplies (UPS) will provide emergency power to maintain EMS data collection and recording.	DR
Automation	EMS	00049	Following a restart or loss of power, all EMS setpoint values (including any control setpoints, alarm/warning setpoints, time delays, etc.) will be automatically restored .	DR
Automation	Security	00050	Key cards will limit access to processing and support areas, including automation equipment, to authorized personnel.	UR
Manufacturing Operations	Cleanliness	00051	Floor drains will be installed in Controlled Non-Classified areas as necessary to facilitate liquid disposal. Grade C and D areas will not contain floor drains.	UR
Manufacturing Operations	Cleanliness	00052	Cleaning in classified areas will be performed with USP purified or higher quality water.	UR
Manufacturing Operations	Cleanliness	00053	All finishes and equipment in classified spaces will be cleanable, compatible with SporKlenz and Vaporized Hydrogen Peroxide (VHP), and suitable for pressure containment (balancing).	UR
Manufacturing Operation	Cleanliness	00054	Initial gowning will be performed in locker room(s), consisting of manufacturing area shoes, tech suit, shoe covers, gloves, and safety glasses.	DR
Manufacturing Operations	Cleanliness	00055	Secondary gowning will be performed in entrance air locks, consisting of new gloves, disposable coveralls, disposable boot covers, hair net, and beard cover (when applicable)	DR
Manufacturing Operations	Cleanliness	00056	Initial degowning will be performed in exit air locks, including disposal of hair net, beard cover, and coveralls and replacement of gloves and boot covers, including gloves and boot covers.	DR
Manufacturing Operations	Cleanliness	00057	Final degowning will be performed in locker room(s), consisting of doffing and storage of manufacturing area shoes (covered with fresh disposable shoe covers), safety glasses, and tech suit, disposal of gloves, and donning of street clothes and shoes.	DR
Manufacturing Operations	Cleanliness	00058	Sterilizing autoclave in equipment preparation room.	UR
Manufacturing Operations	Cleanliness	00059	Washing equipment for small parts in equipment preparation room.	UR

Area	Section	UR #	Description	Category
Manufacturing Operations	Cleanliness	00060	Disinfecting autoclave for waste.	UR
Manufacturing Operations	Media & Buffer Prep	00061	Media & buffer prep in Grade Croom to accommodate open transfer of powders	UR
Manufacturing Operations	Media & Buffer Prep	00062	Media and buffers will be mixed using USP purified water or better.	UR
Manufacturing Operations	Media & Buffer Prep	00063	Incubators available to heat shake flasks to 60C.	UR
Manufacturing Operations	Media & Buffer Prep	00064	Agitation available for media sufficient to dissolve components and put into solution.	UR
Manufacturing Operations	Media & Buffer Prep	00065	Provision is made to move 250L batches of media/buffer from preparation to processing suites.	UR
Manufacturing Operations	Media & Buffer Prep	00066	Media and buffers will be sterile filtered.	DR
Manufacturing Operations	DS	00067	Disposable bioreactors with aseptic connections will be used; .no CIP/SIP required.	DR
Manufacturing Operations	DS	00068	Bioreactor exhaust filters must be protected to prevent condensation	DR
Manufacturing Operations	DS	00069	Sampling of bioreactors, media, and buffer tanks to be in Grade C and conducted aseptically.	UR
Manufacturing Operations	DS	00070	Bioreactors will have self-contained DeltaV controllers. These ,will interface with the EMS for monitoring only.	DR
Manufacturing Operations	DS	00071	Bioreactor controllers continuously monitor temperature, pH, and agitation speed. Provision is made for Part 11 compliant archival data storage, preferably on the EMS.	UR
Manufacturing Operations	DS	00072	Bioreactor pH probes will be cleaned, autoclaved, and calibration verified prior to use .	DR
Manufacturing Operations	DS	00073	Bioreactors will be maintained at slight positive pressure (~0.5 psi) during culture using compressed nitrogen. Pressure is not monitored or controlled by the bioreactor.	DR
Manufacturing Operations	DS	00074	MCB/pre-MCB will be transferred from thawing to incubator manually.	DR
Manufacturing Operations	DS	00075	Shaking incubators will be provided for each DS manufacturing suite.	UR
Manufacturing Operations	DS	00076	Shaking incubator temperature and agitation rate will be alarmed and monitored on EMS.	UR
Manufacturing Operations	DS	0077	Provision will be made to supply bottled compressed air and compressed nitrogen to incubators.	UR
Manufacturing Operations	DS	00078	Nitrogen supplied to incubators and bioreactors will be as low oxygen as possible and of a quality suitable for product contact.	UR
Manufacturing Operations	DS	00079	Compressed air supplied to incubators and bioreactors will be of a quality suitable for product contact.	UR
Manufacturing Operations	DS	00080	Nitrogen will have the capacity to sparge reactors at 0.1 to 0.5 vessel volumes per minute.	DR
Manufacturing Operations	DS	00081	Compressed air will have the capacity to sparge bioreactor at 0.04 to 0.2 vessel volumes per minute	DR

Area	Section	UR #	Description	Category
Manufacturing Operations	DS	00082	Vacuum will be available for shake flash preparation.	UR
Manufacturing Operations	DS	00083	Bioreactor controllers are on local UPS power.	DR
Manufacturing Operations	DS	00084	Compressed air will be available at a suitable pressure for TFF filter integrity testing.	DR
Manufacturing Operations	DP	00085	Space for drug product initial processing prior to encapsulation in a Grade C room with biosafety cabinet.	UR
Manufacturing Operations	DP	00086	Encapsulation is within an isolator at Grade A in a Grade C room, either a separate room or included in a manufacturing suite.	UR
Manufacturing Operations	DP	00087	Space for manual bottling, including torquing of container lids and heat sealing, in the same room as the isolator.	UR
Manufacturing Operations	DP	00088	Space & utilities for future lyophilizer in same room as encapsulation.	UR
Manufacturing Operations	MCB	00089	MCB/pre-MCB to be stored in LN2 freezer with central alarm and monitoring in EMS. Backup dewars will be provided on a manifold, with alarms for dewar level/pressure. 02 monitor will be provided in the room. Access to the room and to the individual freezers will be controlled (key/card access).	DR
Quality & Regulatory Compliance	General Quality	00090	All valves for process utilities and HVAC piping will be tagged with a unique identifier, assigned from a consistent standard, using a permanent valve tag (brass or stainless steel, as appropriate for environment). Tags in the field will match those shown on design drawings.	DR
Quality & Regulatory Compliance	General Quality	00091	Applicable construction quality activities, such as pressure testing, flushing, infrared scanning, etc., will be performed on all utilities modified or installed as part of the construction process, and documentation provided with the turnover package.	DR
Quality & Regulatory Compliance	General Quality	00092	Construction turnover package will include as-built drawings, including incorporation of commissioning redlines, in PDF and native (editable) format.	DR
Quality & Regulatory Compliance	EH&S	00093	Noise levels shall not exceed 85 dB; areas exceeding this level require hearing protection	DR
Quality & Regulatory Compliance	EH&S	00094	Pressure relief valves are directed to safe discharge locations.	UR
Quality & Regulatory Compliance	EH&S	00095	No floor drains under emergency showers in classified areas. Emergency showers to be located in lower classification or unclassified rooms where possible.	DR
Quality & Regulatory Compliance	EH&S	00096	Tempered circulated water for eyewash and showers	DR

Area	Section	UR #	Description	Category
Quality & Regulatory Compliance	EH&S	00097	Piping will be insulated as process and safety requirements dictate.	UR
Quality & Regulatory Compliance	EH&S	00098	BSCs must be certified to comply with ASHRAE 110	UR
Quality & Regulatory Compliance	EH&S	00099	NFPA health ratings of 3 or higher require double containment piping and container.	UR
Quality & Regulatory Compliance	EH&S	00100	200 liter tanks and 250 liter bags are the personnel limit for manual handling.	UR
Quality & Regulatory Compliance	EH&S	00101	Two handed lift repetitive limit is 25 pounds.	UR
Quality & Regulatory Compliance	EH&S	00102	40 pounds is the maximum lift.	UR
Quality & Regulatory Compliance	EH&S	00103	Safety showers and eyewash stations need to be located to serve areas dealing with chemicals.	UR
Utilities	General Utilities	00104	Energy efficiency is considered in the design of the new or modified utility systems, subject to meeting other requirements (cleanliness, air changes per hour, required volumes, etc.)	DR
Utilities	General Utilities	00105	Automated handwashes, paper towel dispensers, and waste receptacles will be located in the controlled nonclassified support areas at convenient locations.	DR
Utilities	General Utilities	00106	Each major system/equipment can be isolated from utilities without affecting other systems/equipment.	DR
Utilities	General Utilities	00107	Utilities to be isolated with safety shut-off valves for each floor.	DR
Utilities	General Utilities	00108	Air break or back flow prevention is to be incorporated in all process waste lines.	UR
Utilities	Electrical	00109	Standby generator (backup) power shall be available. Exact equipment on generator power to be described in equipment list.	UR
Utilities	Electrical	00110	On a loss of primary electrical power, power must be maintained to all equipment in the drug product processing rooms. If feasible, backup power will also be provided to equipment in drug substance processing rooms.	UR
Utilities	Electrical	00111	On loss of primary electrical power, the environment must be maintained throughout the manufacturing area, including differential pressures between rooms and temperature/humidity in classified areas.	UR
Utilities	Electrical	00112	Processing suite electrical supplies shall be as required per the equipment list.	DR

Area	Section	UR #	Description	Category
Utilities	Electrical	00113	24 hour fuel oil supply for standby generator	DR
Utilities	HVAC	00114	Processing suite temperatures maintained 20C +/-1.5C	UR
Utilities	HVAC	00115	Processing support areas (gowning, airlocks, etc.) temperatures maintained 20C +/-2C	UR
Utilities	HVAC	00116	Processing suite relative humidity will be controlled to 30-70%	UR
Utilities	HVAC	00117	The room containing the encapsulation isolator will have relative humidity controlled to +/-10% from a user-selectable setpoint. The setpoint shall be selectable from 30% to 60%. Access to change the setpoint will be controlled.	UR
Utilities	HVAC	00118	Classified areas will have a minimum of 6 outside air changes per hour.	UR
Utilities	HVAC	00119	Grade C areas will have a minimum of 45 air changes per hour (mixed)	UR
Utilities	HVAC	00120	Grade D areas will have a minimum of 20 air changes per hour (mixed)	UR
Utilities	HVAC	00121	Air filtration in classified and controlled nonclassified areas provided by room side replaceable terminal HEPA filters with test ports.	DR
Utilities	HVAC	00122	Balancing dampers will be used to provide differential pressure control for balancing. Remote actuators will be used for any dampers not accessible by normal means.	DR
Utilities	HVAC	00123	Processing suites will contain separate airlocks for personnel entrance, personnel exit, material entrance, and material exit.	DR
Utilities	HVAC	00124	Processing suites will act as their own sinks, with spores to be contained in suites to the maximum extent feasible	DR
Utilities	HVAC	00125	Winter Outdoor Temperature Design Criteria: Minus 18C dry bulb	DR
Utilities	HVAC	00126	Summer Outdoor Temperature Design Criteria: 33C dry bulb, 24C wet bulb	DR
Utilities	HVAC	00127	HVAC system design considers VHP containment and exhaust. Pressure differentials are maintained during VHP to the maximum extent possible.	UR
Utilities	Liquids & Gases	00128	One nitrogen drop of product contact quality will be provided in each processing suite, supplied from bottled gas.	DR
Utilities	Liquids & Gases	00129	One house vacuum drop will be provided in each processing suite, and in the room where the capsule filling machine is located.	DR
Utilities	Liquids & Gases	00130	VHP distribution points will be located to provide for decontamination of the suites and associated areas, such as air locks. One suite and associated areas will be decontaminated at a time.	DR
Utilities	Liquids & Gases	00131	Space for a VHP skid to connect to the distribution system is located in unclassified space.	DR

Area	Section	UR #	Description	Category
Utilities	Liquids & Gases	00132	Monitoring for high level VHP concentration in each processing suite and low level VHP concentration in the area in which the VHP generator is located.	DR
Utilities	Liquids & Gases	00133	Building reverse osmosis water will be used for humidification, provided the quality of the water will not interfere with the identified cleanliness standards.	DR
Utilities	Liquids & Gases	00134	If a USP pure water system is installed, it will produce water at USP pure water grade in volumes sufficient for the uses described in this document. Adequate information will be recorded , either independently or provided to the EMS, to prove that water meets the required quality.	DR
Utilities	Waste	00135	Waste will be disposed of as required by applicable regulations, potentially including neutralization, kill, and/or storage for off-site disposal.	UR

EXHIBIT B-1-c

DRAFT MANUFACTURING AREA SCHEMATIC PLANS

[SEE ATTACHED]

AHA CONSULTING ENGINEERS
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DRAWINGLIST

200 Sidney Street
Cambridge, MA
Seres Lab/Office Package:

Drawing List: 11/02/2015 SD Set

Plumbing

P-0.1	PLUMBING LEGEND & NOTES
P-0.2	PLUMBING SCHEDULES
P-0.3	PLUMBING DETAILS
P-1.0	PLUMBING BASEMENT PLAN
P-1.1B	PLUMBING FIRST FLOOR PLAN – AREA B
P-1.1C	PLUMBING FIRST FLOOR PLAN – AREA C
P-1.1D	PLUMBING FIRST FLOOR PLAN – AREA D
P-1.1E	PLUMBING FIRST FLOOR PLAN – AREA E
P-1.4A	PLUMBING FOURTH FLOOR PLAN – AREA A

Mechanical

H-0.1	HVAC LEGENDS & NOTES
H-0.2	HVAC SCHEDULES I OF II
H-0.3	HVAC SCHEDULES II OF II
H-0.7	HVAC PRESSURIZATION & AHU ZONING PILOT LAB PLAN
H-0.8	HVAC VHP CONTROL SEQUENCE DIAGRAM
H-0.9	AIRFLOW DIAGRAMS I OF III
H-0.10	AIRFLOW DIAGRAMS II OF III
H-0.11	AIRFLOW DIAGRAMS III OF III
H-0.12	HVAC CHILLED WATER PIPING DIAGRAM
H-0.13	HVAC HOT WATER PIPING DIAGRAM
H-0.14	HVAC HEAT RECOVERY LOOP
H-1.0	HVAC PILOT LAB BASEMENT PLANS
H-1.1	HVAC DUCTWORK FIRST FLOOR PLAN
H-1.4	HVAC MECHANICAL LEVEL PLAN
H-1.5	HVAC ROOF PLAN

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DRAWINGLIST

Electrical

E-0.2	ELECTRICAL RISER DIAGRAM
E-2.0A	ELECTRICAL BASEMENT PARTIAL POWER PLAN PART A
E-2.0B	ELECTRICAL BASEMENT PARTIAL POWER PLAN PART B
E-2.1A	ELECTRICAL FIRST FLOOR PARTIAL POWER PLAN PART A
E-2.1B	ELECTRICAL FIRST FLOOR PARTIAL POWER PLAN PART B
E-2.4A	ELECTRICAL FOURTH FLOOR PARTIAL POWER PLAN PART A
E-2.4B	ELECTRICAL FOURTH FLOOR PARTIAL POWER PLAN PART B

\\Aha-engineers.com\ahalexcam\Projects\2015-Boston-Cam-Rep\M0315-010.30\Drawings\x-Dwg Lists\2015-11-2 SD Set Drawing List.doc

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PLUMBING DEMO NOTES

1. PROJECT CONDITIONS

THE CONTRACTOR SHALL COMPLETELY FAMILIARIZE THEMSELF WITH ALL EXISTING BUILDING CONDITIONS AND SHALL VISIT THE SITE PRIOR TO BIDDING TO VERIFY THE EXISTING CONDITIONS HEREIN AFFECTED, AND SHALL INCLUDE ALL WORK REQUIRED TO COMPLETE THE PROJECT AS SHOWN ON THE DRAWINGS. NO EXTRA COMPENSATION WILL BE ALLOWED FOR UNFORESEEN CONDITIONS THAT CAN BE DETERMINED FROM A CAREFUL EXAMINATION OF THE SITE AND AREAS TO BE RENOVATED.

ITEMS OF VALUE WHICH ARE NOT INDICATED TO BE RETURNED TO THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR. STORAGE OR SALE OF ITEMS ON THE PROJECT SITE IS PROHIBITED.

PROTECTION: ENSURE THE SAFE PASSAGE OF PERSONS IN AND AROUND THE BUILDING DURING DEMOLITION. PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY. PROVIDE ADEQUATE SHORING AND BRACING TO PREVENT COLLAPSE. IMMEDIATELY REPAIR DAMAGE CAUSED BY DEMOLITION OPERATIONS. PROVIDE TEMPORARY SUPPORTS AS REQUIRED TO PREVENT DUCT SEDIMENTATION. KEEP UTILITIES IN SERVICE AND PROTECT FROM DAMAGE. DO NOT INTERRUPT UTILITIES SERVING USED AREAS WITHOUT PRIOR WRITTEN PERMISSION FROM OWNER. PROVIDE TEMPORARY SERVICES AS REQUIRED. COORDINATE ALL WORK WITH OWNER.

ALL WORK MUST BE COORDINATED WITH OWNER PRIOR TO ANY COMMENCEMENT OF WORK.

2. SCOPE OF WORK

PERFORM WORK AND PROVIDE MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THIS SECTION OF SPECIFICATIONS. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND PAY FEES REQUIRED FOR PERFORMANCE OF WORK. PERFORM ALL WORK IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS AND WITH SPECIFICATIONS AND DRAWINGS.

3. REGULATORY REQUIREMENTS

STRICTLY COMPLY WITH APPLICABLE CODES, REGULATIONS AND REQUIREMENTS OF AUTHORITY HAVING JURISDICTION.

4. HANDLING OF MATERIALS

REMOVE ALL MATERIAL DEBRIS FROM THE SITE AS IT ACCUMULATES. DO NOT STORE, SELL, BURY, OR OTHERWISE DISPOSE OF DEBRIS ON SITE. REMOVE ALL MATERIALS IN SUCH MANNER AS TO PREVENT SPILLAGE ON STREETS, WALKS, AND ADJACENT PROPERTIES, AND LEAVING FROM THE SITE, CLEAN AND FREE OF MUD, DIRT, AND DEBRIS AT ALL TIMES.

5. TRANSFER OF RESPONSIBILITY AND DISPOSITION OF MATERIALS

UPON RECEIPT OF NOTICE TO PROCEED WITH THE WORK, THE TITLE TO ALL MATERIALS FOR DEMOLITION SHALL BE VESTED IN THE CONTRACTOR AND BECOME THE CONTRACTOR'S NOT BE RESPONSIBLE FOR THE CONDITION, LOSS, OR DAMAGE TO AND PROPERTY. ALL SUCH ITEMS SHALL BE REMOVED FROM THE OWNERS PROPERTY.

6. CLEAN-UP AND REPAIR

UPON COMPLETION OF DEMOLITION WORK, REMOVE TOOLS, EQUIPMENT AND DEMOLITION MATERIALS FROM SITE. REMOVE PROTECTION AND LEAVE INTERIOR AREAS BROOM CLEAN.

REPAIR DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED. RETURN STRUCTURES AND SURFACES TO EXISTING CONDITION PRIOR TO COMMENCEMENT OF SELECTIVE DEMOLITION WORK. REPAIR ADJACENT CONSTRUCTION OR SURFACES SOILED OR DAMAGED BY SELECTIVE DEMOLITION WORK.

PLUMBING GENERAL NOTES

1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL PLUMBING DRAWINGS.

2. DRAWINGS ARE DIAGRAMMATIC DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS INITIALLY.

3. DIMENSIONS SHOWN ON PLUMBING WORK - DETAIL - DIMENSIONS IN ELEVATION AND VERTICAL.

4. DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM THIS WORK.

5. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS STATE PLUMBING CODE AND APPLICABLE LOCAL CODES.

6. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, FUEL PROCESS PIPING, SPRINKLER, STRUCTURAL AND GENERAL ARCHITECTURE.

7. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK.

8. ALL PIPING PENETRATING CEILINGS AND WALLS SHALL BE INSTALLED WITH ESCUTCHEON PLATES. ESCUTCHEON PLATES SHALL BE CHROME PLATED BRASS WHERE EXPOSED AND SHALL BE FLANGED IN UNFINISHED AREAS AND MECHANICAL ROOMS. ALL OPENINGS PENETRATING FIRE RATED ASSEMBLIES SHALL BE PROVIDED WITH FIRE RATED SEALS AS REQUIRED BY LOCAL CODE AUTHORITY.

9. MANUFACTURER'S NAMES AND ARE SPECIFIED SOLELY TO ESTABLISH STANDARD OF QUALITY FOR PERFORMANCE AND MATERIALS.

10. INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS.

11. PROVIDE ACCESS PANELS TO SYSTEM COMPONENTS THAT ARE CONCEALED AND REQUIRE PERIODIC SERVICE.

12. TYPE OF ALL FLOOR DRAINS SHALL BE SET FLUSH WITH FINISHED FLOOR. ALL PIPING ABOVE GRADE SHALL BE PROPERLY SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING STRUCTURE OR COMPONENTS.

13. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET ALL CODE REQUIREMENTS FOR SMOKE AND FLAME RATING.

14. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE WALL VALVES IN ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS.

15. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.

16. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS

17. PROVIDE GAUGE FITTINGS AND THERMOMETER WELLS AT HOT WATER SUPPLY AND RETURN BRANCHES AND AT TI-MIP VALVE AND OUTLETS.

18. VERIFY EXACT IE, ES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO INSTALLING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT.

PLUMBING LEGEND

PIPING SYSTEMS

STR	LIGHT LINE INDICATES EXISTING PIPE TO REMAIN	
RE	REMOVE EXISTING	
CTE	CONNECT TO EXISTING	
C - C	CUT - CAP	
CW	COLD WATER	
HW	HOT WATER	
HWC	HOT WATER RECIRCULATION	
BCW	NON-POTABLE COLD WATER	
BHW	NON-POTABLE HOT WATER	
BHWC	NON-POTABLE HOT WATER RECIRCULATION	
TW	TEMPERED WATER	
THW	TEMPERED WATER RECIRCULATION	
S OR W	SOIL OR WASTE	
V	VENT	
COND	STORM CONDUCTOR	
LW	LABORATORY WASTE	
LV	LABORATORY VENT	
G	NATURAL GAS	
GTU	GAS TRAIN OR APPLIANCE OR REGULATOR VENT	
IW	INDIRECT WASTE	
IWV	INDIRECT WASTE BELOW FLOOR	
PD	PUMPED DISCHARGE	
LPD	LABORATORY WASTE PUMPED DISCHARGE	
CA	COMPRESSED AIR	
CO2	CARBON DIOXIDE (CRYOGAS)	
FV	FLAMMABLE GAS VENT	
GCW	MIXED "SPECIAL" GAS (IE: HYDROGEN)	
IA	INSTRUMENT AIR (BOTTLED)	
N	INERT GAS VENT	
NO	NITROGEN (GAS/LIQUID)	
OX	OXYGEN	
VAC	VACUUM	
VE	VACUUM EXHAUST	
PWD	PURE WATER (LAB GRADE) SUPPLY	
PWR	PURE WATER (LAB GRADE)RETURN	
RCW	REVERSE OSMOSIS WATER SUPPLY	
RCW	REVERSE OSMOSIS WATER RECIRCULATION	
	FIRE MAIN	

PIPING SPECIALTIES

BOV	BALL-OFF VALVE	
BV	BALANCING VALVE	
PRV	PRESSURE REDUCING VALVE	
SV	SOLENOID VALVE	
VV	VALVE IN VERTICAL	
CV	CHECK VALVE	
HDB	HOSE END DRAIN VALVE	
	DIAPHRAGM VALVE (NORMALLY OPEN)	
	DIAPHRAGM VALVE (NORMALLY CLOSED)	
BDV	BACKWATER VALVE	
GI - T	WASTE - TRAP	
OED	OPEN END DRAIN WITHAP	
CO	CLEANOUT PLUG	
FCO	FLUSH FLOOR CLEANOUT	
	DRCW	
FA	FIRE VALVE/S	
FRG	FIRE ALIGNMENT GUIDE	
TE	SUCTION	
	CAPPED PIPE	
SHA	WATER HAMMER ARRESTOR - TYPE	
TP	AUTOMATIC TRAP PRIMER	
	STRAINER	
HB	HOSE BIBB	
EB	EMERGENCY SHOWER	
EWSH	EMERGENCY SHOWER EYEWASH COMBINATION UNIT	
EW	EYEWASH	

MISCELLANEOUS

	ARROW INDICATES DIRECTION OF FLOW
	ARROW INDICATES DIRECTION OF SLOPE DOWN
	INDEX DESIGNATION
	CAPPED CONNECTION - TOP DENOTED BY X VALUE BOTTOM DENOTED BY VALVE TYPE
	DETAIL DESIGNATION - TOP DENOTED DETAIL NUM BOTTOM DENOTED DETAIL DRAWING
TYP	FLOOR DRAIN - TYPE
WMFP	RECESSED PRESSURE MOISTURE PROHEATER
T	THERMOMETER
EX LP	EXPANSION LOOP
PG	PRESSURE GAUGE WITH ISOLATION VALVE
T - H	TEMPERATURE - PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AP	ABANDON IN PLACE
ATR	CONTRACTOR FURNISH/ASSEMBLE INSTALLED
BF	DRAINING FIXTURE
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
FCA	FURNISH IN METAL
FPC	PRIMARY FLOOR ELEVATION
FPE	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
HVAC	HVAC CONTRACTOR
HWCR	HOT WATER RECIRCULATION PUMP
HWH	HOT WATER HEATER
ID	INSIDE
LAV	LAVATORY
LBC	LIST OF PLUMBING CONTRACT
LSS	LABORATORY VENT STACK
LVR	LABORATORY VENT THRU ROOF
LWS	LABORATORY WASTE STACK
MF	ACID RECEPTOR
NIC	NORMALLY CLOSED
NPC	NOT IN PLUMBING CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OFCI	OWNER FURNISH/CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED & INSTALLED
PC	PLUMBING CONTRACTOR
SLD	SLOPE = 1/8" PER FOOT
SLG	SLOPE = 1/4" PER FOOT
SLH	SLOPE = 1/2" PER FOOT
SK	SINK
SS	SOIL STACK
SW	SERVICE SINK
TYP	TYPICAL
UR	URINAL
VS	VENT STACK
VTR	VENT THRU ROOF
WC	WATER CLOSET
WS	WASTE STACK

VALVE TAG LEGEND

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No.	DATE	ISSUED
1	11/02/2015	SCHEMATIC DESIGN

10.018.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

PLUMBING
LEGEND & NOTES

ISSUE DATE	02 NOVEMBER 2015
DRAWN BY	LJ.V.
CHECKED BY	R.P.G.
PLOTTED BY	B.L.B.
SCALE	N.T.S.

PHASE 2

P-0.1

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE				FITTING			TRAP	CARRIER	FLOW RATE	REMARKS
	MANUFACTURER	MODEL	TYPE	ID #	MANUFACTURER	TYPE	SUPPLY				
LA-1	EPOXY SINK PROVIDED WITH OVERWORK, BOTTOM FLUSH ARCHITECTURAL FLANGE				WATERMARK	8" (203 MM) CENTER LABORATORY MIXING FAUCET DECK MOUNTED, VACUUM BREAKERS W.C. SPOUT, BLADE HANDLES	1/2" NOM. - 8MM MANGLE STOPS	1 1/2" POLISHED/PLATED P-TRAP		1.5 GPM	PROVIDE WILKINS# FLOW 1.5 GPM FLOW RESTRICTING AERATOR
SK-1	JUST	STYLUS® SL-ADA 7700-ADA	18 GA. TYPE 304 STAINLESS STEEL DROP IN SINK	17" (432 MM) SINGLE HOLE FUNCT	SYMMONS	MONOARCH SINGLE HOLE 1.5 GPM AERATOR	1/2" NOM. - 8MM MANGLE STOPS	1 1/2" CHROME PLATED BRASS P-TRAP W/CO	GROHE	1.5 GPM	PROVIDE J-HOOK AS SEP AS DETECT GRID STRAINER - TAIL PIECE
SK-2	JUST	A-SINK-ECO-S	20 GA. TYPE 304 STAINLESS STEEL WALL HUNG SINK	18" 17" 8" (457	WATERMARK	7 1/2 (190 MM) LABORATORY MIXING FAUCET PANEL MOUNTED, 90-6" SPOUT, BLADE HANDLES	1/2"NOM. 15MM MANGLE STOPS WITH CAM	1 1/4" CHROME PLATED BRASS P-TRAP W/CO	KING CARRIER TO SUIT	1.5 GPM	PROVIDE WILKINS# FLOW 1.5 GPM FLOW RESTRICTING AERATOR
EWS-1	GUARDIAN	G6F210	RECESSED SAFETY STATION W/ SURFACE MOUNTED WALL BOX, W/ SHOWER HEAD	-	-	-	1 1/4"TW	-	-	20 GPM	
EWS-2	GUARDIAN	G1000-WB-HTUD	SAFETY STATION W/ SURFACE MNTD. W/ BOWL, SHOWER HEAD	-	-	-	1 1/4"TW	-	-	20 GPM	
CY-1	WW	SP1000-1104	SOLO PRIME SUBMERSIBLE SUMP PRIMER	-	-	-	-	-	-	-	120V POWER BY EC

PUMP SCHEDULE

SYMBOL	DUTY	TYPE	FLOW (GPM)	HEAD FT	ELECTRICAL VOLTS/PHASE/HP	HP	RPM	MANUFACTURER MODEL	ACCESSORIES	REMARKS
AWLP-1	HOT WATER RECIRCULATOR	IN-LINE	1	6	120/1/60	1/40	1800	GRUNDFOS UP15-10SU	1, 2, 3	BRONZE CONSTRUCTION

ACCESSORIES:
1. UP TIMER, 2. AQUASTAT, 3. FACTORY-SUPPLIED DIELECTRIC ISOLATION VALVE SET

ELECTRIC WATER HEATER SCHEDULE

SYMBOL	STORAGE GALS	RECOVERY		TEMP SETTING	MANUFACTURER AND MODEL #	ELECTRICAL		SERVICE	LOCATION	REMARKS
		GPH	GPH RISE			KW	VPH			
EWH-1	10	6	60	120°	A.O. SMITH DEL-20	1.5	120/1/60	MOP SINK	CENTER CLOSET	WITH 1" ANTI-SCALD MIXING VALVE
EWH-2	2.5	2	60	120°	ESPAR EWT2.5	1.44	120/1/60	LOUNGE SINK	CLOSET	WITH 1/2" ACCUMULATOR, W/ ANTI-SCALD MIXING VALVE
EWH-3	1	1 GPM	41	120°	ESPAR HE8EH30	6.8	208/1/60	ACP PM LOOP	RECEIVING	WITH 1/2" ACCUMULATOR, MEDIC MOP SINK, LINT TO DET.

LABORATORY EQUIPMENT CONNECTION SCHEDULE

SYMBOL	NAME	HOT	WAR	TR	LAB WAT	HA	BA	NG	CO2	AC	VACUUM		COMPRESSED AIR		REMARKS
		ID #	ID #	ID #							PROV	ID #	PROV	ID #	
LA-1	LAB SINK	1/2"	1/2"	-	3"	-	-	-	-	-	1 1/4"	-	-	-	
EWDS-1	COMBINATION UNIT	-	-	1 1/4"	-	-	-	-	-	-	-	-	-	-	
EWDS-2	COMBINATION UNIT	-	-	1 1/4"	-	-	-	-	-	-	-	-	-	-	
BIO-1	BIO-SAFETY CABINET	-	-	-	-	-	-	-	-	-	-	9"	3/4"	-	-
BIO-2	BIO-SAFETY CABINET	-	-	-	-	-	-	-	-	-	-	9"	3/4"	-	-
BIO-3	BIO-SAFETY CABINET	-	-	-	-	-	-	-	-	-	-	9"	3/4"	-	-
AC-1	AUTOCLAVE - MEDIA PREP	-	-	-	-	-	-	-	-	1/2"	-	9"	3/4"	-	-
AC-2	AUTOCLAVE - DECON	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	-
AC-3	AUTOCLAVE - STERILI. ISO	-	-	-	-	-	-	-	1/2"	-	-	-	-	-	-
CUP-1	CEILING UTILITY PANEL	-	-	-	-	-	-	-	-	-	-	9"	3/4"	-	- PROVIDE ASCH 58 TWO 1"
CUP-2	CEILING UTILITY PANEL	-	-	-	-	-	-	-	-	1/2"	-	9"	3/4"	-	- PROVIDE ASCH 58 TWO 1"

DRAIN SCHEDULE

SYMBOL	TYPE	MFGR	MODEL	OUTLET	STRAINER	REMARKS
FD-A	FLOOR DRAIN	J.R. SMITH	-	CAULK	NICKEL BRON. 5	SEDIMENT BUCKET
FD-B	FLOOR DRAIN	J.R. SMITH	GROSE 800 SRC (MALE)	BUTT WELD	STAINLESS STEEL	SEDIMENT BUCKET, 8A DWG FI
FD-C	FLOOR DRAIN	J.R. SMITH		CAULK	NICKEL BRON. 5	SOLID COVER WITH FUNNEL

NOTES:
1. NOTIFY GC BEFORE DRAIN, OBTAIN EXACT INFORMATION RELATIVE TO FINISH FLOOR LEVEL, FLOOR CONSTRUCTION AND SET TOP OF DRAIN AT
2. DRAIN TO BE ADJUSTABLE
3. DRAIN TO BE AS INDICATED ON THE DRAWINGS
4. DRAIN IN AREAS WITH POWERED FLOORS SHALL HAVE SQUARE STRAINERS

LABORATORY TRIM FITTINGS SCHEDULE

SYMBOL	MANUFACTURER	SERVICE	HANDLE	BUTTON COLOR	LETTERING COLOR	REMARKS
T-1	WATER MASER	CARBON DIOXIDE	CO2	PINK	BLACK	LASER 864-CL-1-CRT - PRESSURE REGULATOR FIXTURE, LOW PRESSURE/CHROMA SCHOOL KIT, L, MOUNTED DOUBLE
T-2	WATER MASER	VACUUM	VAC	YELLOW	BLACK	LSB2-1000WA - NEEDLE VALVE ASSEMBLY, MAIN MOUNTED DOUBLE @ 90°
T-3	WATER MASER	CARBON DIOXIDE	CO2	PINK	BLACK	LM1P-2000WA-FINE CONTROL NEEDLE VALVE ASSEMBLY, PANEL MOUNTED
T-4	WATER MASER	CARBON DIOXIDE	CO2	PINK	BLACK	LSB7LMA-750 - WALL MOUNTED PRESSURE REGULATOR FIXTURE, 90° CHP COMPRESSION FITTING OUTLET
T-5	WATER MASER	NITROGEN	N2	BROWN	WHITE	LSB7LMA-750 - WALL MOUNTED PRESSURE REGULATOR FIXTURE, 90° CHP COMPRESSION FITTING OUTLET
T-6	WATER MASER	PURE WATER	RO/DI	WHITE	BLACK	LSB4 PURE WATER FAUCET, TRI-LINED BRASS, DECK MOUNTED MANUAL CONTROL, 8" RISER SWING GOOSENECK
T-7	WATER MASER	VACUUM	VAC	YELLOW	BLACK	VLFT, 8-3M-NV PANEL MOUNTED FEMALE QUICK CONNECT FOR 8.5 NOMI. HOSE - FINAL REGULATION BY END USER
T-8	WATER MASER	CARBON DIOXIDE	CO2	PURPLE	BLACK	VLFT, 8-3M-NV PANEL MOUNTED FEMALE QUICK CONNECT FOR 8.5 NOMI. HOSE - FINAL REGULATION BY END USER

WATER HAMMER ARRESTOR SCHEDULE

SYMBOL	J.R SMITH	ASAHI	UPC	REMARKS	T.U. MAX
A	5000	EQUAL	EQUAL	STAINLESS STEEL	11
B	5010	EQUAL	EQUAL	STAINLESS STEEL	32
C	5020	EQUAL	EQUAL	STAINLESS STEEL	60
D	5030	EQUAL	EQUAL	STAINLESS STEEL	110
E	5040	EQUAL	EQUAL	STAINLESS STEEL	154

PLUMBING FIXTURE SUPPLY SCHEDULE

FIXTURE	DESIGNATION	WSFU WASTE	VENT	COLD WATER	HOT WATER
SINK	SK	2"	2"	1/2"	1/2"
MOP SERVICE SINK	MSS	3"	2"	1/2"	1/2"

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ISSUED	BY	ITEMS
11/05/2015	SCHEMATIC DESIGN	

15178.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

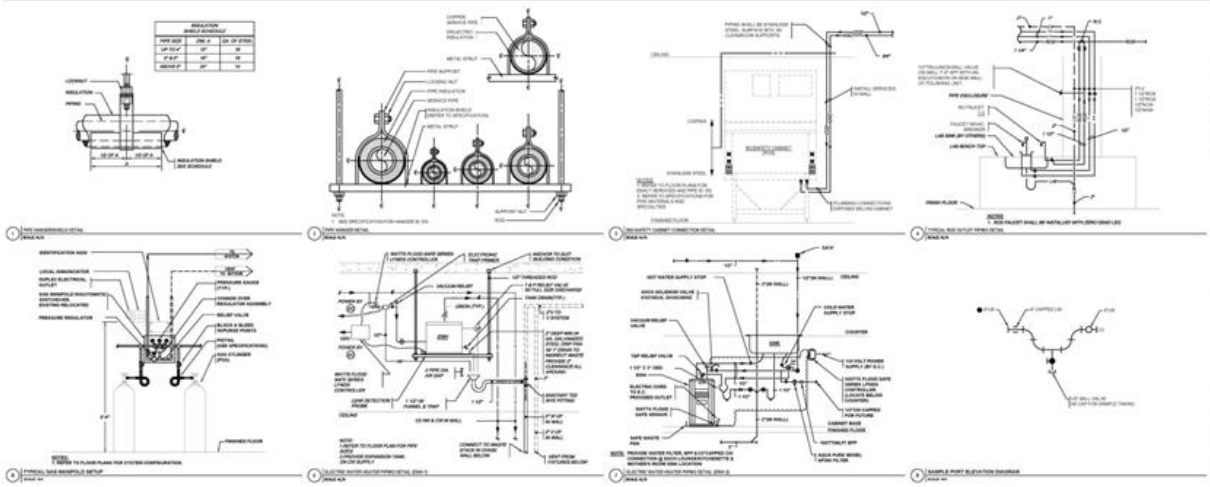
200 SIDNEY STREET
CAMBRIDGE, MA

PLUMBING SCHEDULES

ISSUE DATE	02 NOVEMBER 2015
APPROVED BY	J.J.P.G.
DRAWN BY	M.J.B.
CHECKED BY	N.R.

PHASE 2

P-0.2



a.s. Dawson
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no.	date	drawing
1	11/05/2015	SCHEMATIC DESIGN

15-178.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

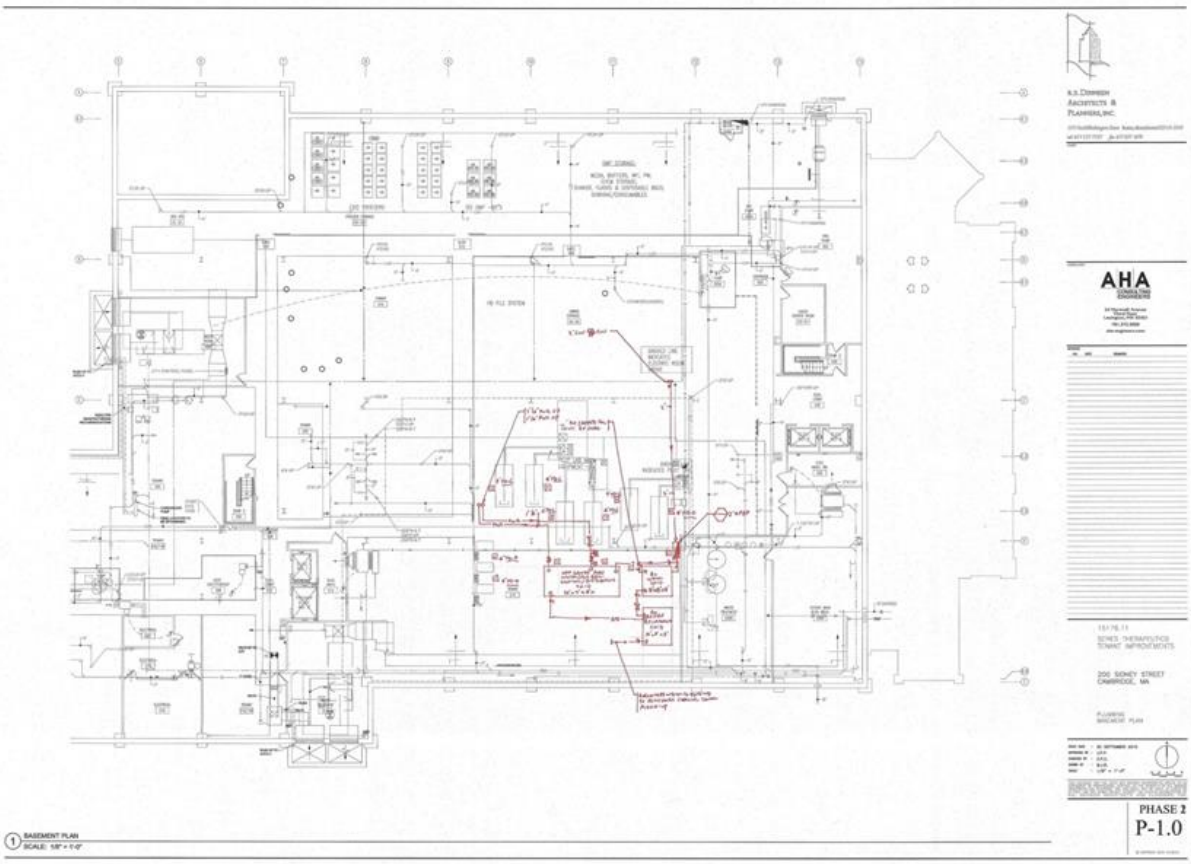
200 SIDNEY STREET
CAMBRIDGE, MA

PLUMBING
DETAILS

issue date	02 NOVEMBER 2015
project #	15-178
drawn by	D.P.G.
check by	M.J.B.
scale	N.T.S.

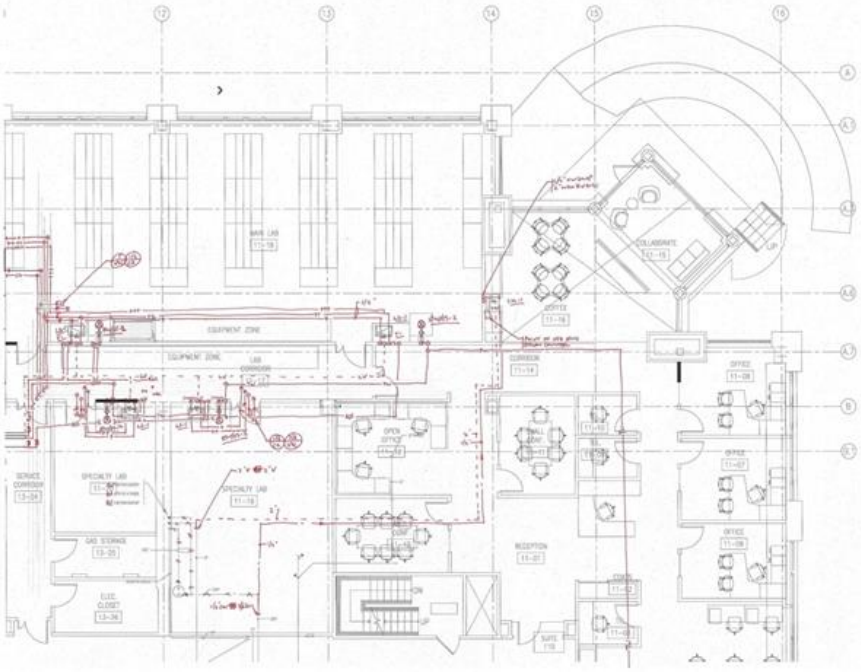
PHASE 2

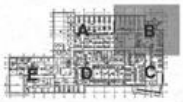
P-0.□



1 BASEMENT PLAN
SCALE: 1/8" = 1'-0"

PHASE 2
P-1.0





1 PLUMBING FIRST FLOOR PLAN - AREA 1
SCALE: 1/4" = 1'-0"

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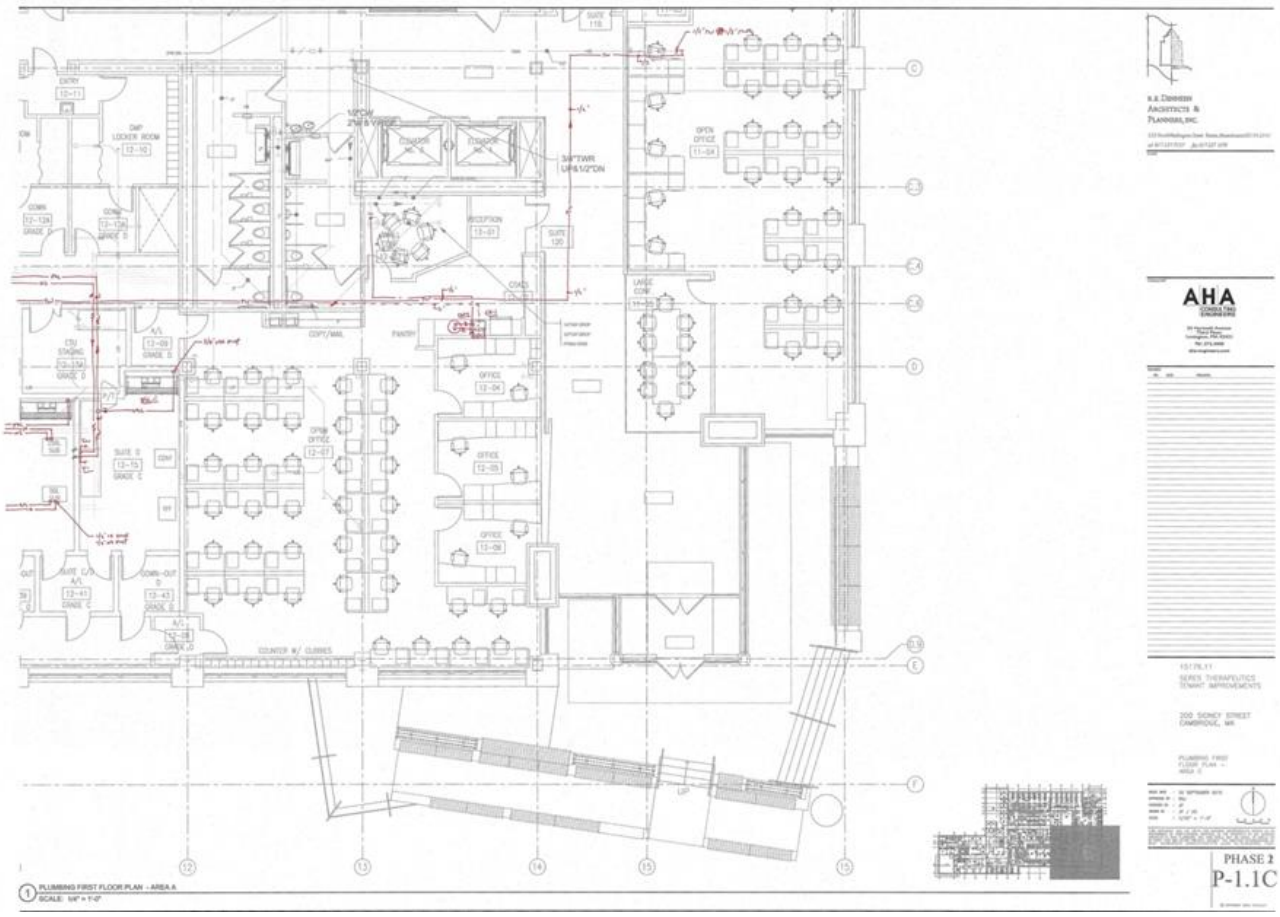
PLUMBING FIRST
FLOOR PLAN -
AREA 1

PHASE 2
P-1.1B



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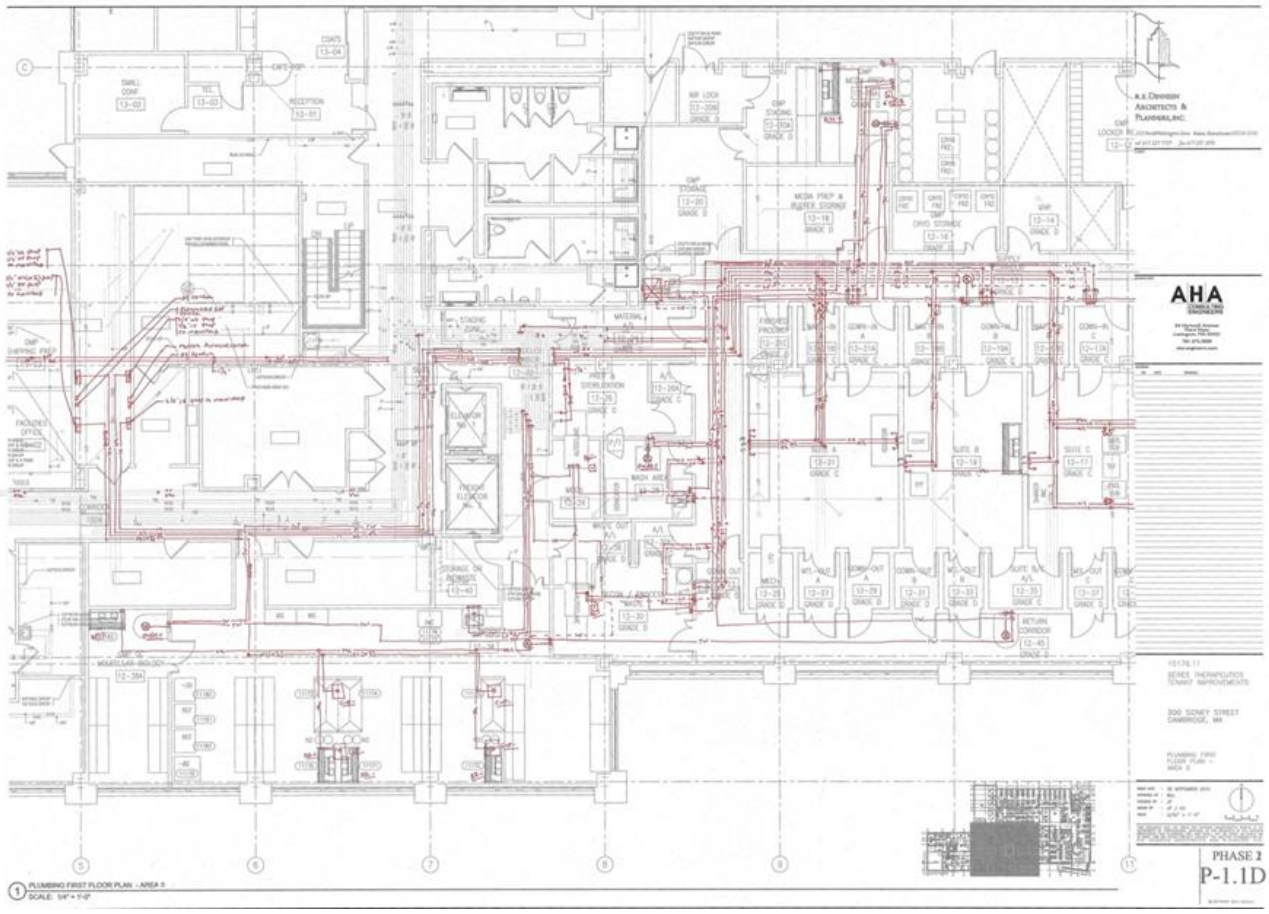
PLUMBING FIRST FLOOR PLAN – AREA A

PHASE 1
P-1.1C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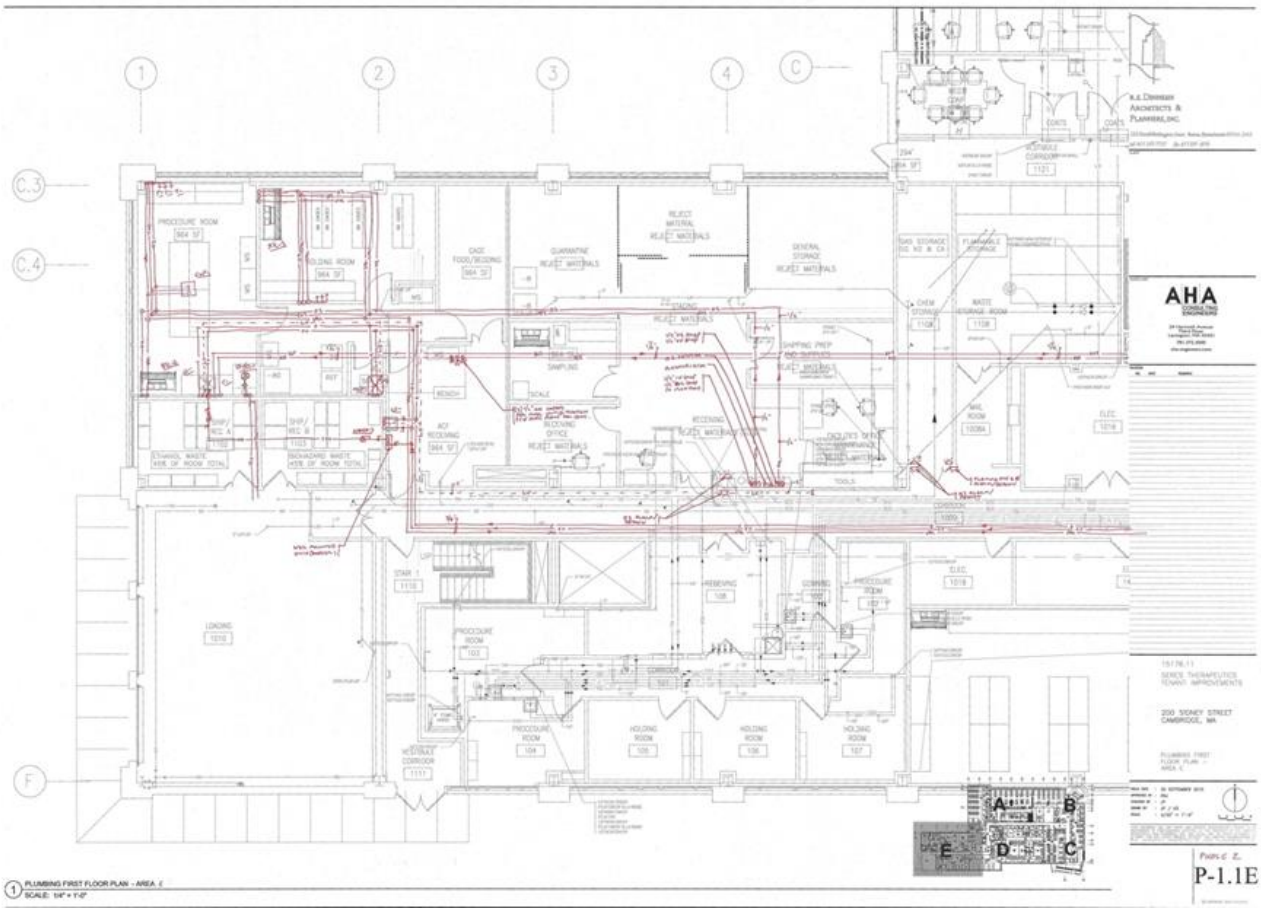
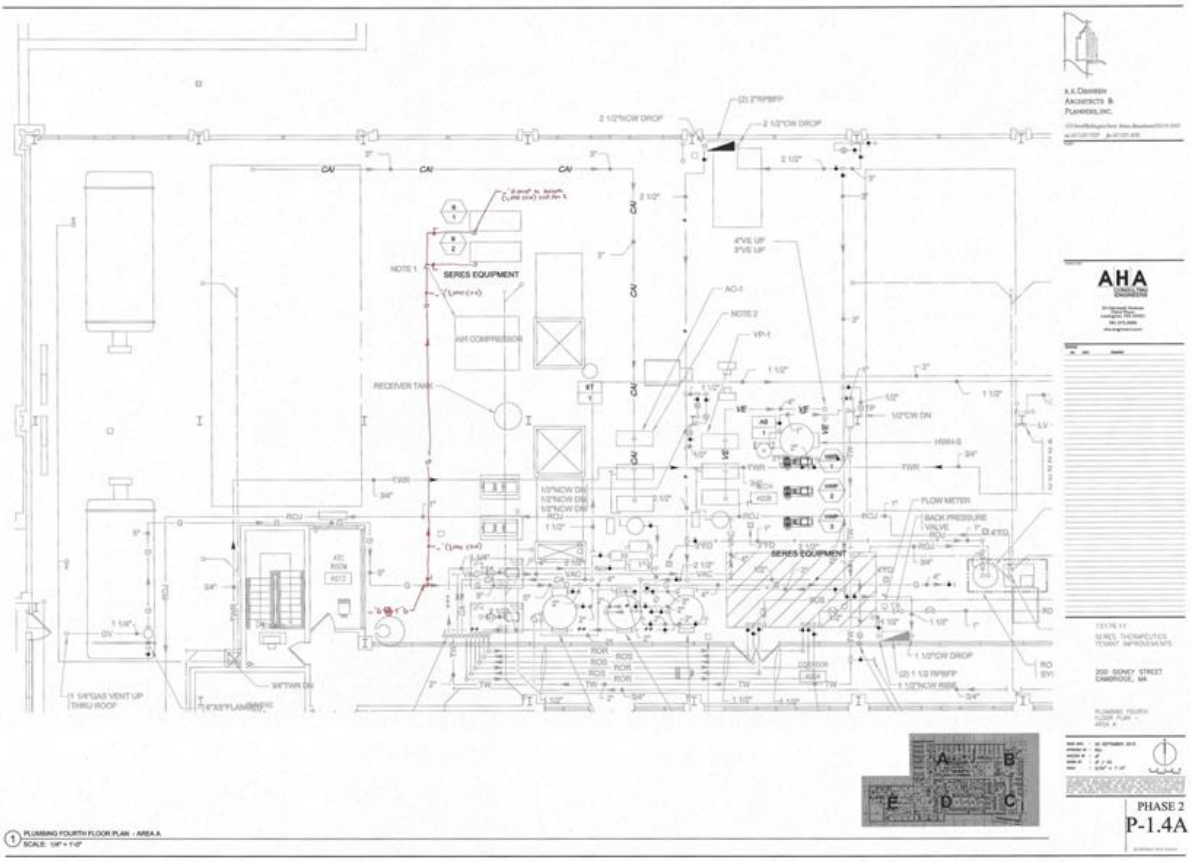
PLUMBING FIRST
FLOOR PLAN -
AREA 5
PHASE 1
P-1.1D
1 PLUMBING FIRST FLOOR PLAN - AREA 5
SCALE: 1/4" = 1'-0"


1
2
3
4
C
C.3
C.4
F
PROCEDURE ROOM
964 SF
HOLDING ROOM
964 SF
CAGE WASH/MISTING
964 SF
QUARANTINE
REJECT MATERIALS
REJECT MATERIAL
REJECT MATERIALS
GENERAL STORAGE
REJECT MATERIALS
GAS STORAGE
FLAMMABLE STORAGE
CHEM STORAGE
1104
WASTE STORAGE ROOM
1106
STAGING
REJECT MATERIALS
SHIPPING PREP
REJECT MATERIALS
SAMPLING
SCALE
BENCH
ACF WASHING
964 SF
BLOCKING OFFICE
REJECT MATERIALS
RECEIVING
REJECT MATERIALS
CAGE WASH
1004
MEZZ ROOM
1008A
ELEC
1018
ETHANOL WASTE
HAZARDOUS WASTE
LOADING
1010
STAIR 1
1116
PROCEDURE ROOM
103
FREEZING
108
GOWNING
PROCEDURE ROOM
102
ELEC
1018
PROCEDURE ROOM
104
HOLDING ROOM
105
HOLDING ROOM
106
HOLDING ROOM
107
VESTIBULE CORRIDOR
1117
A
B
C
D
E
AHA
200 SIDNEY STREET
CAMBRIDGE, MA
PLUMBING FIRST FLOOR PLAN - AREA E
AREA E
P-1.1E
1 PLUMBING FIRST FLOOR PLAN - AREA E
SCALE: 1/4" = 1'-0"



1 PLUMBING FOURTH FLOOR PLAN - AREA A
SCALE: 1/4" = 1'-0"

HVAC DEMOLITION NOTES

HVAC GENERAL NOTES

HVAC GENERAL NOTES (cont.)

HVAC LEGEND

PIPING SYSTEMS

DUCTWORK SPECIALTIES

HVAC ABBREVIATIONS

PIPING SPECIALTIES

MISCELLANEOUS

AHA
CONSULTING ENGINEERS

SERCE THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
LEGENDS, ABBREVIATIONS
& NOTES

PHASE 2

H-0.1

AIR HANDLING UNIT — AHU

SYMBOL	SERVICE	LOCATION	TYPE	CFM TOTAL	CFM O.A.	SUPPLY FAN CFM	SUPPLY FAN T.S.P.	SUPPLY FAN QTY	SUPPLY FAN MAX RPM	SUPPLY FAN BHP	SUPPLY FAN MOTOR HP	COOLING WATER COIL MBH TOTAL	COOLING WATER COIL MBH SENS.	COOLING WATER COIL EAT DB	COOLING WATER COIL EAT WB	COOLING WATER COIL LAT DB	COOLING WATER COIL GPM	COOLING WATER COIL MAX WATER P.D.	COOLING WATER COIL MAX AIR P.D.	HOT WATER COIL MBH	HOT WATER COIL EAT	HOT WATER COIL LAT	HOT WATER COIL GPM	HOT WATER COIL FACE AREA	HOT WATER COIL MAX WATER P.D.	FILTERS	ELECT V	ELECT PH	ELECT HTG	WT.	REMARKS
AHU-1	PRIMARY	BASEMENT	INDOOR	10000	-	10000	4.5	2	-	16.40	20	424.80	341	75	63	55.7	160	10.6	0.66	324.5	45	90	162.2	-	0.98	MERV 13 / 13	480	3	60	YES	-	(2)
AHU-2	LAB	BASEMENT	INDOOR	5750	-	5750	3.2	2	-	9.43	10	10.10	80	91	62	62.8	84.0	5.60	0.19	13.5	45	90	168.0	-	0.13	MERV 13 / 13	480	3	60	YES	-	(2)
AHU-3	PREP STERILIZATION	BASEMENT	INDOOR	600	-	600	3.4	2	-	1.05	1.5	0.00	60	87	63	59.8	7.99	19.1	0.01	10.1	45	90	36.04	-	0.06	MERV 13 / 13	480	3	60	YES	-	(2)
AHU-4	SUITE A	BASEMENT	INDOOR	3000	-	3000	4.4	2	-	5.5	5	4.90	60	87	63	59.8	39.7	7.00	0.01	8.90	45	90	140.4	-	0.11	MERV 13 / 13	480	3	60	YES	-	(2)
AHU-5	SUITE B	BASEMENT	INDOOR	2400	-	2400	4.7	2	-	3.4	5	5.00	60	87	63	59.7	20.8	7.30	0.00	6.11	45	90	73.75	-	0.13	MERV 13 / 13	480	3	60	YES	-	(2)
AHU-6	SUITE C	BASEMENT	INDOOR	2400	-	2400	4.8	2	-	3.5	5	5.00	60	87	63	59.8	20.7	2.50	0.01	6.08	45	90	73.75	-	0.11	MERV 13 / 13	480	3	60	YES	-	(2)
AHU-7	SUITE D	BASEMENT	INDOOR	2000	-	2000	3.3	2	-	2.5	3	4.00	60	87	63	59.8	17.4	16.8	0.15	0.00	45	90	87.92	-	0.16	MERV 13 / 13	480	3	60	YES	-	(2)

(1) SELECTION BASED ON TRANE IS-WSTC CHANGER
(2) SELECTION BASED ON HUNTER HCC GRAMSEFOS 2250 UNIT

AIR COOLED WATER CHILLER (30% PROPYLENE GLYCOL) — ACWC

SYMBOL	SERVICE	LOCATION	EVAPORATOR GPM	EVAPORATOR ENT	EVAPORATOR LVG	EVAPORATOR PD	CONDENSER GPM	CONDENSER ENT	CONDENSER LVG	CONDENSER PD	LBS OF REFRIGERANT	REFRIGERANT TYPE	COND TYPE	MAX AMPS	MODEL NO.	TONS	ELECT V	ELECT PH	ELECT HTG	EMERGENCY POWER	REMARKS
ACWC-1	P.F.	ROOF	37	42	30	6	-	-	-	-	400	HFO-1234	W	180.0	-	127.5	208	3	60	-	-
ACWC-2	P.F.	ROOF	37	42	30	6	-	-	-	-	400	HFO-1234	W	180.0	-	127.5	208	3	60	-	-

SELECTION BASED ON TRANE RTAC 150

HEAT EXCHANGER — HX

SYMBOL	SERVICE	LOCATION	HOT SIDE ENT	HOT SIDE LVT	HOT SIDE GPM	HOT SIDE PD	50% GLYCOL SIDE ENT	50% GLYCOL SIDE LVT	50% GLYCOL SIDE GPM	50% GLYCOL SIDE PD	MODEL NUMBER	REMARKS
HX-1	GLYCOL HOT WATER	BASEMENT	180	155	115	-	105	150	150	-	-	-

SELECTION BASED ON B&G

PUMPS — P

SYMBOL	SERVICE	GPM	HEAD FT	TYPE	MAT CON.	MFG/HP	B.HP	MOTOR HP	MOTOR RPM	V	PH	EMERGENCY POWER	REMARKS
CWP-1	PILOT PUMP	225	60	END SUCT	TC/TC	P	3.8	5	1750	460	3	-	-
CWP-2	PILOT PUMP	225	60	END SUCT	TC/TC	P	3.8	5	1750	460	3	-	-
CWP-3	PILOT PUMP	225	60	END SUCT	TC/TC	P	3.8	5	1750	460	3	-	-
HSP-1	HOT SI POOL LOOP	-	-	-	-	-	-	-	-	-	-	-	-
HSP-2	HOT SI POOL LOOP	-	-	-	-	-	-	-	-	-	-	-	-
CHWP-1	PILOT PUMP AIR HANDLING UNITS	350	70	END SUCT	S.S.	P	5.8	7.5	1760	460	3	-	-
CHWP-2	PILOT PUMP AIR HANDLING UNITS	350	70	END SUCT	S.S.	P	5.8	7.5	1760	460	3	-	-
CHWP-3	PILOT PUMP AIR HANDLING UNITS	350	70	END SUCT	S.S.	P	5.8	7.5	1760	460	3	-	-
BP-1	PILOT PUMP BOILERS	-	-	-	-	-	-	-	-	-	-	-	-
BP-2	PILOT PUMP BOILERS	-	-	-	-	-	-	-	-	-	-	-	-
BP-3	PILOT PUMP BOILERS	-	-	-	-	-	-	-	-	-	-	-	-
HRP-1	HEAT RECOVERY LOOP	-	-	-	-	-	-	-	-	-	-	-	-
HRP-2	HEAT RECOVERY LOOP	-	-	-	-	-	-	-	-	-	-	-	-

SELECTION BASED ON BELL & KOSSETT

HUMIDIFIER (STEAM) — H

BASED ON 3 PSIG STEAM IN COIL

SYMBOL	CFM	LBS/HR	DUCT SIZE W	DUCT SIZE H	AIR SIDE DUCT PD(IN.WG)	AIR SIDE DUCT TEMP.(DEG)	MAX S.P.	DISPERSION DISTANCE	REMARKS
H-1	-	-	-	-	-	-	-	-	-
H-2	-	-	-	-	-	-	-	-	-
H-3	-	-	-	-	-	-	-	-	-
H-4	-	-	-	-	-	-	-	-	-
H-5	-	-	-	-	-	-	-	-	-
H-6	-	-	-	-	-	-	-	-	-
H-7	-	-	-	-	-	-	-	-	-

SELECTION BASED ON

EXPANSION TANK & AIR SEPARATOR — ET & AS

SYMBOL	SERVICE	TANK/ACCEPT VOLUME	TANK DIMENSIONS	AIR SEPARATOR MODEL NO.	MAX. CAP. GPM	AIR SEPARATOR DIMENSIONS	REMARKS
ET-1/AS-1	HOT WATER SYSTEM	-	-	-	-	-	-
ET-2/AS-2	CHILLED WATER SYSTEM	-	-	-	-	-	-
ET-3/AS-3	HEAT RECOVERY LOOP	-	-	-	-	-	-

SELECTION BASED ON

EXHAUST FAN SCHEDULE — EF

SYMBOL	MODEL	TYPE	SERVICE	CFM	S.P. (IN.)	FAN RPM	BHP	HP	VOLTS	PH.	HZ	REMARKS
EF-1	-	-	-	-	-	-	-	-	-	-	-	-
EF-2	-	-	-	-	-	-	-	-	-	-	-	-

SELECTION BASED ON

ELECTRONIC GENERAL NOTES:

1. EACH SUPPLY & RETURN/EXHAUST DIFFUSER/RUNOUT SHALL BE PROVIDED WITH 4 VOLUME DAMPER. REFER TO CEILING DIFFUSER BRANCH TAKE-OFF DETAIL FOR ADDITIONAL INFORMATION.
2. RUNOUT SIZES TO FLEXIBLE DIFFUSERS SHALL MATCH INLET SIZE NOTED IN THE DIFFUSER REGISTER AND GRILLE SCHEDULE.
3. RUNOUT SIZES TO TERMINAL UNITS SIV, (1), FPT) SHALL MATCH INLET SIZE UNLESS NOTED OTHERWISE ON THE FLOOR PLANS.
4. ALL VOLUME DAMPERS LOCATED ABOVE HARD NON-ACCESSIBLE CEILINGS SHALL BE PROVIDED WITH A YOUNG REGULATOR VOLUME DAMPER FOR REMOTE BALANCING.

SUPPLY AIR DIFFUSER RUNOUT SIZE SCHEDULE FOR OPEN OFFICE AREAS

OPEN OFFICE CFM RANGE	DUCT RUNOUT SIZE TO DIFFUSER
0 - 120	8"ø
121 - 180	8"ø
181 - 260	8"ø
261 - 325	10"ø
326 - 415	10"ø
417 - 525	10"ø
526 - 715	12"ø

THE ABOVE ALSO APPLIES TO STORAGE ROOMS, KITCHENS, DATA CENTERS, CORRIDORS AND ALL NON-CRITICAL SPACES THAT REQUIRE A MAXIMUM NC LEVEL OF 35.

EXHAUST REGISTER/GRILLE RUNOUT SIZE SCHEDULE FOR OPEN OFFICE AREAS

OPEN OFFICE CFM RANGE	DUCT RUNOUT SIZE TO REGISTER/GRILLE
0 - 150	8"ø
151 - 200	10"ø
201 - 300	10"ø
301 - 400	12"ø
401 - 550	14"x6"
551 - 775	20"x10"
776 - 950	24"x10"

SUPPLY AIR DIFFUSER RUNOUT SIZE SCHEDULE FOR ENCLOSED OFFICE OR CONFERENCE ROOMS

ENCLOSED OFFICE CFM RANGE	DUCT RUNOUT SIZE TO DIFFUSER
0 - 120	8"ø
121 - 180	8"ø
181 - 225	8"ø
226 - 295	10"ø
297 - 350	12"ø
351 - 535	10"ø
537 - 660	12"ø

EXHAUST REGISTER/GRILLE RUNOUT SIZE SCHEDULE FOR ENCLOSED OFFICE OR CONFERENCE ROOMS

ENCLOSED OFFICE CFM RANGE	DUCT RUNOUT SIZE TO REGISTER/GRILLE
0 - 150	8"ø
151 - 200	10"ø
201 - 300	10"ø
301 - 400	12"ø
401 - 550	14"x10"
551 - 775	20"x10"
776 - 950	24"x10"

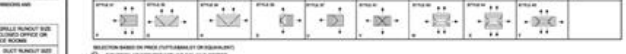
THE ABOVE ALSO APPLIES TO TRAINING ROOMS, CLASSROOMS, CONFERENCE CENTERS AND ALL SOUND CRITICAL SPACES THAT REQUIRE A MAXIMUM NC LEVEL OF 30.

DIFFUSER, REGISTER & GRILLE SCHEDULE

SYMBOL	SIZE	MODEL	FUNCTION	MATERIAL	TYPE	FINISH	DAMPER	OPEN OFFICE CFM RANGE	OPEN OFFICE MAX NC	TP	ENCLOSED OFFICE & CONF. ROOM CFM RANGE	ENCLOSED OFFICE & CONF. ROOM MAX NC	REMARKS
SD-1	8"ø	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	0 - 120	30	0.100	0 - 150	30	(1)(2)(3)(4)
SD-2	8"ø	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	121 - 180	30	0.100	151 - 180	30	(1)(2)(3)(4)
SD-3	8"ø	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	186 - 260	30	0.090	181 - 225	30	(1)(2)(3)(4)
SD-4	10"x6"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	261 - 375	30	0.100	226 - 315	30	(1)(2)(3)(4)
SD-5	12"x6"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	376 - 500	30	0.090	317 - 425	30	(1)(2)(3)(4)
SD-6	12"x8"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	501 - 675	30	0.100	426 - 575	30	(1)(2)(3)(4)
SD-7	14"x8"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	676 - 900	30	0.090	576 - 775	30	(1)(2)(3)(4)
SD-8	16"x10"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	776 - 1035	30	0.073	660 - 885	30	(1)(2)(3)(4)
SD-9	18"x10"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	836 - 1120	30	0.090	855 - 1035	30	(1)(2)(3)(4)
SD-10	18"x12"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	1,126 - 1,410	30	0.070	996 - 1,210	30	(1)(2)(3)(4)
SD-11	22"x12"	SMD	SUPPLY	STEEL	CEILING	PER ARCH	NONE	1,411 - 1,800	30	0.090	1,116 - 1,350	30	(1)(2)(3)(4)
SR-1	8"ø	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	0 - 90	30	0.036	0 - 90	30	
SR-2	10"ø	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	91 - 140	30	0.030	91 - 140	30	
SR-3	12"ø	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	141 - 200	30	0.024	141 - 200	30	
SR-4	12"x6"	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	201 - 275	30	0.041	201 - 275	30	
SR-5	12"x8"	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	276 - 365	30	0.042	276 - 365	30	
SR-6	16"x10"	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	366 - 500	30	0.034	366 - 500	30	
SR-7	20"x10"	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	501 - 660	30	0.034	501 - 660	30	
SR-8	24"x10"	SR	SUPPLY	STEEL	EXPO/LOUVRE	PER ARCH	TEE	661 - 1,240	30	0.061	661 - 1,240	30	
RD-1	8"ø	SMD	RETURN	STEEL	CEILING	PER ARCH	NONE	0 - 120	30	0.090	0 - 150	30	(1)(2)(3)(4)
RD-2	8"ø	SMD	RETURN	STEEL	CEILING	PER ARCH	NONE	121 - 200	30	0.090	151 - 180	30	(1)(2)(3)(4)
RD-3	12"x6"	SMD	RETURN	STEEL	CEILING	PER ARCH	NONE	201 - 300	30	0.092	181 - 225	30	(1)(2)(3)(4)
RD-4	12"x8"	SMD	RETURN	STEEL	CEILING	PER ARCH	NONE	301 - 415	30	0.072	226 - 315	30	(1)(2)(3)(4)
RD-5	16"x10"	SMD	RETURN	STEEL	CEILING	PER ARCH	NONE	416 - 1,120	30	0.092	316 - 885	30	(1)(2)(3)(4)
RD-6	18"x12"	SMD	RETURN	STEEL	CEILING	PER ARCH	NONE	1,121 - 1,410	30	0.092	886 - 1,210	30	(1)(2)(3)(4)
RG-1	24"x24"	3TRM	RETURN	STEEL	CEILING	PER ARCH	NONE	0 - 1,200	30	0.035	0 - 1,200	30	(1)
RG-2	48"x24"	3TRM	RETURN	STEEL	CEILING	PER ARCH	NONE	1,201 - 2,200	30	0.061	1,200 - 1,600	30	(1)
EG-1	8"ø	EG	EXHAUST	STEEL	CEIL./WALL	PER ARCH	NONE	0 - 75	30	0.090	0 - 75	30	(1)
EG-2	8"ø	EG	EXHAUST	STEEL	CEIL./WALL	PER ARCH	NONE	76 - 150	30	0.090	76 - 150	30	(1)
EG-3	12"x6"	EG	EXHAUST	STEEL	CEIL./WALL	PER ARCH	NONE	151 - 225	30	0.090	151 - 225	30	(1)
EG-4	12"x12"	EG	EXHAUST	STEEL	CEIL./WALL	PER ARCH	NONE	226 - 300	30	0.090	226 - 300	30	(1)
EG-5	24"x12"	EG	EXHAUST	STEEL	CEIL./WALL	PER ARCH	NONE	301 - 450	30	0.090	301 - 450	30	(1)
EG-6	48"x12"	EG	EXHAUST	STEEL	CEIL./WALL	PER ARCH	NONE	451 - 600	30	0.090	451 - 600	30	(1)
LD-1	48"L x 1 SLOT	TBD/136	SUPPLY	ALUMINUM	CEILING	PER ARCH	NONE	0 - 350	30	0.130	0 - 350	30	(3) 1" SLOT, 0"/8 INLET
LD-2	96"L x 2 SLOT	TBD/136	SUPPLY	ALUMINUM	CEILING	PER ARCH	NONE	351 - 640	30	0.088	351 - 640	30	(3) 1" SLOT, 0"/8 INLET
LD-3	96"L x 3 SLOT	TBD/136	SUPPLY	ALUMINUM	CEILING	PER ARCH	NONE	641 - 900	30	0.077	641 - 900	30	(3) 1" SLOT, 0"/8 INLET
LD-4	96"L x 4 SLOT	TBD/136	SUPPLY	ALUMINUM	CEILING	PER ARCH	NONE	901 - 1200	30	0.072	901 - 1200	30	(3) 1" SLOT, 0"/8 INLET

THE FOLLOWING DIFFUSER CALLOUTS ARE FOR SQUARE CALLOUTS ONLY (EG: (1, 2, 3, 4 & 11)

THE FOLLOWING DIFFUSER CALLOUTS ARE FOR RECTANGULAR CALLOUTS ONLY (EG: 5, 6, 8 & 10)



SELECTION BASED ON PRICE (TUTTLE/BAILEY OR EQUIVALENT)

(1) REDUCTION AIR DIFFUSER WITH OPTION OF LAY-IN BORDER.
(2) REDUCTION AIR DIFFUSER WITH/OUT REDUCTION VANES.
(3) RETURN AIR GRILLE (PERFORATED) RETURN PANEL - STEEL CONSTRUCTION).
(4) WITH ACOUSTICALLY LINED PLENUM.
(5) DIFFUSER CONNECTIONS SHALL BE ON THE INSIDE NECK AND SEALED AIR TIGHT.
(6) ALUMINUM SHALL BE USED IN WET LOCATIONS SUCH AS SHOWER ROOMS, CLASSROOM ROOMS, ETC.
(7) PROVIDE A DIFFUSER BOOT. REFER TO DETAILS FOR REQUIREMENTS.

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HVAC
SCHEDULES 1 OF 1

PHASE 2
H-0.2

HEAT RECOVERY COILS — HRCS & HRCE

SYMBOL	UNIT	TYPE	FLUID	NUMBER OF COILS	TOTAL CFM	MODE	TOTAL CAPACITY (MBH) TOTAL	SENSIBLE	AIR SIDE EAT DB	EAT WB	LAT DB	LAT WB	APD IN. WG	PLATE SIDE TOTAL GPM	ENT (°F)	LWT	RPD PT. WSC	FACE AREA (SF)	FACE VELOCITY (FPM)	ROWS	FPI	MODEL NUMBER	REMARKS
HRCS-1	ERU-1	HEAT RECOVERY SA	-	-	10,000	SUMMER WINTER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HRCS-1	RFU	HEAT RECOVERY SA	-	-	10,000	SUMMER WINTER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

REVISION ID #ADDED ON

HOT WATER BOILER — B

SYMBOL	CAP GROSS MBH	HEATING SURFACE (2 BOX)	EWT °F	LWT °F	# OF PHASES	FUEL	MBH GAS IN	MBH GAS OUT	GPH OIL	GAS PRESSURE IN W.C.	BURNER HP	OIL PUMP HP	V	PH	REMARKS
B-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SELECTION BASED ON

AIR COOLED CONDENSING UNIT — ACCU

SYMBOL	SERVES	LOCATION	O.A. AMB	TONS	COMPRESSOR QTY	COMPRESSOR FLA	COMPRESSOR LRA	COMPRESSOR KW	COMPRESSOR V	CONDENSER PH	CONDENSER HP	CONDENSER FLA	CONDENSER LRA	SEER	LBS. OF REFRIGERATION	REFRIGERANT TYPE	EMERGENCY POWER	REMARKS
ACCU-1	ACP	ROOF	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)(2)
ACCU-2	SERVER RM	ROOF	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)(2)
ACCU-3	SERVER RM	ROOF	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)(2)

(1) SELECTION BASED ON
(2) UNIT SHALL BE PROVIDED WITH LOW AMBIENT CONTROLS DOWN TO 0°F.

ENERGY RECOVERY UNIT (100% OA) — ERU

SYMBOL	SERVICE	LOCATION	SUPPLY CFM	E.S.P.	EXHAUST CFM	E.S.P.	TOTAL H.P.	RPM	MOTOR HP	SEER	LBS. OF REFRIGERATION	REFRIGERANT TYPE	FILTERS DA EFF.	FILTERS EXH. EFF.	MOTORS V	MOTORS P	MOTORS Hz	REMARKS
ERU-1	PLNT LAB	ROOF	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SELECTION BASED ON :

CONSTANT/VARIABLE VOLUME TERMINAL (HOT WATER) — CV/VV

SYMBOL	PRIMARY AIR CFM MIN/MAX	INLET SIZE	OUTLET SIZE	OPER. SP	MAX N.C.	COIL DATA @ 200°F EAT	COIL DATA @ 200°F MBH	COIL DATA @ 200°F GPM	COIL DATA @ 200°F MAX PD FT	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL HP	REMARKS
VV-1	0 - 500	8"Ø	12X10	0.25	35	-	(3)	(3)	4.0	-	-	-	-
VV-2	201 - 750	8"Ø	12X10	0.25	27	-	(3)	(3)	4.0	-	-	-	-
VV-3	751 - 1100	10"Ø	14X10	0.25	25	-	(3)	(3)	4.0	-	-	-	-
VV-4	1101 - 1500	12"Ø	16X10	0.25	27	-	(3)	(3)	5.0	-	-	-	-
VV-5	1501 - 2100	14"Ø	24X12	0.25	30	-	(3)	(3)	5.0	-	-	-	-
VV-6	2101 - 2600	16"Ø	24X12	0.25	30	-	(3)	(3)	5.0	-	-	-	-
VV-7	2601 - 3000	20X10	30X12	0.25	35	-	(3)	(3)	5.0	-	-	-	-

SELECTION BASED ON
FOR ALL VV BOXES SHOWN WITH COILS, REFER TO PIPE DRAWINGS FOR COIL MBH & GPM REQUIREMENTS. FOR ALL VV BOXES SHOWN WITHOUT COILS SHALL OVERSIZED COIL DATA.

(1) VV BOX MINIMUM CFM SHALL BE 75% OF MAXIMUM CFM UNLESS SHOWN OTHERWISE ON DRAWINGS.
(2) SEE PIPING DRAWING FOR ACTUAL MBH & GPM.
(3) NC'S ARE DERIVED FROM SOUND POWER LEVELS, WHICH ARE OBTAINED IN ACCORDANCE WITH ARI STANDARD 880-2008 AND ASHRAE STANDARD 130-2008.

REHEAT COILS (HOT WATER) — WRC

BASED ON 140°F EWT

SYMBOL	CFM	DUCT SIZE WIDTH	DUCT SIZE HEIGHT	AIR SIDE EAT	AIR SIDE LAT	AIR SIDE MAX SP	WATER SIDE GPM	WATER SIDE MAX PD	MBH (2 ROW MIN.)	REMARKS
WRC-1	-	-	-	-	-	-	-	-	-	-
WRC-2	-	-	-	-	-	-	-	-	-	-
WRC-3	-	-	-	-	-	-	-	-	-	-

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NO.	DATE	ISSUED
	11/06/2015	SCHEMATIC DESIGN

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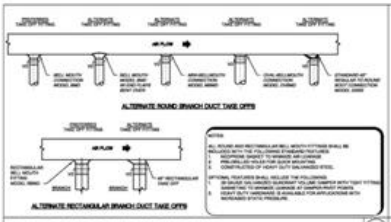
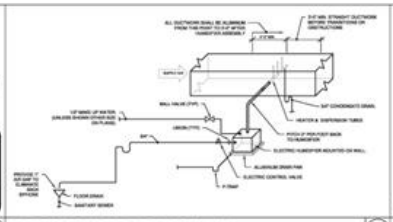
SCHEDULES Y OF Y

PHASE 2

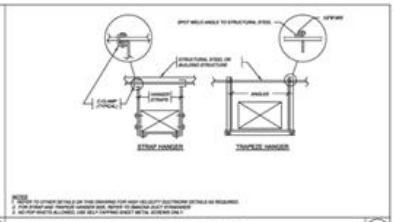
H-0.3



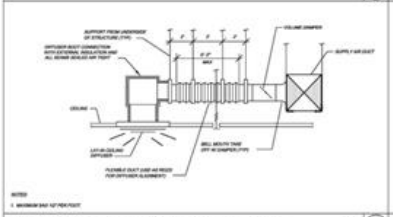
BELL MOUTH CONNECTION DETAIL NTS 1



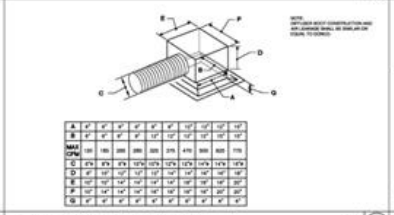
ELECTRIC HUMIDIFIER PIPING DETAIL NTS 2



DUCT HANGER DETAIL (LOW VELOCITY) NTS 3

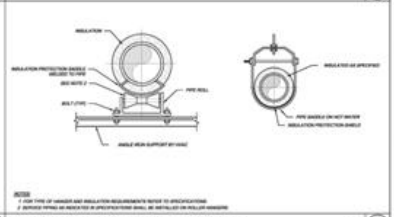


CEILING DIFFUSER BRANCH TAKE-OFF DETAIL NTS 4

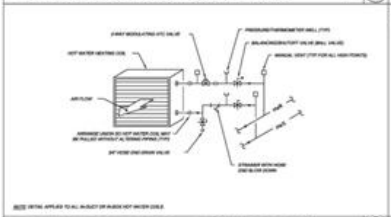


A	4"	6"	7"	8"	9"	10"	12"	14"	16"	18"
B	4"	6"	7"	8"	9"	10"	12"	14"	16"	18"
MAX CFM	130	180	255	280	325	375	470	555	625	775
C	4"x	6"x	6"x	12"x	12"x	12"x	12"x	14"x	14"x	18"x
D	4"	12"	12"	12"	12"	14"	14"	14"	16"	18"
E	12"	12"	14"	14"	14"	16"	16"	16"	18"	20"
F	12"	12"	14"	14"	16"	16"	16"	20"	20"	20"
G	4"	6"	7"	8"	9"	6"	6"	6"	6"	6"

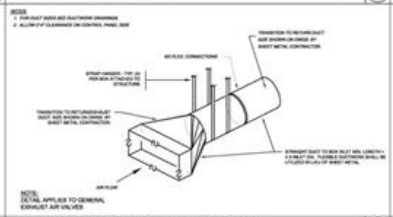
DIFFUSER CONNECTION DETAIL NTS 5



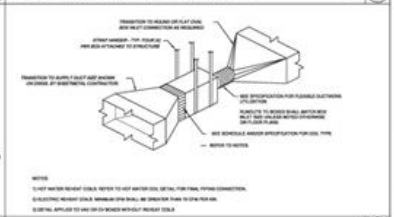
PIPE HANGER AND PIPE ROLLER DETAIL NTS 6



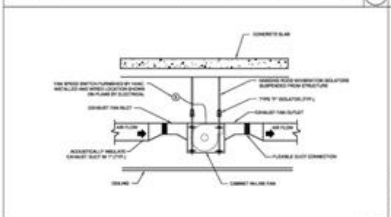
HOT WATER COIL PIPING DETAIL (2-WAY CONTROL) NTS 7



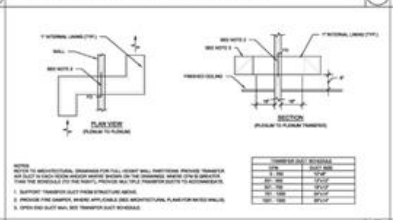
TEK-AIR EXHAUST/HOOD AIR VALVE DETAIL NTS 8



VARIABLE AIR + CONSTANT VOLUME BOX W/REHEAT COIL DETAIL NTS 9

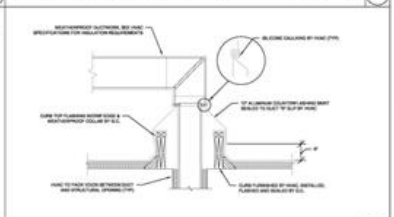


INLINE CABINET FAN MOUNTING DETAIL NTS 10



CFM	DUCT SIZE
0 - 100	8"x12"
101 - 200	12"x12"
201 - 300	12"x18"
301 - 1000	20"x12"
1001 - 1500	20"x18"
1501 - 1800	20"x24"

TRANSFER DUCT DETAIL AND SCHEDULE NTS 11



DUCTWORK ROOF PENETRATION DETAIL NTS 12

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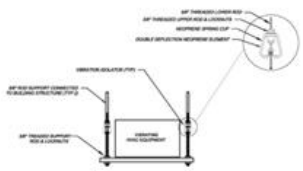
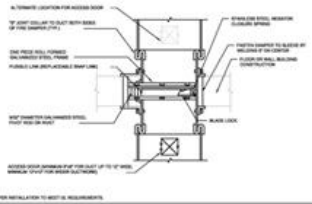
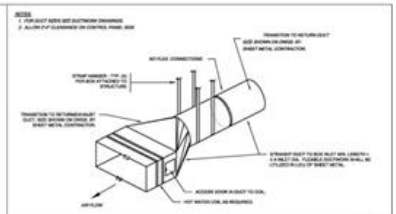
PHASE 2
H-0.4



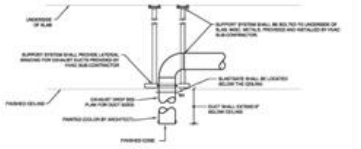
VIBRATION ISOLATOR DETAIL NTS 12



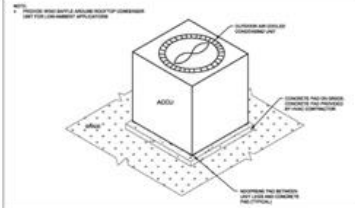
FIRE DAMPER WITH BLADES OUTSIDE THE AIR STREAM NTS 13



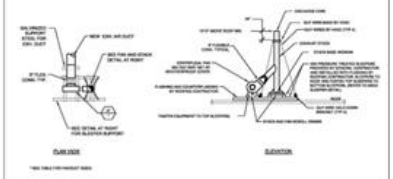
TEK-AIR SUPPLY AIR VALVE DETAIL W/ HOT WATER COIL DETAIL NTS 14



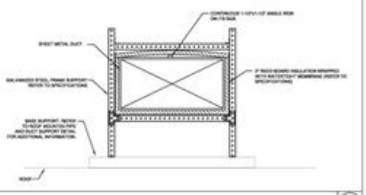
LAB SPOT EXHAUST DETAIL NTS 15



ROOF TOP CONDENSER MOUNTING DETAIL NTS 16



LABORATORY EXHAUST FAN + STACK DETAIL NTS 17



EXTERIOR DUCTWORK SUPPORT DETAIL NTS 18

R.B. Dennison
Architects &
Planners, Inc.

AHA
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ENGINEERS

15118.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

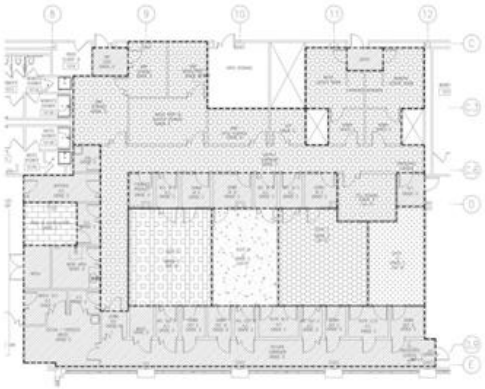
200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
DETAILS II OF II

PHASE 2

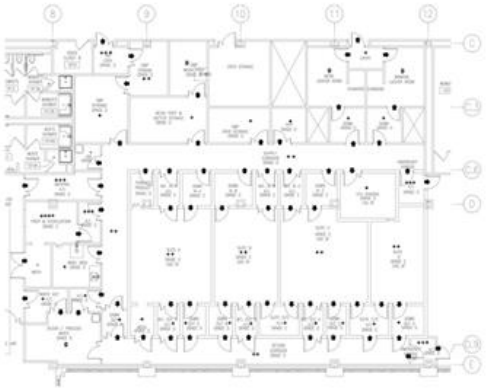
H-0.5

S.S. Dinardo
Architects &
Planners, Inc



AHU-1 PRIMARY 100% O.A.
AHU-2 SECONDARY GMP, COMMON
AHU-3 SECONDARY PREP & STERILIZATION
AHU-4 SECONDARY SUITE A
AHU-5 SECONDARY SUITE B
AHU-6 SECONDARY SUITE C
AHU-7 SECONDARY SUITE D

1 AHU ZONING PLAN
SCALE: 1/8" = 1'-0"



2 HVAC PRESSURIZATION PLAN
SCALE: 1/8" = 1'-0"

AHA
CONSULTING ENGINEERS
39 Cornwall Avenue
Third Floor
Lexington, MA 02421
781.372.2000
aha-engineers.com

No.	DATE	ISSUED
	11/05/2014	SCHEMATIC DESIGN

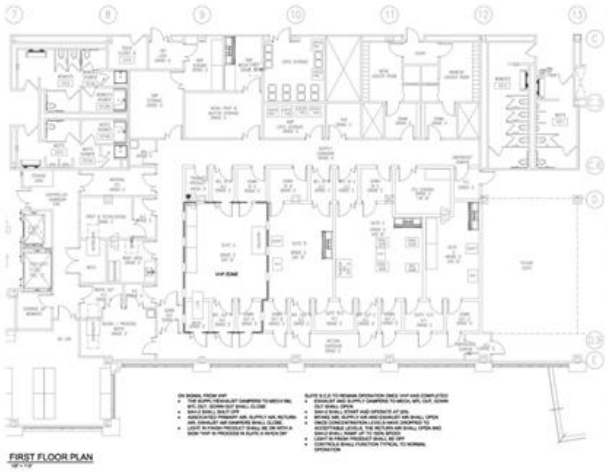
13.018.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

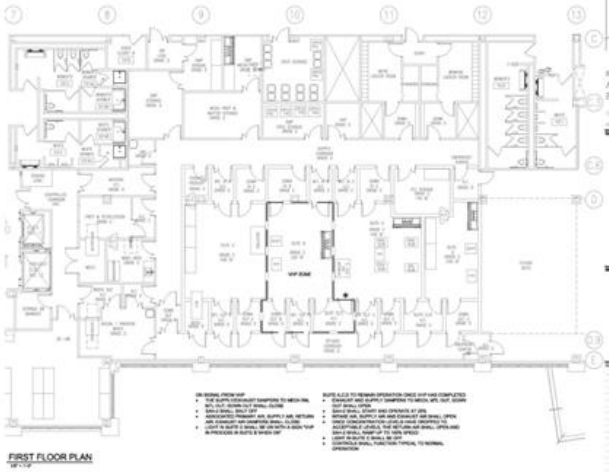
HVAC PRESSURIZATION
& AHU ZONING
PILOT LAB PLANS

ISSUE DATE	05 NOVEMBER 2014
APPROVED BY	RDJ
DRAWN BY	JP
CHECKED BY	JP / JC
SCALE	1/8" = 1'-0"

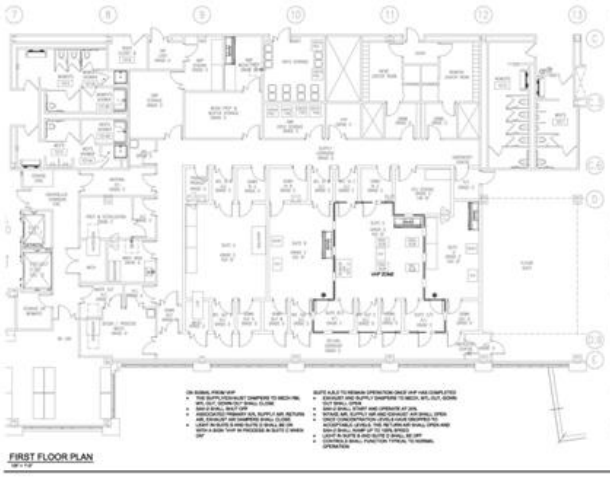
PHASE 2
H-0.7



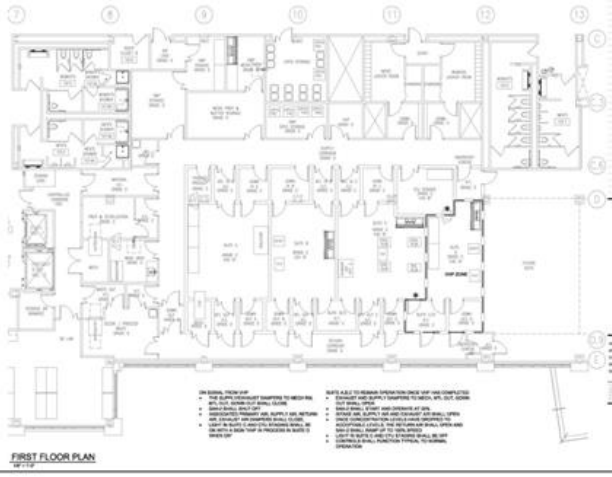
FIRST FLOOR PLAN



FIRST FLOOR PLAN



FIRST FLOOR PLAN



FIRST FLOOR PLAN

A.E. Dimeco
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ENGINEERS

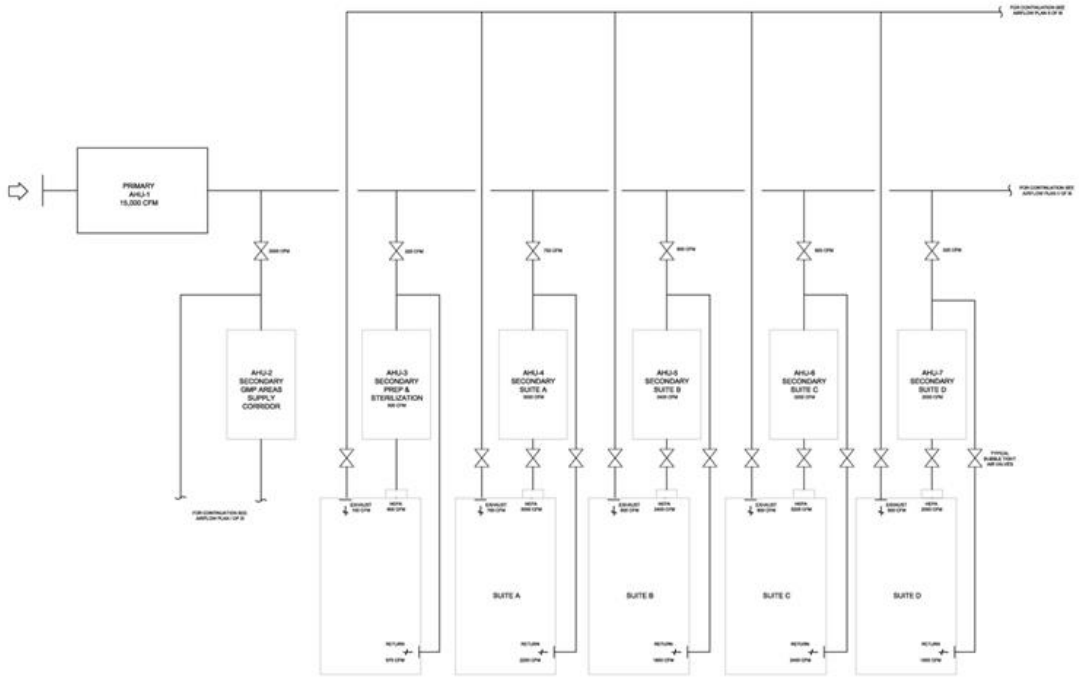
15115.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
VAV CONTROL SEQUENCE
DIAGRAM

02 NOVEMBER 2015

PHASE 2
H-0.8



R.E. Dinneen
Architects &
Planners, Inc

AHA
CONSULTING
ENGINEERS

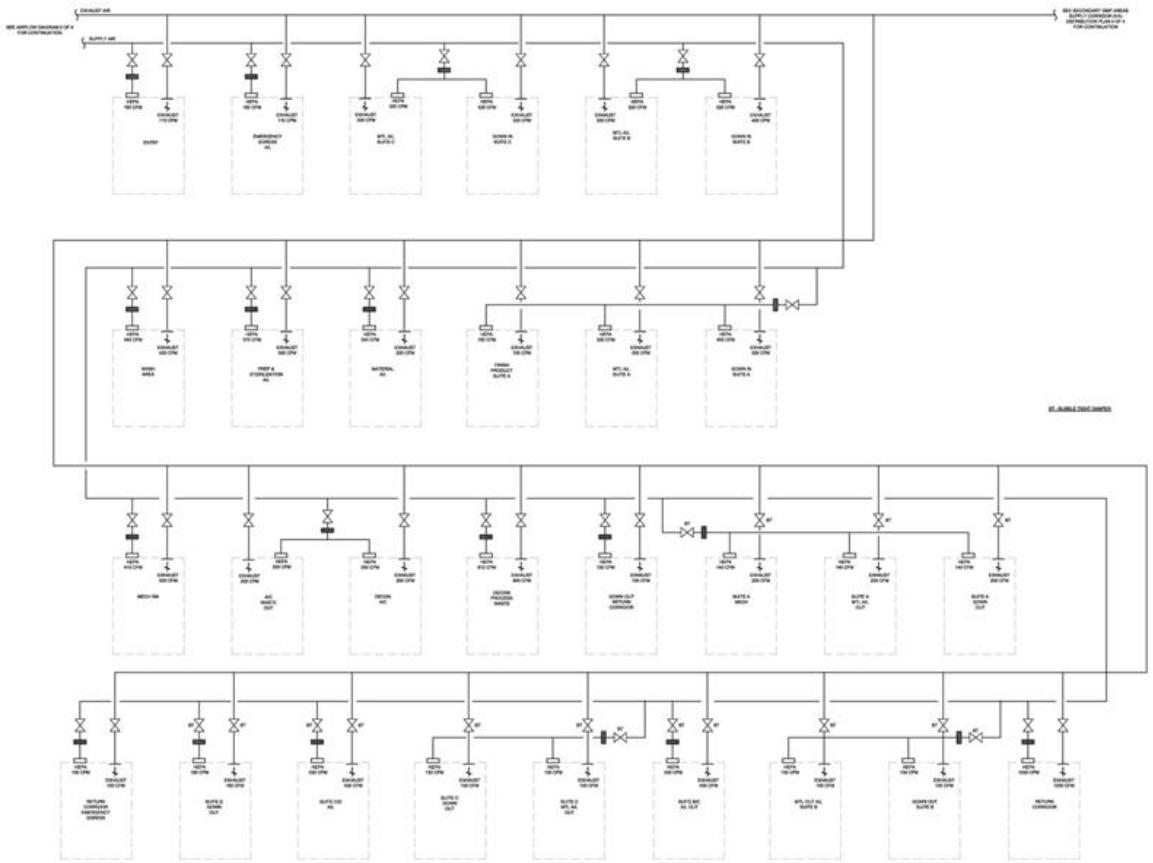
15119.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
AIRFLOW DIAGRAMS 1 OF 1X

PHASE 2

H-0.9



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ARCHITECTS &
PLANNERS, INC

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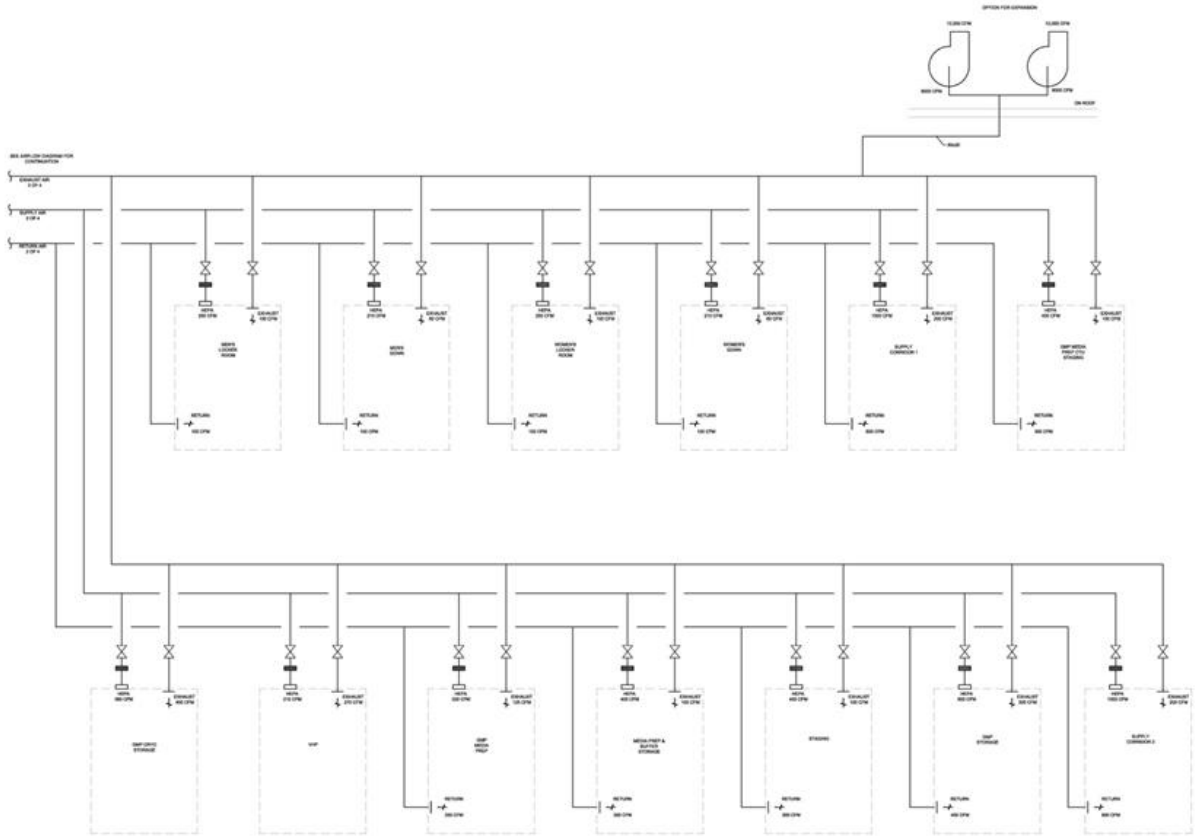
CONSULTING
ENGINEERS

15118.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

PHASE 2
H-0.10



R.B. Dennison
Architects &
Planners, Inc.

AHA
CONSULTING ENGINEERS
99 Cornwall Avenue
West Roxbury
Lexington, MA 02421
781.271.2000
aha-eng@aha-1.com

no.	DATE	ISSUED
	11/08/2013	SCHEMATIC DESIGN

15119.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

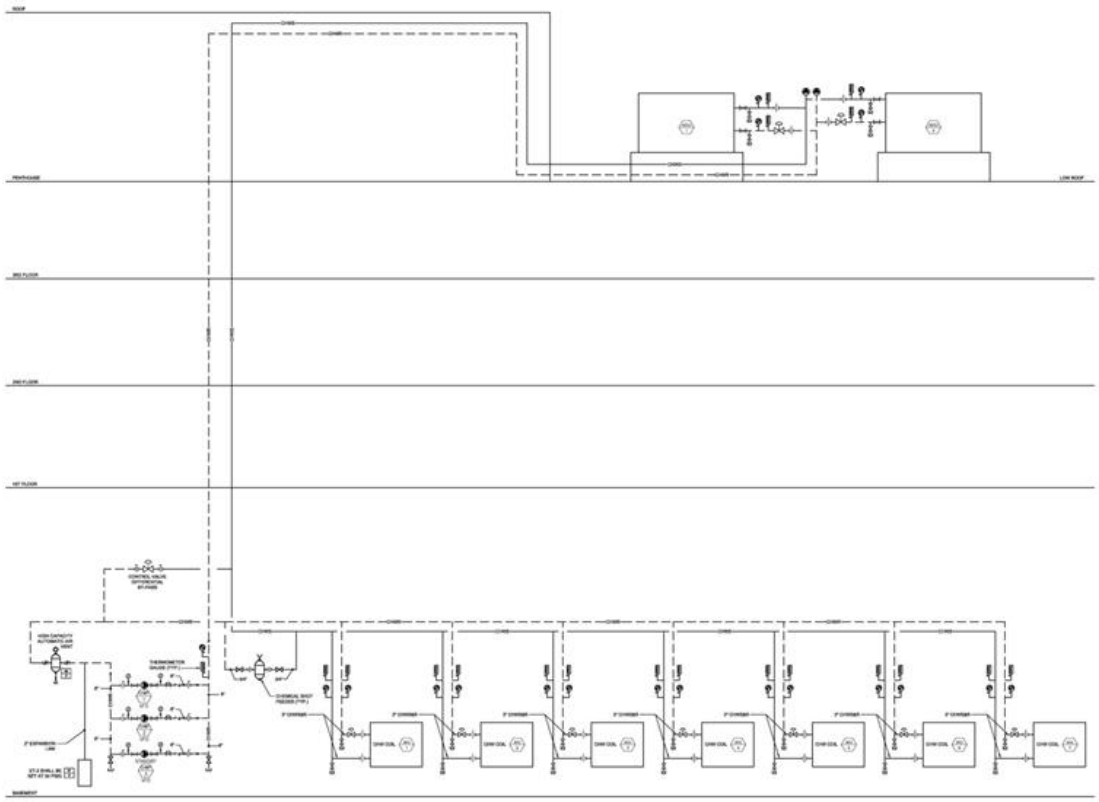
200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
AIRFLOW DIAGRAMS (6 OF 6)

ISSUE DATE	22 NOVEMBER 2013
APPROVED BY	MEK
DRAWN BY	MEK
CHK'D	R.T.S.

PHASE 2

H-0.11



CHILLED WATER PIPING SCHEMATIC

NTS

R.B. Dennehy
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Planners, Inc

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CONSULTING ENGINEERS

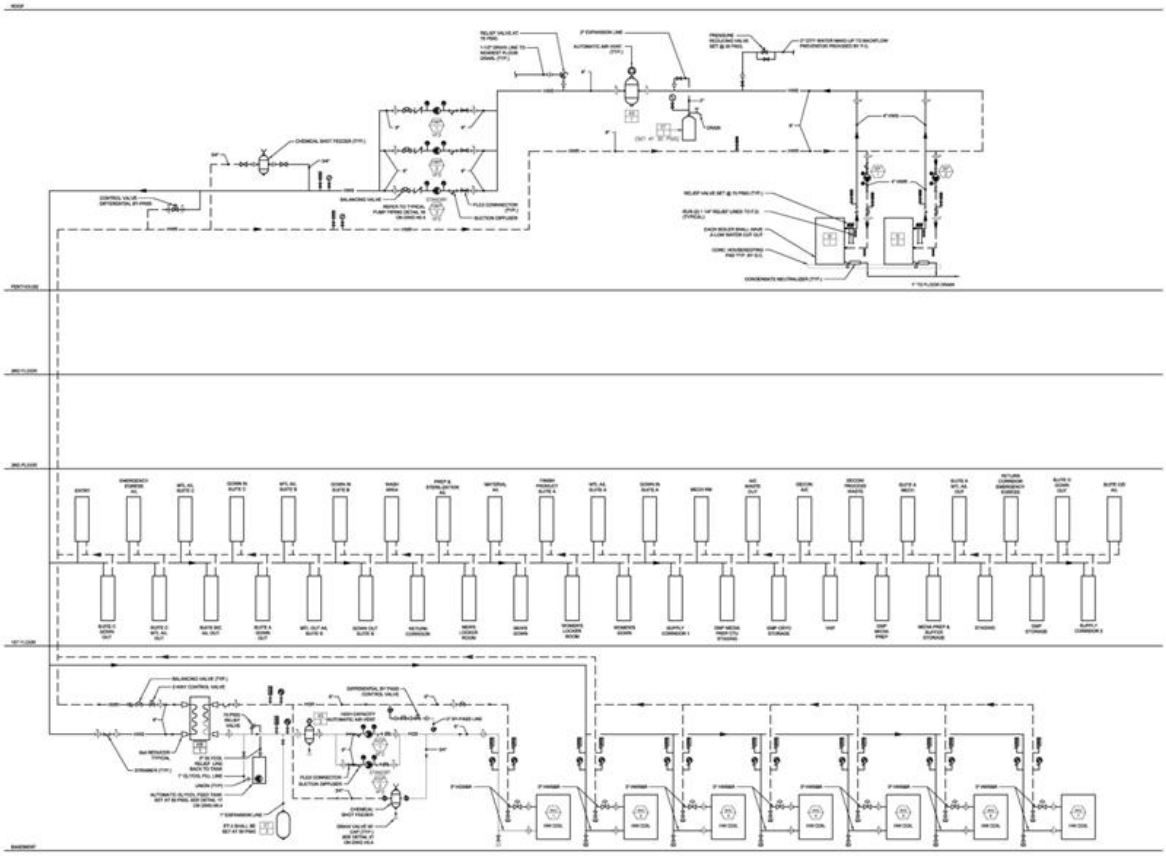
15118.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
CHILLED WATER
PIPING DIAGRAM

PHASE 2

H-0.12



HOT WATER PIPING SCHEMATIC

S.S. Dennen
Architects &
Planners, inc

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CONSULTING
ENGINEERS

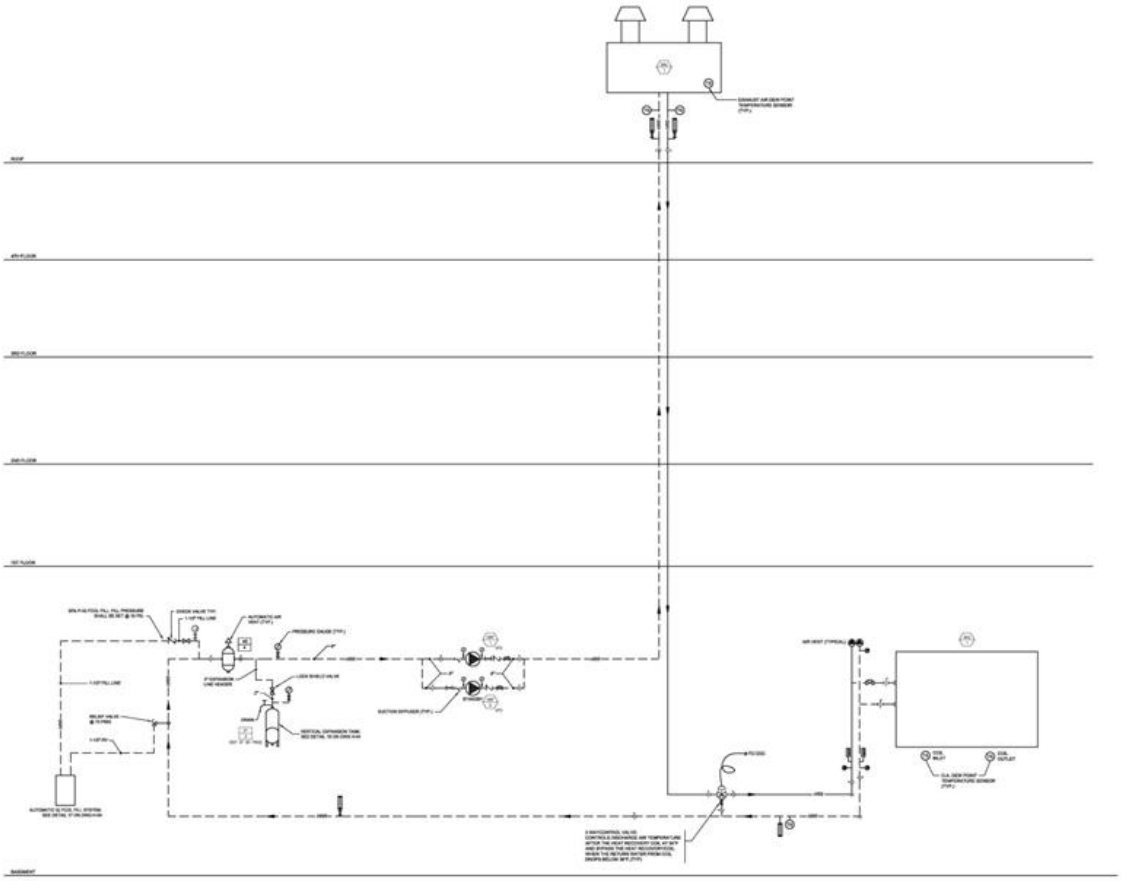
15118.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
HOT WATER
PIPING DIAGRAM

PHASE 2

H-0.13



HEAT RECOVERY LOOP PIPING SCHEMATIC

R.B. Dennison
Architects &
Plumbers, inc.

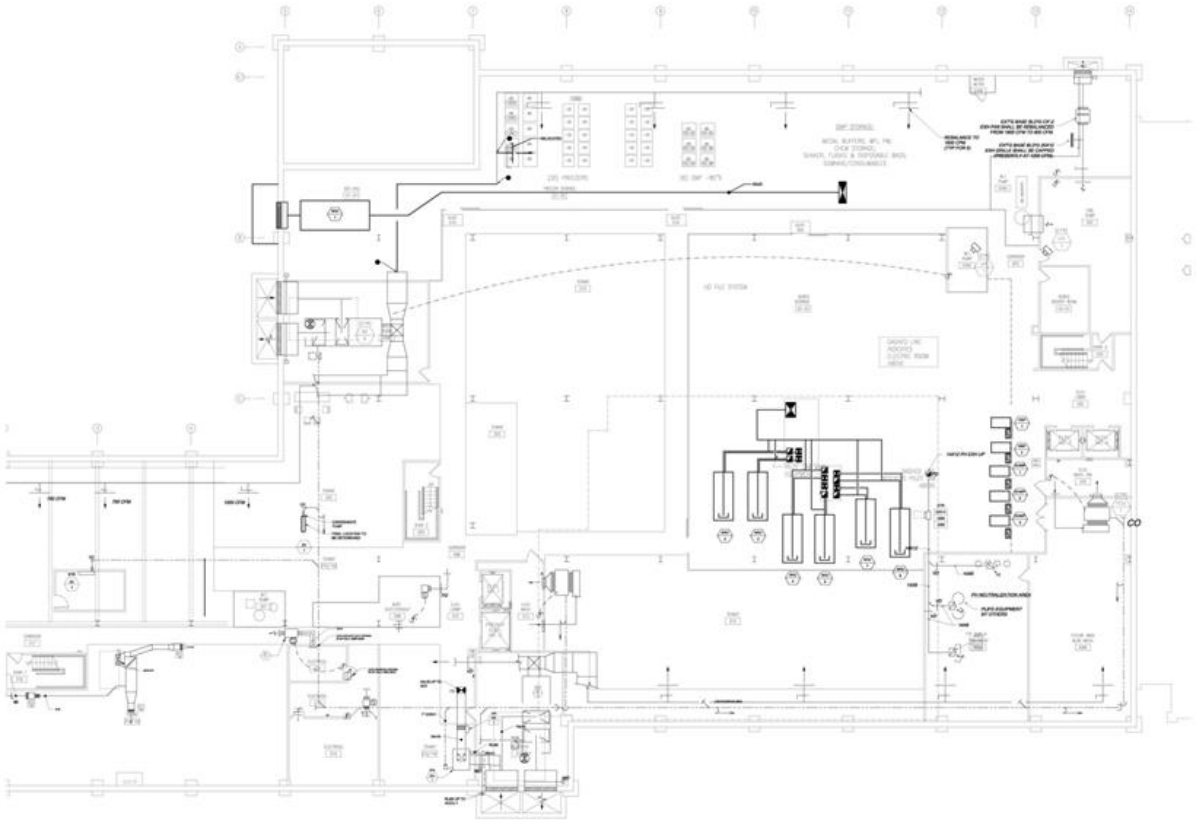
AHA
CONSULTING ENGINEERS

15116.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
HEAT RECOVERY LOOP DIAGRAM

PHASE 2
H-0.14



R.B. DINNEEN
ARCHITECTS &
PLANNERS, INC.

AHA
CONSULTING
ENGINEERS

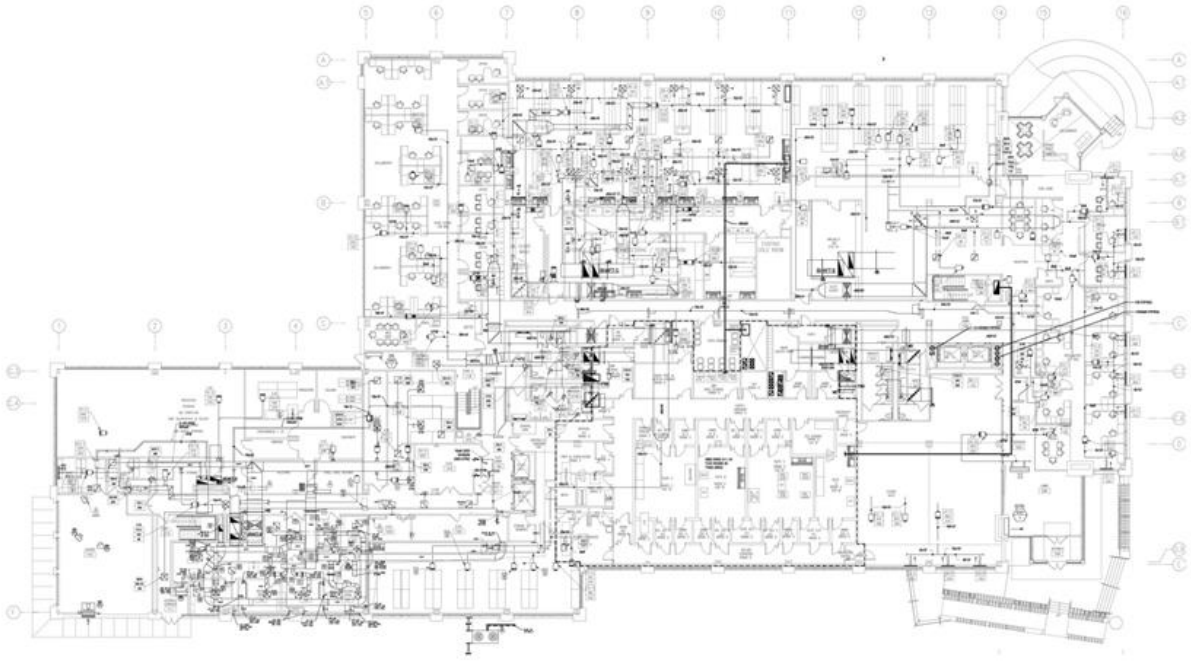
15118.11
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
PILOT LAB
BASEMENT PLANS

PHASE 2

H-1.0



1 HVAC FIRST FLOOR PLAN
SCALE: 3/32" = 1'-0"

R.E. Dinneen
Architects &
Planners, Inc.

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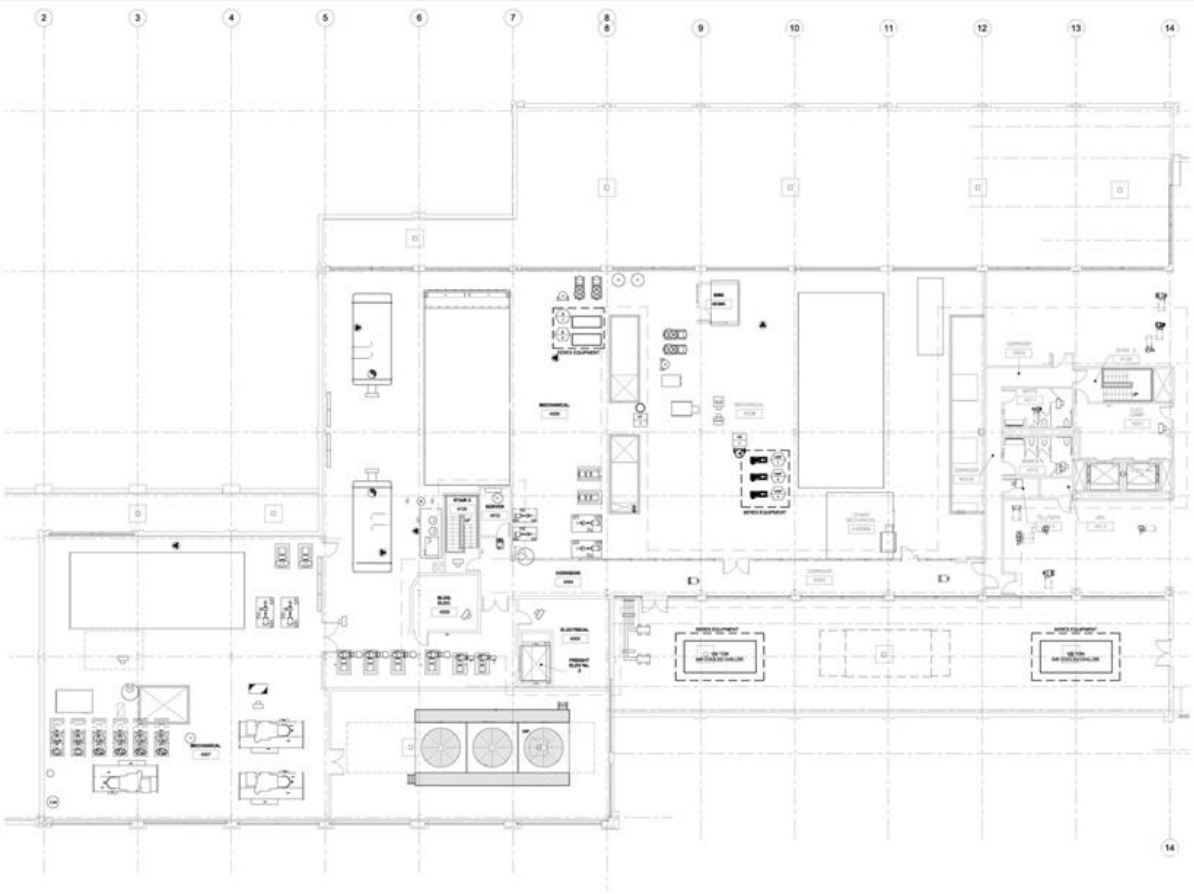
CONSULTING
ENGINEERS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC DUCTWORK
FIRST FLOOR
PLAN

PHASE 2

H-1.1



1 HVAC PENTHOUSE PLAN
SCALE: 1/8" = 1'-0"

R.A. Dennison
Architects &
Planners, Inc.

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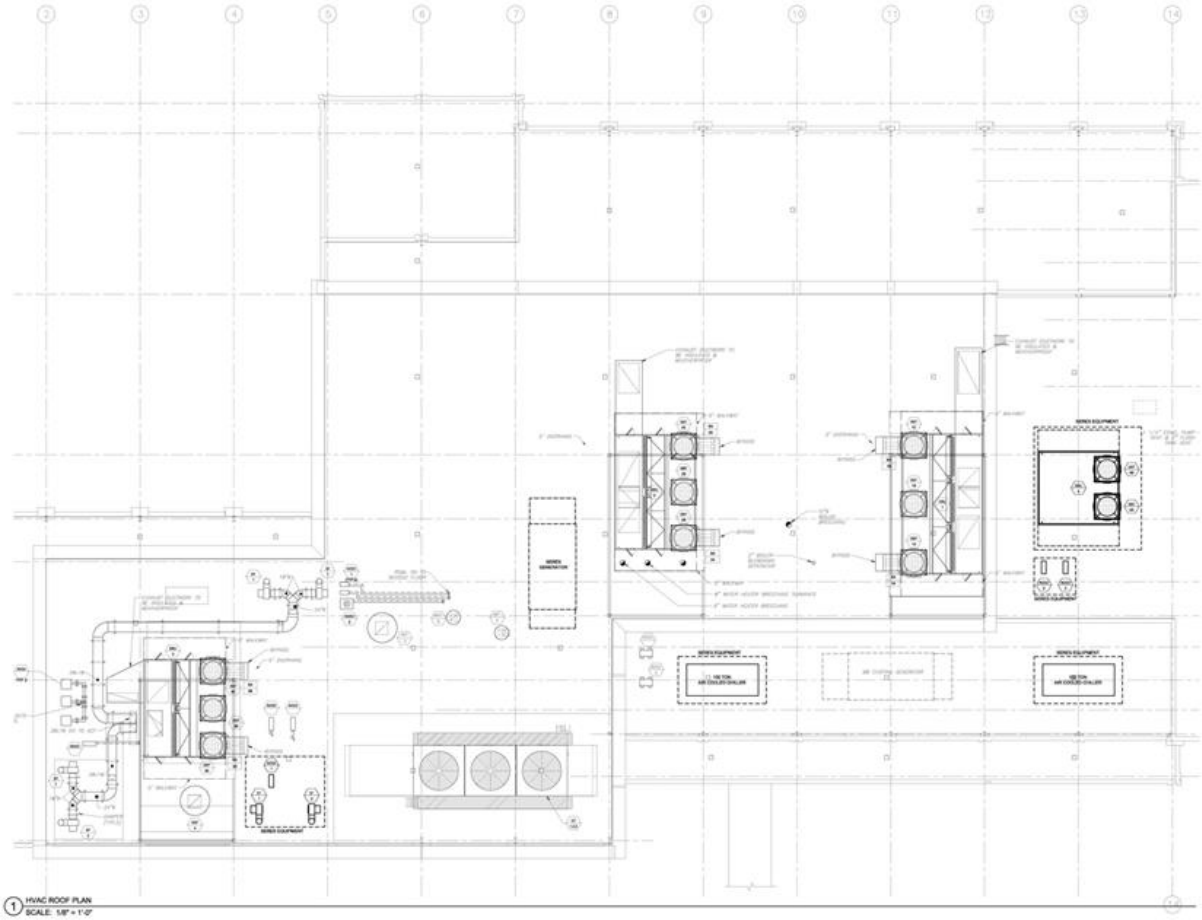
CONSULTING
ENGINEERS

200 SIDNEY STREET
CAMBRIDGE, MA

HVAC
MECHANICAL LEVEL
PLAN

PHASE 2
H-1.4



1 HVAC ROOF PLAN
SCALE: 1/8" = 1'-0"

R.A. DINNEEN
ARCHITECTS &
PLANNERS, INC.

AHA
CONSULTING
ENGINEERS

200 SIDNEY STREET
CAMBRIDGE, MA

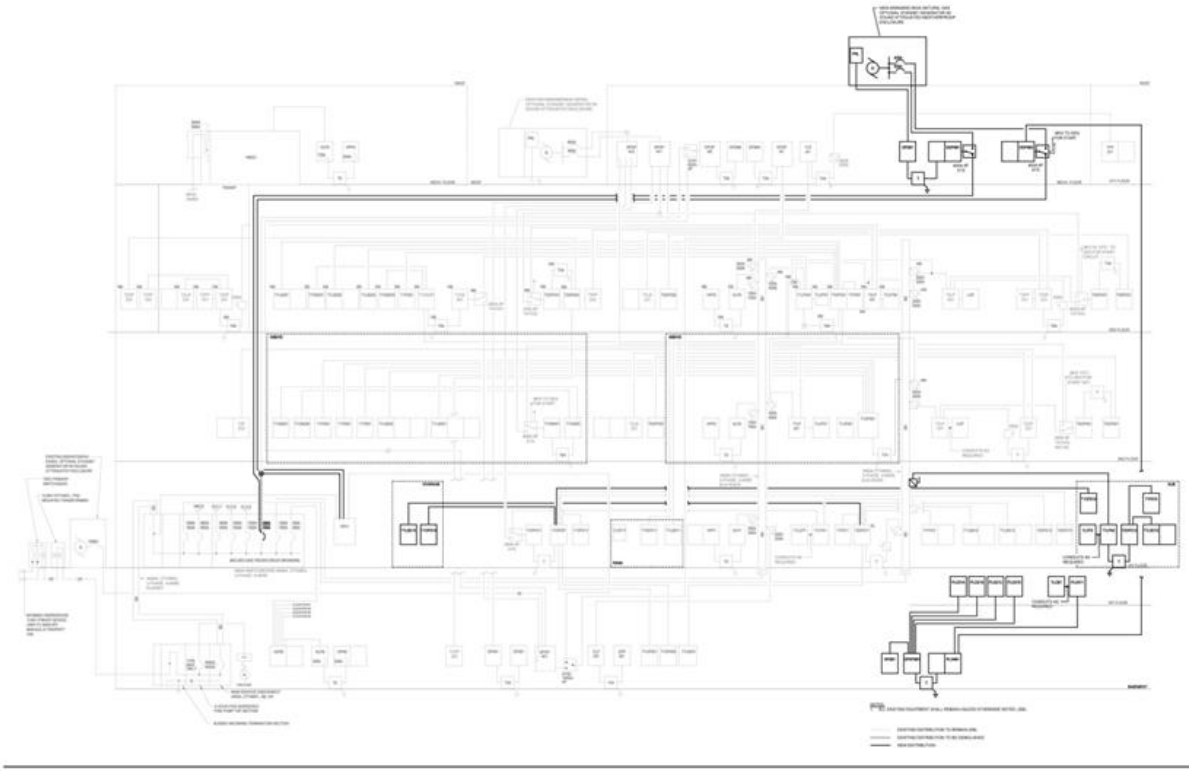
HVAC
ROOF
PLAN

PHASE 2

H-1.5

KEYED NOTES	SHEET NOTES
⊙ ---	1. --

R.A. DINNISH
ARCHITECTS &
PLANNERS, INC.



AHA
CONSULTING
ENGINEERS

No.	Date	Issue
1	11/05/2015	SCHEMATIC DESIGN

TENTH.11
SERIES THERAPEUTICS
TENANT IMPROVEMENTS

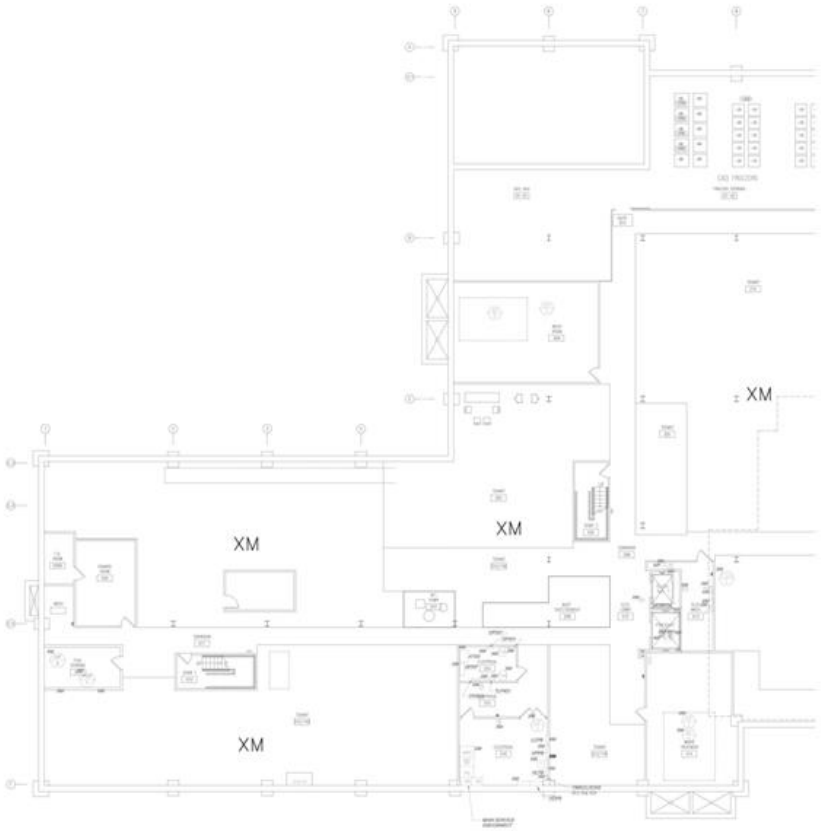
200 SIDNEY STREET
CAMBRIDGE, MA

ELECTRICAL
DEMO WORK
RISER DIAGRAM

ISSUE DATE	03 NOVEMBER 2015
OPENINGS BY	ZDS
DRAWN BY	MTL
CHECKED BY	CJS
SCALE	AS SHOWN

PHASE 2

E-0.2



1 ELECTRICAL BASEMENT PARTIAL POWER PLAN PART A
SCALE: 1/8" = 1'-0"

SHEET NOTES

KEYED NOTES

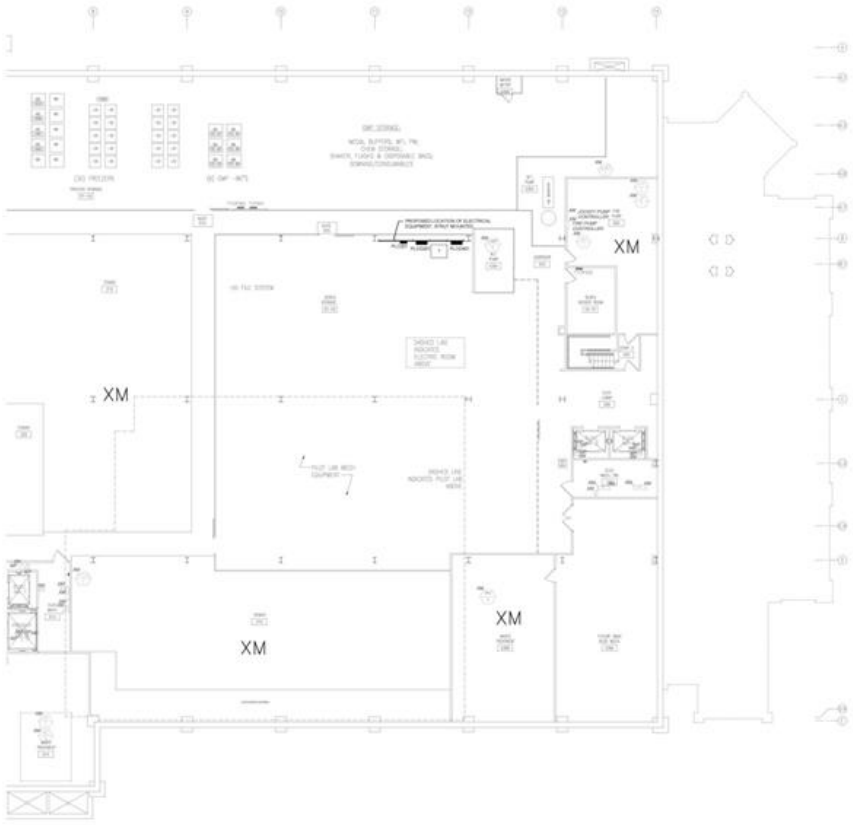
A.A. DiNISIO
ARCHITECTS &
PLANNERS, INC.

AHA
CONSULTING
ENGINEERS

ELECTRICAL
BASEMENT
LIGHTING PLAN

PHASE 2

E-2.0A



1 ELECTRICAL BASEMENT PARTIAL POWER PLAN PART B
SCALE: 1/8" = 1'-0"

SHEET NOTES

KEYED NOTES

n.s. Dennish
Architects &
Planners, inc.

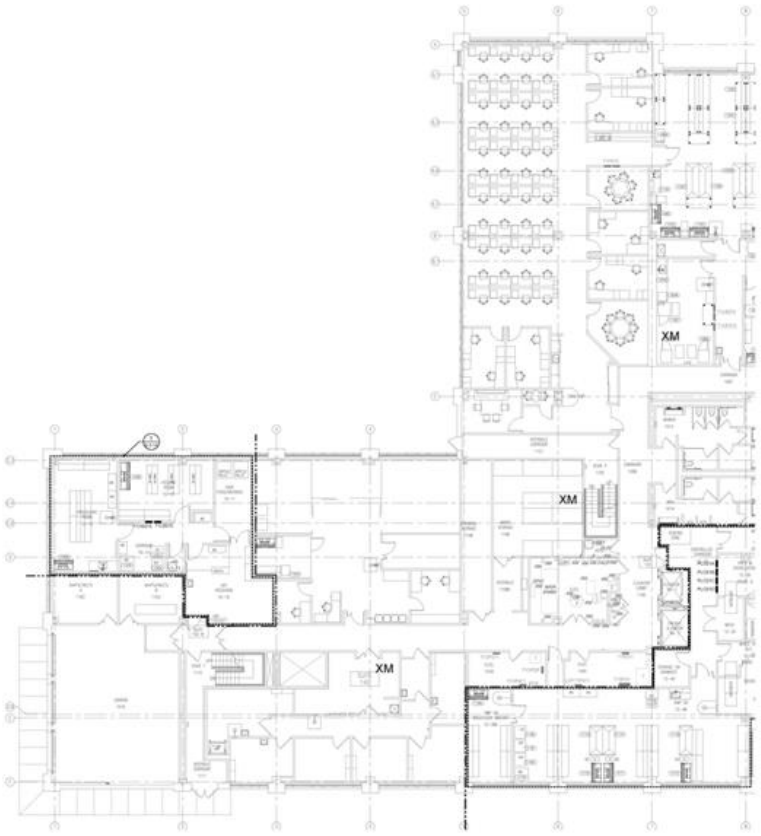
AHA
Consulting Engineers

SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

ELECTRICAL
BASEMENT
LIGHTING PLAN

PHASE 2
E-2.0B



1 ELECTRICAL FIRST FLOOR PARTIAL POWER PLAN PART A
SCALE: 1/8" = 1'-0"

SHEET NOTES

KEYED NOTES

A.A. DIMEEO
ARCHITECTS &
PLANNERS, INC

AHA
CONSULTING
ENGINEERS

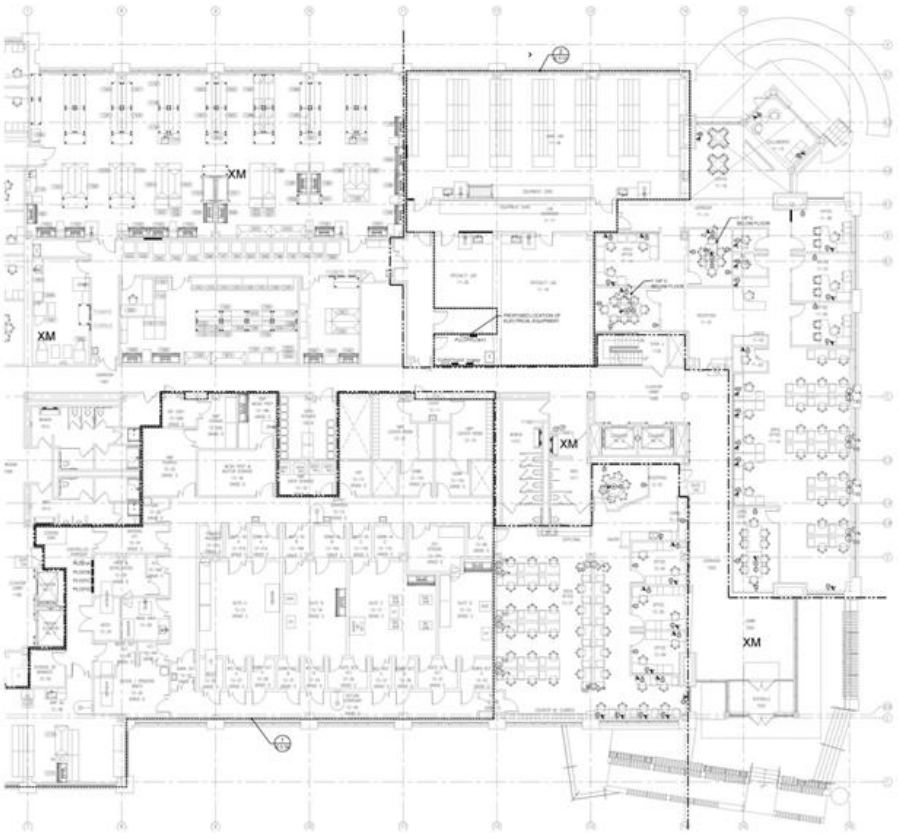
SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

ELECTRICAL
FIRST FLOOR
PARTIAL POWER
PLAN PART A

PHASE 2

E-2.1A



1 ELECTRICAL FIRST FLOOR PARTIAL POWER PLAN PART B
SCALE: 1/8" = 1'-0"

SHEET NOTES

KEYED NOTES

A.A. DINKIAN
ARCHITECTS &
PLANNERS, INC.

AHA
CONSULTING
ENGINEERS

TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

ELECTRICAL
FIRST FLOOR
PARTIAL POWER
PLAN PART 'B'

PHASE 2

E-2.1B

1 ELECTRICAL FIRST FLOOR PARTIAL POWER PLAN PART A
SCALE: 1/8" = 1'-0"

SHEET NOTES

KEYED NOTES

R.A. DiNISIO
ARCHITECTS &
PLANNERS, INC.

AHA
CONSULTING
ENGINEERS

NO.	DATE	ISSUED
1	11/05/2015	ECONOMIC BOOM

SERES THERAPEUTICS
TENANT IMPROVEMENTS

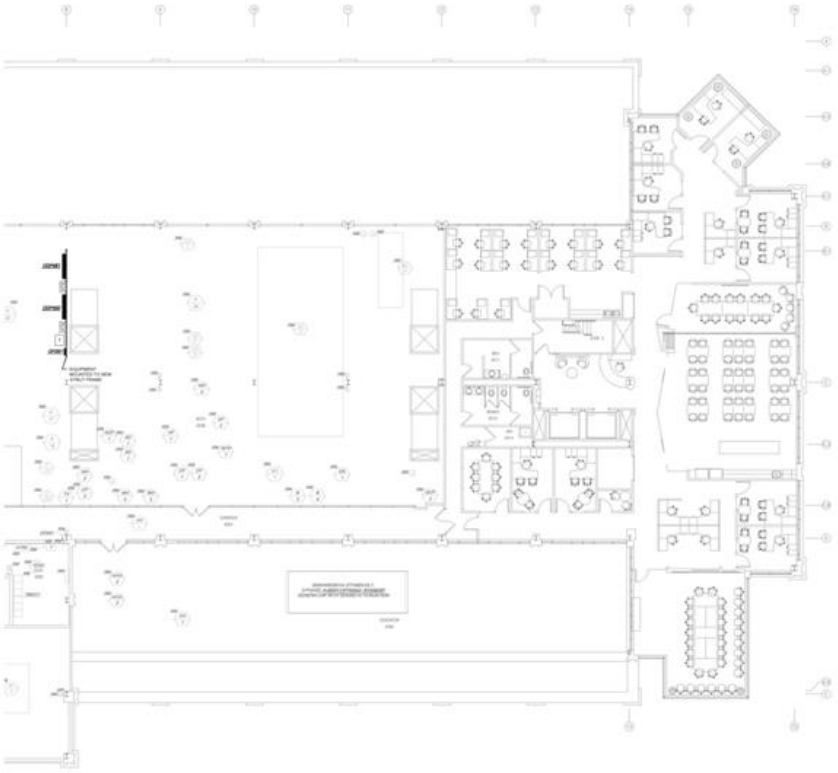
200 SIDNEY STREET
CAMBRIDGE, MA

ELECTRICAL
FOURTH FLOOR
PARTIAL POWER
PLAN PART A

ISSUE DATE	02 NOVEMBER 2015
APPROVED BY	DDS
CHECKED BY	MTL
DRAWN BY	TS
SCALE	AS NOTED

PHASE 2

E-2.4A



1 ELECTRICAL FIRST FLOOR PARTIAL POWER PLAN PART B
SCALE: 1/8" = 1'-0"

SHEET NOTES

1 -

KEYED NOTES

○ 1

R.A. DAWSON
ARCHITECTS &
PLANNERS, INC.

AHA
CONSULTING
ENGINEERS

No.	BY	Notes
1		11/26/2019 ADDENDUM 1

SERES THERAPEUTICS
TENANT IMPROVEMENTS

200 SIDNEY STREET
CAMBRIDGE, MA

ELECTRICAL
FOURTH FLOOR
PARTIAL POWER
PLAN PART B

PHASE 2

E-2.4B

EXHIBIT B-2

LANDLORD'S WORK

200 Sidney – Common Area Improvements

- Modifications to existing Sidney Street vestibule to create useable two story space with linear heating elements at glazing, new exit door, new storefront and glass film
- Renovations of existing base building entrance to create more direct access along with new exterior lighting and hardscaping at entry door
- New finishes including flooring, lights, audiovisual panel and entry desk at building common entry located on Erie Street
- Renovations to existing building common hallway, loading and elevator cabs with new flooring, ceiling and lighting
- Installaion of two building common shower rooms to support pedestrian commuters
- At least one set of restrooms on floors one (1) and three (3) to be in good working order
- Restroom and elevator lobby on floor four (4) to be substantially complete consistent with other restrooms and elevator lobbies in the Building
- Updated Exterior hardscaping along Erie Street including new exterior base building monument sign (To be completed by Rent Commencement Date)
- Landscaping along the alley on Erie Street to provide informal exterior gathering space (To be completed by Rent Commencement Date)

EXHIBIT B-3-a

BUDGET FOR LAB/OFFICE IMPROVEMENTS

[SEE ATTACHED]

BioMed Realty Trust

200 Sidney Street Redevelopment

200 Sidney Street - Seres Development Budget				83,396	rsf	11/11/2015
PROGRAM	**RENTABLE SF**		**HARD COST**			
Lab + Office	70,133		$10,432,768	$148.76	/ sf	*TRG Estimate 10/30/15*
Animal Care Facility (ACF)	1,890		$774,859	$409.98	/ sf	*TRG Estimate 10/30/15*
TOTAL LAB + OFFICE AREA	72,023		$11,207,627	$155.61	/ sf	
TOTAL MANUFACTURING AREA	11,373		$10,734,299	$943.84	/ sf	*TRG Estimate 10/30/15*
TOTAL	**83,396**		**$21,941,926**	**$263.11**	**/ sf**	
HARD COSTS						
Construction - Phase 1+2 Lab + Office Area			$11,207,627	$155.61	/ sf *	*TRG Estimate 10/30/15*
Construction - Phase 2 (Manufacturing Area + QC Lab)			$10,734,299	$943.84	/ sf **	*TRG Estimate 10/30/15*
Metering			$41,698	$0.50	/ sf	*Allowance*
Hard Cost Contingency		1.7%	$375,000	$4.50	/ sf	
SUB-TOTAL - HARD COST			**$22,358,624**	**$268.10**	**/ sf**	
SOFT COSTS						
Design Fees - Phase 1+2 Lab + Office Area			$735,732	$8.82	/ sf ***	*Dineen Proposal 11/3/15*
Design Reimbursables		4.1%	$29,800	$0.36	/ sf	*Dineen Proposal 11/3/15*
Design Fees - Phase 2			$250,000	$3.00	/ sf	*Allowance*
Design Reimbursables		4.0%	$10,000	$0.12	/ sf	*Allowance*
Soft Cost Contingency		5.0%	$51,276.60	$0.61	/ sf	
SUB-TOTAL - SOFT COST			**$1,076,809**	**$12.91**	**/ sf**	
BioMed Development Fee		0.5%	$125,000	$1.50	/ sf	*Fixed Fee*
TOTAL - SOFT COSTS			**$1,201,809**	**$14.41**	**/ sf**	
TOTAL			**$23,560,433**	**$282.51**	**/ sf**	
TENANT IMPROVEMENT ALLOWANCE			**$12,509,400**	**$150.00**	**/ sf**	
EXCESS TENANT IMPROVEMENT			**$11,051,033**	**$132.51**	**/ sf**	

* $/sf based upon 72,023 rsf (Includes all Phase 1 and Phase 2 Areas with exception of Phase 2 Manufacturing Area)
** $/sf based upon 11,373 rsf (Phase 2 Manufacturing Area includes QC Lab and Gowning Rooms)
*** Fee is Inclusive of $50k in Indemnification Fees

Seres Therapeutics
200 Sidney Street
Cambridge, MA

10/30/2015

Project Summary Sheet For Office, Lab and ACF

Description	Budget
Office / Lab Budget Dated 10.30.15	**$10,432,768**
ACF Budget Budget Dated 10.30.15	**$774,859**
Total Project Cost For Office, Lab & ACF	**$11,207,627**

Project Alternates

A) Provide Dirt Walls instead of Butt Glazing at 4th Floor	$	78,000

Project Clarifications

1) Tel/Data & AV system and distribution by Seres
2) Card Reader system and distribution by Seres
3) Security Sytem and distribution by Seres
3) Laboratory Equipment including rigging into place by Seres
4) Kitchen Appliances not included
5) Equipment alarms system or distribution not included
6) supply and install Furniture not included
7) Signage not included
8) Any fabric or millwork walls not included
9) 2nd floor humidity is not included
10) Server racks by Seres
11) New window treatments not included. We have included modification of existing to accomidiate layout
12) Dirtt wall systems not included
13) Dryroom at sampling carried in Pilot Lab Budget
14) Moving Existing owner equipment from existing facility to new location not included
15) Renovations of restrooms not included in this budget
16) ACF alarm monitoring or watering system not included

RICHMOND

Seres Therapeutics
200 Sidney Street **10/30/2015**
Cambridge, MA **RSF 70328**
Lab and Office Budget

Description	Budget	Total RSF Cost	
Demolition/Temporary Protection/Daily Cleaning	**$288,920**	**$4.11**	
Concrete	**$22,300**	**$0.32**	
Structural Steel/Misc Metals	**$16,000**	**$0.23**	
Carpentry	**$138,485**	**$1.97**	
Millwork	**$178,790**	**$2.54**	
Roofing/Thermal Moisture Protection	**$53,000**	**$0.75**	
Doors/Frames/Hardware	**$185,180**	**$2.63**	
Glazing	**$191,496**	**$2.72**	
Gypsum Drywall	**$684,704**	**$9.74**	
Ceilings	**$226,484**	**$3.22**	
Flooring	**$243,583**	**$3.46**	
Painting	**$85,215**	**$1.21**	
Specialties	**$219,200**	**$3.12**	
Laboratory Casework	**$558,522**	**$7.94**	
Equipment	**$0**	**$0.00**	
Fire Protection	**$198,000**	**$2.82**	
Plumbing	**$716,400**	**$10.19**	
HVAC	**$2,723,031**	**$38.72**	
Electrical/Fire Alarm	**$1,974,856**	**$28.08**	
General Requirements	**$75,330**	**$1.07**	
General Conditions	**$71,540**	**$1.02**	
Supervision	**$525,680**	**$7.47**	
Engineering	**$0**	**$0.00**	
Insurance and Permits	**$234,418**	**$3.33**	
Contingency	**$468,836**	**$6.67**	
Overhead and Profit	**$352,799**	**$5.02**	
Office & Lab	**$10,432,768**	**$148.34**	70,328 RSF

Seres Therapeutics
200 Sidney Street
Cambridge, MA

10/30/2015

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Demolition/Temporary Protection/Daily Cleaning					
Demolition					
Select demo labs	16,245	sf	8	129,960	
Dumpsters	30	ea	750	22,500	
Temporary Protection					
Floor protection	85	shts	55	4,675	
Protect existing windows and sills.	45	ea	273	12,285	
Dust protection material	1	ls	14,000	14,000	
Protection of existing finishes	1	ls	8,000	8,000	
Daily cleaning	100	days	975	97,500	
					$288,920
Concrete					
Coring for mechanical systems & tel/data	1	ls	8,000	8,000	
Conference room floor boxes	5 ea		2,200	11,000	
Patch floors at floor drains	12 ea		275	3,300	
					$22,300
Structural Steel/Misc Metals					
Support for the operable partitions	1	ls	16,000	16,000	
					$16,000
Carpentry					
Door and hardware installation	116	ea	445	51,620	
General carpentry	50	days	874	43,700	
Carpentry material	50	days	280	14,000	
Interior blocking	2,295	lf	7	16,065	
Barricades/safety	18	wks	200	3,600	
Install specialties	1	ls	9500	9,500	
					$138,485
Millwork					
Coffee Bar Cabinetry	36	lf	895	32,220	
Cafe Cabinetry, uppers and lowers with solid surface top	52	lf	950	49,400	
Cafe Island	22	lf	985	21,670	
Copy area millwork	70	lf	650	45,500	
Closet shelving and hangers	1	ls	10,000	10,000	
Reception desks allowance	1	ea	20,000	20,000	
Custom Signage				NIC	
					$178,790
Roofing/Thermal Moisture Protection					
Roof protection	1	ls	5,000	5,000	
Roof safety Garlock rental	4	mnths	1,500	6,000	
Roofing for duct & pipe flashing	1	ls	9,000	9,000	
Interior sealants	1	ls	10,000	10,000	
Fireproofing	1	ls	15,000	15,000	
Firestopping	1	ls	8,000	8,000	
					$53,000

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Doors/Frames/Hardware					
Office doors wood	74	ea	1,495	110,630	
HM doors at labs	42	ea	1,775	74,550	
Card readers				NIC	
					$185,180
Glazing					
Butt Glazing	2,798	sf	52	145,496	
Glass doors entrances & Fouth Floor	6	ea	3,000	18,000	
Glass sliding doors (4th floor)	2	ea	5,000	10,000	
Vision kits for doors	60	ea	200	12,000	
Graphics on Glass (Allowance)	1	ls	6,000	6,000	
					$191,496
Gypsum Drywall					
GWB Walls	3,417	lf	128	437,376	
Perimeter walls	1,045	lf	115	120,175	
Soffits	4,279	sf	7	29,953	
Column enclosures	45	ea	960	43,200	
GWB header for glazing	400	lf	115	46,000	
FRP on wet walls	1	ls	8,000	8,000	
					$684,704
Ceilings					
ACT 1 Office Standard	24,795	sf	4.75	117,776	
ACT 2 Lab Standard	17,100	sf	4.95	84,645	
ACT 3 Vinyl Faced	2,750	sf	8.75	24,063	
					$226,484
Flooring					
Carpet Tile	2,697	sy	40	107,880	
VCT	16,975	sf	2.95	50,076	
Solid Vinyl Wood Plank	2,857	sf	9.95	28,427	
Johnsonite 4" vinyl cove base	7,195	lf	2.50	17,988	
Sheet vinyl	97	sy	96	9,312	
Epoxy flooring at glasswash room	350	sf	14	4,900	
Floor prep allowance	25,000	sf	1	25,000	
					$243,583
Painting					
Walls					
Latex paint	69,975	sf	0.98	68,576	
Touch up painting	1	ls	7,500	7,500	
GWB Ceilings/Soffits	4,279	sf	1.39	5,948	
Door and frames					
Doors/frames	42	ea	76	3,192	
					$85,215

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Specialties					
Fire extinguishers and cabinets	14	ea	675	9,450	
Corner guards	25	ea	275	6,875	
Lab coat hooks	4	ea	750	3,000	
Bumper guards - two line plastic	300	lf	85	25,500	
Hufcor Operable Partition with Marker Boards & glass panels	32	lf	2,225	71,200	
Mesh Partitions	475	lf	117	55,575	
Glass marker boards - conference/board rooms	14	ea	750	10,500	
White boards at private offices	38	ea	450	17,100	
Wall mounted dispensers (Allowance)	1	ls	20,000	20,000	
Window treatments				NIC	
Metro Shelving				NIC	
Signage				NIC	
					$219,200
Laboratory Casework					
Mobile benches Anaerobic Table 36 x 96	9	ea	3,636	32,724	
Mobile benches Anaerobic Table 36 x 72	8	ea	2,800	22,400	
Lab Bench 30 x 72	67	ea	3,324	222,708	
Lab Bench 30 x 96	10	ea	3,724	37,240	
End of Lab Bench 30 x 60	12	ea	3,175	38,100	
End of Benck 30 x 72	6	ea	3,375	20,250	
Fixed Wall Benches	225	lf	575	129,375	
Shelving	50	lf	180	9,000	
Utility Panels	48	ea	350	16,800	
Recommission existing cold room	1	ea	18,000	18,000	
Relocate & refurbish existng Fumehoods	3	ea	3,975	11,925	
Anaerobic chambers				NIC	
Pilot Plant tables/benches/carts				NIC	
Flammable Safety Cabinets				NIC	
SS sinks- In plumbing price					
					$558,522
Equipment					
Biosafety cabinets				NIC	
Glasswashers				NIC	
Autoclave				NIC	
Appliances				NIC	
Lab Equipment				NIC	
Fire Protection					
Modify existing systems to serve office and labs	1	ls	198,000	198,000	
					$198,000
Plumbing				716,400	
Utility drops - VAC & Compressed Air				In abv	
C02 Manifold & distribution				In abv	
N2 Manifold & distribution				In abv	
Gases to Fume Hoods				In abv	
RO distribution & drops				In abv	
Emergency eyewash distribution and stations				In abv	
Potable and non-potable water distribution				In abv	
Utility piping & connections to equipment				In abv	
Sink assemblies				In abv	
Lab waste & vent piping				In abv	
Floor drains				In abv	
					$716,400

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
HVAC					
Demolition				$20,000	
Phoenix Valves				$85,000	
VAV				$27,000	
Piping				$325,350	
Sheet metal				$1,000,000	
AC Unit				$4,500	
Insulation				$320,000	
HW Coils				$1,600	
Vibration Isolation				$1,500	
Balancing				$40,000	
Controls				$473,740	
Coordination Drawings & HVAC direct costs				$419,341	
Rigging				$5,000	
					$2,723,031
Electrical and Fire Alarm					
Demolition/make safe				56,304	
Feeders & Power				336,792	
Distribution				304,960	
Lighting and controls				1,017,180	
Fire alarm				119,820	
HVAC wiring				106,800	
Permits and other direct costs				33,000	
					$1,974,856
General Requirements					
Parking	5	mnths	950	4,750	
Police details	8	ea	385	3,080	
Replace plumbing and electrical utilities at fire rated plenums	1	alw	22,000	22,000	
Removal of glass panels for loading zones	1	alw	4,000	4,000	
Adjusting/modifying existing shades per new layout	1	ls	12,000	12,000	
Allowance for MEP distribution in occupied spaces	1	alw	15,000	15,000	
Signage for occupancy	1	ls	2,500	2,500	
Allowance for rigging equipment	1	alw	12,000	12,000	
					$75,330
General Conditions					
Safety/third party inspection	18	wks	250	4,500	
Consumables	1	ea	12,000	12,000	
Field operation expenses	18	wks	780	14,040	
Field Office	1	ls	8,500	8,500	
Final cleaning	44,000	sf	0.65	28,600	
Sanitary facilities	4	mnths	975	3,900	
					$71,540
Supervision					
Project Executive (2 days/week)	48	days	1,240	59,520	
Project Manager	24	wks	4,400	105,600	
Assistant Project Manager	24	wks	3,000	72,000	
Project Superintendent	24	wks	4,200	100,800	
Assistant Superintendent	24	wks	3,000	72,000	
Planner (2 days/week)	12	wks	1,920	23,040	
MEP Coordinator	6	wks	4,200	25,200	
Field Operations Manager	4	wks	4,800	19,200	
Estimator	4	wks	5,600	22,400	
Project Administrative Assistant	24	days	480	11,520	
Project Accountant	24	days	600	14,400	
					$525,680

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Engineering					
Architectural				NIC	
Structural				NIC	
MEP				NIC	
Insurance and Permits					
General Liability Insurance	1.00%			93,767	
Building Permits	1.50%			140,651	
					$234,418
Contingency	5.00%			468,836	
					$468,836
Overhead and Profit	3.50%				**$352,799**
Total Budget					**$10,432,768**

Note - See Office, Lab and ACF Summary Sheet for Alternates and Clarifications

Seres Therapeutics
200 Sidney Street **10/30/2015**
Cambridge, MA **RSF 1890**
ACF Budget

Description	Budget
Demolition/Temporary Protection/Daily Cleaning	**$29,840**
Concrete	**$6,850**
Structural Steel/Misc Metals	**$32,000**
Carpentry	**$14,002**
Millwork	**$0**
Roofing/Thermal Moisture Protection	**$13,000**
Doors/Frames/Hardware	**$12,870**
Glazing	**$1,200**
Gypsum Drywall	**$67,170**
Ceilings	**$10,063**
Flooring	**$28,500**
Painting	**$10,778**
Specialties	**$7,725**
Laboratory Casework	**$34,550**
Equipment	**$0**
Fire Protection	**$20,930**
Plumbing	**$83,280**
HVAC	**$266,000**
Electrical/Fire Alarm	**$57,668**
General Requirements	**$0**
General Conditions	**$0**
Supervision	**$0**
Engineering	**$0**
Insurance and Permits	**$17,411**
Contingency	**$34,821**
Overhead and Profit	**$26,203**
	$774,859
Cost/SF:	**$409.98**

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Seres Therapeutics
200 Sidney Street
Cambridge, MA

10/30/2015

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Demolition/Temporary Protection/Daily Cleaning					
Demolition					
Select demo	1,500	sf	3.00	4,500	
Dumpsters	5	ea	750	3,750	
Temporary Protection					
Floor protection	20	shts	55	1,100	
Protect existing windows and sills.	5	ea	273	1,365	
Dust protection material	1	ls	3,000	3,000	
Protection of existing finishes	1	ls	1,500	1,500	
Daily cleaning	15	days	975	14,625	
					$29,840
Concrete					
Coring for mechanical systems & tel/data	1	ls	1,250	1,250	
Patch floors at floor drains	4	ea	275	1,100	
Masonry opening for backup unit	1	ls	4,500	4,500	
					$6,850
Structural Steel/Misc Metals					
Secondary AHUs steel support	1	ls	18,000	18,000	
Exhaust shaft & roof opening support	1	ls	14,000	14,000	
Screen wall				NIC	
					$32,000
Carpentry					
Door and hardware installation	6	ea	445	2,670	
General carpentry	8	days	874	6,992	
Carpentry material	8	days	280	2,240	
Interior blocking	300	lf	7	2,100	
					$14,002
Millwork				NIC	
Roofing/Thermal Moisture Protection					
Roofing for duct & pipe flashing	1	ls	6,000	6,000	
Interior sealants	1	ls	4,500	4,500	
Fisreproofing	1	ls	1,500	1,500	
Firestopping	1	ls	1,000	1,000	
					$13,000
Doors/Frames/Hardware					
Seamless HM ACF	6	ea	2,145	12,870	
Card readers				NIC	
					$12,870
Glazing					
Vision kits for doors	6	ea	200	12,870	
Graphics on Glass				NIC	
					$1,200

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Gypsum Drywall					
ACF Walls	350	lf	150	52,500	
GWB ceiling ceilings	350	sf	20	7,000	
Perimeter walls	50	lf	115	5,750	
Column enclosures	2	ea	960	1,920	
					$67,170
ACT 3 Vinyl Faced	1,150	sf	8.75	10,063	
					$10,063
Flooring					
Epoxy Flooring	1,500	sf	16	24,000	
Floor prep allowance	1,500	sf	3	4,500	
					$28,500
Painting					
Walls	7,250	sf	1.35	9,788	
Epoxy Paint - ACF					
Door and frames					
Doors	6	ea	89	534	
Frames	6	ea	76	456	
					$10,778
Specialties					
Fire extinguishers and cabinets	2	ea	675	1,350	
Corner guards	5	ea	275	1,375	
Lab coat hooks	1	ea	750	750	
Bumper guards - two line plastic	50	lf	85	4,250	
Gowning accessories				NIC	
Window treatments				NIC	
Mesh Partitions				NIC	
Metro Shelving				NIC	
Signage				NIC	
					$7,725
Laboratory Casework					
Mobile workstations	6	ea	3,800	22,800	
SS Tables in the ACF	4	ea	2,500	10,000	
Utility Panels	5	ea	350	1,750	
Pilot Plant tables/benches/carts				NIC	
Flammable Safety Cabinets				NIC	
SS sinks- In plumbing price					
					$34,550
Equipment					
Biosafety cabinets				NIC	
Glasswashers				NIC	
Autoclave				NIC	
Appliances				NIC	
Lab Equipment				NIC	
Fire Protection					
Modify existing systems to serve the ACF	1	ls	20,930	20,930	
					$20,930
Plumbing				83,280	
Lab sink with RO				In abv	
SS sink				In abv	
Mop receptor				In abv	

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Vac & O2 to BSCs				In abv	
CO2 outlets				In abv	
Emergency shower/eyewash				In abv	
O2 Manifold				In abv	
CO2 Manifold				In abv	
Floor drain with trap primer				In abv	
					$83,280
HVAC					
Phoenix Valves				$10,000	
HEPAs				$8,000	
Humidifiers				$35,000	
Piping				$33,000	
Sheet metal				$45,000	
Insulation				$15,000	
Vibration Isolation				$2,000	
Balancing				$5,000	
Controls				$113,000	
					$266,000
Electrical and Fire Alarm					
Demolition/make safe				2,000	
Feeders & Power				10,000	
Distribution				10,000	
Lighting and controls				17,668	
Devices				2,000	
Fire alarm				7,000	
HVAC wiring				9,000	
					$57,668
General Requirements					
GRs carried under the Pilot Plant Project/Budget					
General Requirements					
GCs carried under the Pilot Plant Project/Budget					
Supervision					
Supervision carried under the Pilot Plant Project/Budget					
Engineering					
Architectural				NIC	
Structural				NIC	
MEP				NIC	
Insurance and Permits					
General Liability Insurance	1.00%			6,964	
Building Permits	1.50%			10,446	
					$17,411
Contingency	5.00%			34,821	
					$34,821
Overhead and Profit	3.50%				
					$26,203
Total Budget					**$774,859**

EXHIBIT B-3-b

BUDGET FOR MANUFACTURING AREA IMPROVEMENTS

[SEE ATTACHED]

Seres Therapeutics
200 Sidney Street **10/30/2015**
Cambridge, MA **RSF 11177**
Preliminary Manufacturing Area Budget

Description	Budget
Demolition/Temporary Protection/Daily Cleaning	**$173,790**
Concrete	**$154,250**
Structural Steel/Misc Metals	**$444,000**
Carpentry	**$142,465**
Millwork	**$0**
Roofing/Thermal Moisture Protection	**$176,450**
Doors/Frames/Hardware	**$195,500**
Glazing	**$89,500**
Gypsum Drywall	**$461,600**
Ceilings	**$79,800**
Flooring	**$251,400**
Painting	**$92,345**
Specialties	**$148,075**
Laboratory Casework	**$0**
Equipment	**$150,000**
Fire Protection	**$150,000**
Plumbing	**$833,400**
HVAC	**$4,242,096**
Electrical/Fire Alarm	**$828,545**
General Requirements	**$71,280**
General Conditions	**$78,960**
Supervision	**$455,480**
Engineering	**$0**
Insurance and Permits	**$230,473**
Contingency	**$921,894**
Overhead and Profit	**$362,996**
	$10,734,299
Cost/SF:	**$960.39**

Exclusions:

* Process utilities
* Moving existing owner equipment to the new facility
* Tel/Data & AV
* Card Readers
* Security
* Signage
* Laboratory & Clean Room Equipment
* Equipment alarms
* UPS
* Validation
* SS piping or SS ductwork

* Clad Walls
* SS doors
* Sitework in area way
* USP Water Skid
* Clad Walls / Ceiling / Kydex
* Future MEP Utility capacity for Pilot Expansion

Clarification:

This budget is based on steam generator, boilers and pumps being installed at the penthouse

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Seres Therapeutics
200 Sidney Street
Cambridge, MA

10/30/2015

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Demolition/Temporary Protection/Daily Cleaning					
Demolition					
Select demo	8,700	sf	1.95	16,965	
Dumpsters	15	ea	750	11,250	
Temporary Protection					
Floor protection	50	shts	55	2,750	
Protect existing windows and sills.	25	ea	273	6,825	
Dust protection material	1	ls	14,000	14,000	
Protection of existing finishes	1	ls	5,000	5,000	
Daily cleaning	120	days	975	117,000	
					$173,790
Concrete					
Coring for mechanical systems & tel/data	1	ls	8,000	8,000	
Concrete sawcutting & trenching	350	lf	125	43,750	
Concrete slab openings for shafts	1	ls	65,000	65,000	
Equipment pads	1	ls	22,000	22,000	
Patch floors at floor drains	20	ea	275	5,500	
Create a floor opening to allow basement mechanical deliveries	1	ls	10,000	10,000	
					$154,250
Structural Steel/Misc Metals					
Roof top dunnage for units	2	ea	117,000	234,000	
Steel reinforcement for mechanical units	1	ls	80,000	80,000	
Steel shaft & floor reinforcement	1	ls	95,000	95,000	
Secondary AHUs steel support	1	ls	35,000	35,000	
Screen walls				NIC	
Carpentry					**$444,000**
Door and hardware installation	68	ea	750	51,000	
General carpentry	50	days	874	43,700	
Carpentry material	50	days	280	14,000	
Interior blocking	2,995	lf	7	20,965	
Barricades/safety	24	wks	200	4,800	
Install specialties	1	ls	8000	8,000	
					$142,465
Millwork					
Signage				NIC	
Roofing/Thermal Moisture Protection					
Roofing for steel dunnage	18	days	1,150	20,700	
Roofing for duct & pipe flashing	25	days	1,150	28,750	
Interior sealants	20	days	2,350	47,000	
Fireproofing	1	ls	55,000	55,000	
Firestopping	1	ls	25,000	25,000	
					$176,450

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Doors/Frames/Hardware					
Seamless (Painted) HM doors	68	ea	2,875	195,500	
Stainlees Teel Doors				NIC	
Card readers				NIC	
					$195,500
Glazing					
Power plant viewing windows	12	ea	6,000	72,000	
Vision kits for doors	50	ea	350	17,500	
					$89,500
Gypsum Drywall					
Pilot Plant Walls	1,500	lf	175	262,500	
Perimeter walls	200	lf	115	23,000	
GWB walkable ceilings at the Pilot Plant	3,000	sf	28	84,000	
GWB duct shaft walls	2,500	sf	21	52,500	
Fiberglass grating for walkable ceilings	2,000	sf	15	30,000	
Column enclosures	10	ea	960	9,600	
Clad walls				NIC	
					$461,600
Ceilings					
Clean Room Gasketed Grid System	5,700	sf	14	79,800	
					$79,800
Flooring					
Epoxy Flooring	8,700	sf	18	156,600	
Floor prep allowance	8,700	sf	4	34,800	
Penthouse & basement flooring (Allowance)	1	ls	60,000	60,000	
					$251,400
Painting					
Walls					
Epoxy paint walls	27,700	sf	1.65	45,705	
Epoxy paint ceilings	8,700	sf	1.95	16,965	
Touch up painting	5	days	1,175	5,875	
Doors/Frames	68	ea	350	23,800	
					$92,345
Specialties					
Fire extinguishers and cabinets	5	ea	675	3,375	
Corner guards	18	ea	275	4,950	
Lab coat hooks	5	ea	750	3,750	
Bumper guards - two line plastic	450	lf	85	38,250	
Access panels	10	ea	125	1,250	
Gowning benches	8	ea	1,500	12,000	
Lockers	28	lf	750	21,000	
Pass thrus	3	ea	9,500	28,500	
Glove Boxes/Glass Holders/Hand sanitizers	2	loc	2,500	5,000	
Hand washers / Towel Dispensers	2	ea	5,000	10,000	
Gowning material (Allowance)	1	ls	20,000	20,000	
Mesh Partitions at the basement				NIC	
Gowning accessories				NIC	
Window treatments				NIC	
Metro Shelving				NIC	
Signage				NIC	
					$148,075
Laboratory Casework					

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Fume Hoods				NIC	
Pilot Plant tables/benches/carts				NIC	
SS sinks- In plumbing price					
Equipment					
VHP Unit (Allowance)				150,000	
Biosafety cabinets				NIC	
Glasswashers				NIC	
Autoclave				NIC	
Appliances				NIC	
Lab Equipment				NIC	
					$150,000
Fire Protection					
Complete sprinkler system for the Pilot Lab	1	ls	150,000	150,000	
					$150,000
Plumbing				768,400	
VAC & Compressed Air distribution				In abv	
Hydrogen manifold				In abv	
N2 Manifold				In abv	
LN2 delivery system				In abv	
RO distribution & drops				In abv	
Emergency eyewash distribution and stations				In abv	
Utility piping & connections to equipment				In abv	
Sink assemblies				In abv	
Shower stalls				In abv	
Floor drains				In abv	
RO reject skid				In abv	
SS pipe fittings for VHP distribution into rooms				65,000	
					$833,400
HVAC					
Sheet Metal				1,200,000	
Insulation				170,000	
ATC				755,000	
Balancing				20,000	
Rigging				5,000	
VAV / EXV				195,000	
HW COILS				12,000	
Vibration Isolation				2,500	
Munters Unit				110,000	
Strobic EHU 12k CFM				80,000	
VHP System				30,000	
Commissioning Validation				10,000	
Piping Labor				140,000	
Piping Materials				25,000	
Chillers 150 Tons				185,000	
6 Secondary AHU				80,000	
GMP AHU 22K CFM				288,000	
HEPA Diffusers				30,000	
PERMIT				750	
General Conditions				2,000	
Coordination Drawings				2,500	
HW Pipe for Pilot Plant				86,000	
Dryroom Sampling				220,000	
Steam Boiler				50,000	

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Steam Pipe				75,000	
Supplemental Cooling				25,000	
HW Boiler				70,000	
Pumps				30,000	
Sales Tax				69,594	
OHP at 15%				563,752	
DELETE FUTURE CAPACITY				-315,000	
CONTINGENCY				25,000	
					$4,242,096
Electrical and Fire Alarm					
Demolition/make safe				9,545	
Feeders & Power				65,000	
Distribution				45,000	
Lighting and controls				205,000	
Devices				30,000	
Dedicated 450kw Generator				360,000	
Interlocks				44,000	
Fire alarm				30,000	
HVAC wiring				40,000	
					$828,545
General Requirements					
Parking	6	mnths	950	5,700	
Police details	8	ea	385	3,080	
Allowance for MEP distribution in occupied spaces	1	alw	35,000	35,000	
Signage for occupancy	1	ls	2,500	2,500	
Allowance for rigging equipment	1	alw	25,000	25,000	
					$71,280
General Conditions					
Safety/third party inspection	24	wks	250	6,000	
Consumables	1	ea	15,000	15,000	
Field operation expenses	24	wks	780	18,720	
Final cleaning	8,700	sf	3.95	34,365	
Sanitary facilities	5	mnths	975	4,875	
					$78,960
Supervision					
Project Executive (1 day/week)	21	days	1,240	26,040	
Project Manager (PM carried under the Office/Lab/ACF Project)				NIC	
Assistant Project Manager	24	wks	3,000	72,000	
Assistant Project Manager	24	wks	3,000	72,000	
Project Superintendent	24	wks	4,200	100,800	
Assistant Superintendent	24	wks	3,000	72,000	
Planner (1 day/week)	12	wks	960	11,520	
MEP Coordinator	8	wks	4,200	33,600	
Field Operations Manager	4	wks	4,800	19,200	
Estimator	4	wks	5,600	22,400	
Project Administrative Assistant	24	days	480	11,520	
Project Accountant	24	days	600	14,400	
					$455,480
Engineering					

Division/Description	Qty	UM	Unit $	Line Sum	Div. Sum
Architectural				NIC	
Structural				NIC	
MEP				NIC	
Insurance and Permits					
General Liability Insurance	1.00%			92,189	
Building Permits	1.50%			138,284	
					$230,473
Contingency	10.00%			921,894	
					$921,894
Overhead and Profit	3.50%				
					$362,996
Total Budget					**$10,734,299**

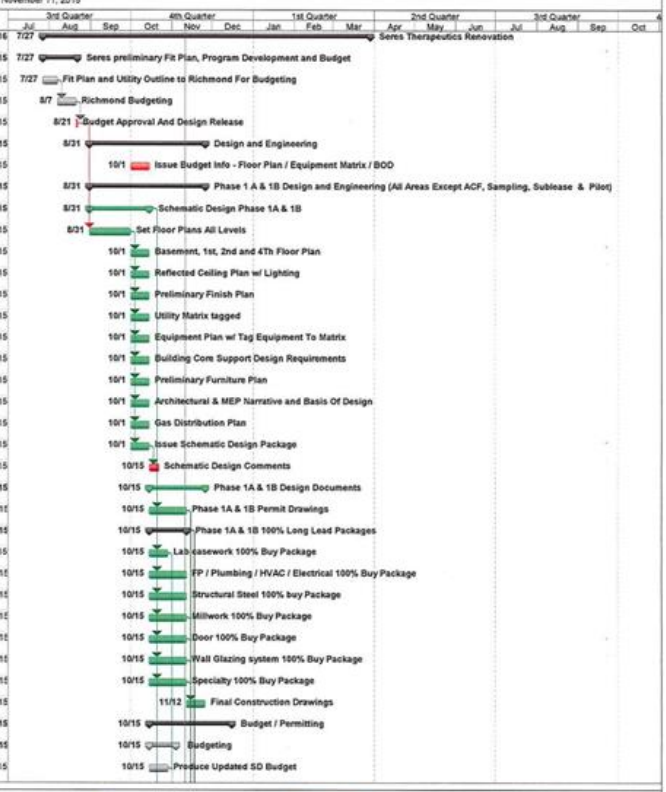
EXHIBIT B-4-a

PHASE 1 SCHEDULE

[SEE ATTACHED]

Preliminary Project Schedule
Seres Therapeutics - Phase 1A & 1B
November 11, 2015

ID	Task Name	Duration	Start	Finish
1	**Seres Therapeutics Renovation**	**176 days**	**Mon 7/27/15**	**Mon 3/28/16**
2	**Seres preliminary Fit Plan, Program Development and Budget**	**20 days**	**Mon 7/27/15**	**Fri 8/21/15**
3	Fit Plan and Utility Outline to Richmond For Budgeting	9 days	Mon 7/27/15	Thu 8/6/15
4	Richmond Budgeting	10 days	Fri 8/7/15	Thu 8/20/15
5	Budget Approval And Design Release	1 day	Fri 8/21/15	Fri 8/21/15
6	**Design and Engineering**	**63 days**	**Mon 8/31/15**	**Wed 11/25/15**
7	Issue Budget Info - Floor Plan / Equipment Matrix / BOD	10 days	Thu 10/1/15	Wed 10/14/15
8	**Phase 1 A & 1B Design and Engineering (All Areas Except ACF, Sampling, Sublease & Pilot)**	**63 days**	**Mon 8/31/15**	**Wed 11/25/15**
9	**Schematic Design Phase 1A & 1B**	**33 days**	**Mon 8/31/15**	**Wed 10/14/15**
10	Set Floor Plans All Levels	23 days	Mon 8/31/15	Wed 9/30/15
11	Basement, 1st, 2nd and 4Th Floor Plan	10 days	Thu 10/1/15	Wed 10/14/15
12	Reflected Ceiling Plan w/ Lighting	10 days	Thu 10/1/15	Wed 10/14/15
13	Preliminary Finish Plan	10 days	Thu 10/1/15	Wed 10/14/15
14	Utility Matrix tagged	10 days	Thu 10/1/15	Wed 10/14/15
15	Equipment Plan w/ Tag Equipment To Matrix	10 days	Thu 10/1/15	Wed 10/14/15
16	Building Core Support Design Requirements	10 days	Thu 10/1/15	Wed 10/14/15
17	Preliminary Furniture Plan	10 days	Thu 10/1/15	Wed 10/14/15
18	Architectural & MEP Narrative and Basis Of Design	10 days	Thu 10/1/15	Wed 10/14/15
19	Gas Distribution Plan	10 days	Thu 10/1/15	Wed 10/14/15
20	Issue Schematic Design Package	10 days	Thu 10/1/15	Wed 10/14/15
21	Schematic Design Comments	5 days	Thu 10/15/15	Wed 10/21/15
22	**Phase 1A & 1B Design Documents**	**30 days**	**Thu 10/15/15**	**Wed 11/25/15**
23	Phase 1A & 1B Permit Drawings	20 days	Thu 10/15/15	Wed 11/11/15
24	**Phase 1A & 1B 100% Long Lead Packages**	**20 days**	**Thu 10/15/15**	**Wed 11/11/15**
25	Lab casework 100% Buy Package	10 days	Thu 10/15/15	Wed 10/28/15
26	FP / Plumbing / HVAC / Electrical 100% Buy Package	20 days	Thu 10/15/15	Wed 11/11/15
27	Structural Steel 100% buy Package	20 days	Thu 10/15/15	Wed 11/11/15
28	Millwork 100% Buy Package	20 days	Thu 10/15/15	Wed 11/11/15
29	Door 100% Buy Package	20 days	Thu 10/15/15	Wed 11/11/15
30	Wall Glazing system 100% Buy Package	20 days	Thu 10/15/15	Wed 11/11/15
31	Specialty 100% Buy Package	20 days	Thu 10/15/15	Wed 11/11/15
32	Final Construction Drawings	10 days	Thu 11/12/15	Wed 11/25/15
33	**Budget / Permitting**	**44 days**	**Thu 10/15/15**	**Tue 12/15/15**
34	**Budgeting**	**14 days**	**Thu 10/15/15**	**Tue 11/3/15**
35	Produce Updated SD Budget	10 days	Thu 10/15/15	Wed 10/28/15

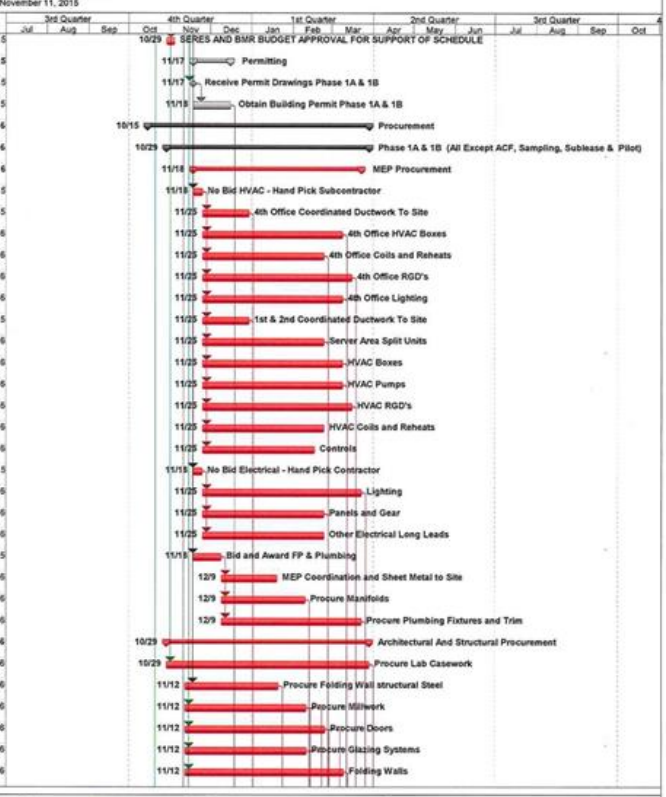


Project: 200 Seres Lease Phase 1A &
Date: Wed 11/11/15

Task
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary
Group By Summary
Inactive Task
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
Progress
Deadline

Preliminary Project Schedule
Seres Therapeutics - Phase 1A & 1B
November 11, 2015

ID	Task Name	Duration	Start	Finish
36	SERES AND BMR BUDGET APPROVAL FOR SUPPORT OF SCHEDULE	4 days	Thu 10/29/15	Tue 11/3/15
37	**Permitting**	**20 days**	**Tue 11/17/15**	**Tue 12/15/15**
38	Receive Permit Drawings Phase 1A & 1B	0 days	Tue 11/17/15	Tue 11/17/15
39	Obtain Building Permit Phase 1A & 1B	20 days	Wed 11/18/15	Tue 12/15/15
40	**Procurement**	**118 days**	**Thu 10/15/15**	**Mon 3/28/16**
41	**Phase 1A & 1B (All Except ACF, Sampling, Sublease & Pilot)**	**108 days**	**Thu 10/29/15**	**Mon 3/28/16**
42	**MEP Procurement**	**90 days**	**Wed 11/18/15**	**Tue 3/22/16**
43	No Bid HVAC - Hand Pick Subcontractor	5 days	Wed 11/18/15	Tue 11/24/15
44	4th Office Coordinated Ductwork To Site	25 days	Wed 11/25/15	Tue 12/29/15
45	4th Office HVAC Boxes	75 days	Wed 11/25/15	Tue 3/8/16
46	4th Office Coils and Reheats	65 days	Wed 11/25/15	Tue 2/23/16
47	4th Office RGD's	80 days	Wed 11/25/15	Tue 3/15/16
48	4th Office Lighting	75 days	Wed 11/25/15	Tue 3/8/16
49	1st & 2nd Coordinated Ductwork To Site	25 days	Wed 11/25/15	Tue 12/29/15
50	Server Area Split Units	65 days	Wed 11/25/15	Tue 2/23/16
51	HVAC Boxes	75 days	Wed 11/25/15	Tue 3/8/16
52	HVAC Pumps	75 days	Wed 11/25/15	Tue 3/8/16
53	HVAC RGD's	80 days	Wed 11/25/15	Tue 3/15/16
54	HVAC Coils and Reheats	65 days	Wed 11/25/15	Tue 2/23/16
55	Controls	60 days	Wed 11/25/15	Tue 2/16/16
56	No Bid Electrical - Hand Pick Contractor	5 days	Wed 11/18/15	Tue 11/24/15
57	Lighting	85 days	Wed 11/25/15	Tue 3/22/16
58	Panels and Gear	65 days	Wed 11/25/15	Tue 2/23/16
59	Other Electrical Long Leads	65 days	Wed 11/25/15	Tue 2/23/16
60	Bid and Award FP & Plumbing	15 days	Wed 11/18/15	Tue 12/8/15
61	MEP Coordination and Sheet Metal to Site	30 days	Wed 12/9/15	Tue 1/19/16
62	Procure Manifolds	45 days	Wed 12/9/15	Tue 2/9/16
63	Procure Plumbing Fixtures and Trim	75 days	Wed 12/9/15	Tue 3/22/16
64	**Architectural And Structural Procurement**	**108 days**	**Thu 10/29/15**	**Mon 3/28/16**
65	Procure Lab Casework	108 days	Thu 10/29/15	Mon 3/28/16
66	Procure Folding Wall structural Steel	50 days	Thu 11/12/15	Wed 1/20/16
67	Procure Millwork	65 days	Thu 11/12/15	Wed 2/10/16
68	Procure Doors	75 days	Thu 11/12/15	Wed 2/24/16
69	Procure Glazing Systems	65 days	Thu 11/12/15	Wed 2/10/16
70	Folding Walls	85 days	Thu 11/12/15	Wed 3/9/16

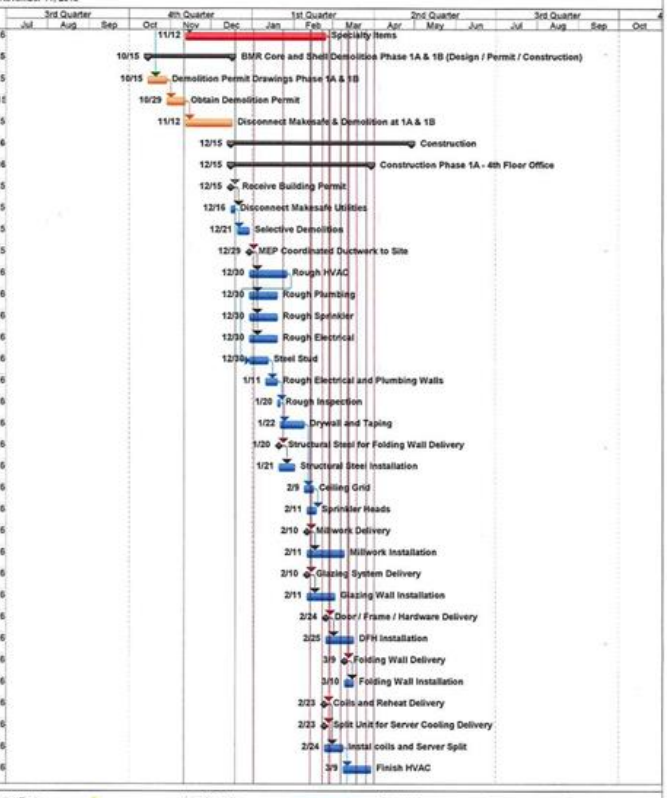


Project: 200 Seres Lease Phase 1A &
Date: Wed 11/11/15

Task	Rolled Up Progress	Inactive Task	Duration-only	Progress			
Milestone	Split	Inactive Task	Manual Summary Rollup	Deadline			
Summary	External Tasks	Inactive Milestone	Manual Summary				
Rolled Up Task	Project Summary	Inactive Summary	Start-only				
Rolled Up Milestone	Group By Summary	Manual Task	Finish-only				

Preliminary Project Schedule
Seres Therapeutics - Phase 1A & 1B
November 11, 2015

ID	Task Name	Duration	Start	Finish
71	Specialty Items	75 days	Thu 11/12/15	Wed 2/24/16
72	**BMR Core and Shell Demolition Phase 1A & 1B (Design / Permit / Construction)**	**45 days**	**Thu 10/15/15**	**Wed 12/16/15**
73	Demolition Permit Drawings Phase 1A & 1B	10 days	Thu 10/15/15	Wed 10/28/15
74	Obtain Demolition Permit	10 days	Thu 10/29/15	Wed 11/11/15
75	Disconnect Makesafe & Demolition at 1A & 1B	25 days	Thu 11/12/15	Wed 12/16/15
76	**Construction**	**97 days**	**Tue 12/15/15**	**Thu 4/28/16**
77	**Construction Phase 1A - 4th Floor Office**	**75 days**	**Tue 12/15/15**	**Tue 3/29/16**
78	Receive Building Permit	0 days	Tue 12/15/15	Tue 12/15/15
79	Disconnect Makesafe Utilities	3 days	Wed 12/16/15	Fri 12/18/15
80	Selective Demolition	7 days	Mon 12/21/15	Tue 12/29/15
81	MEP Coordinated Ductwork to Site	0 days	Tue 12/29/15	Tue 12/29/15
82	Rough HVAC	20 days	Wed 12/30/15	Tue 1/26/16
83	Rough Plumbing	15 days	Wed 12/30/15	Tue 1/19/16
84	Rough Sprinkler	15 days	Wed 12/30/15	Tue 1/19/16
85	Rough Electrical	15 days	Wed 12/30/15	Tue 1/19/16
86	Steel Stud	10 days	Wed 12/30/15	Tue 1/12/16
87	Rough Electrical and Plumbing Walls	7 days	Mon 1/11/16	Tue 1/19/16
88	Rough Inspection	2 days	Wed 1/20/16	Thu 1/21/16
89	Drywall and Taping	12 days	Fri 1/22/16	Mon 2/8/16
90	Structural Steel for Folding Wall Delivery	0 days	Wed 1/20/16	Wed 1/20/16
91	Structural Steel Installation	8 days	Thu 1/21/16	Mon 2/1/16
92	Ceiling Grid	5 days	Tue 2/9/16	Mon 2/15/16
93	Sprinkler Heads	5 days	Thu 2/11/16	Wed 2/17/16
94	Millwork Delivery	0 days	Wed 2/10/16	Wed 2/10/16
95	Millwork Installation	20 days	Thu 2/11/16	Wed 3/9/16
96	Glazing System Delivery	0 days	Wed 2/10/16	Wed 2/10/16
97	Glazing Wall Installation	15 days	Thu 2/11/16	Wed 3/2/16
98	Door / Frame / Hardware Delivery	0 days	Wed 2/24/16	Wed 2/24/16
99	DFH Installation	15 days	Thu 2/25/16	Wed 3/16/16
100	Folding Wall Delivery	0 days	Wed 3/9/16	Wed 3/9/16
101	Folding Wall Installation	5 days	Thu 3/10/16	Wed 3/16/16
102	Coils and Reheat Delivery	0 days	Tue 2/23/16	Tue 2/23/16
103	Split Unit for Server Cooling Delivery	0 days	Tue 2/23/16	Tue 2/23/16
104	Instal coils and Server Split	10 days	Wed 2/24/16	Tue 3/8/16
105	Finish HVAC	15 days	Wed 3/9/16	Tue 3/29/16

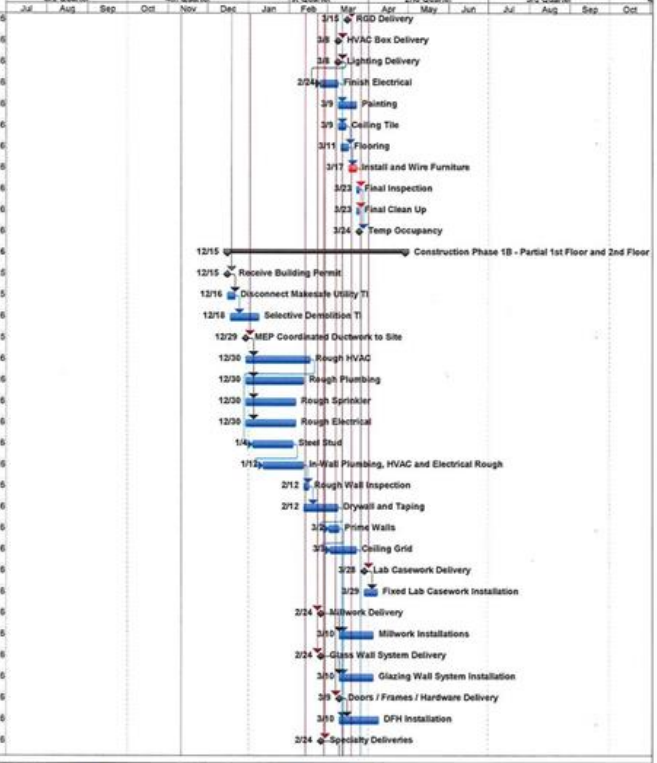


Project: 200 Seres Lease Phase 1A &
Date: Wed 11/11/15

Task	Rolled Up Progress	Inactive Task	Duration-only	Progress			
Milestone	Split	Inactive Task	Manual Summary Rollup	Deadline			
Summary	External Tasks	Inactive Milestone	Manual Summary				
Rolled Up Task	Project Summary	Inactive Summary	Start-only				
Rolled Up Milestone	Group By Summary	Manual Task	Finish-only				

Preliminary Project Schedule
Seres Therapeutics - Phase 1A & 1B
November 11, 2015

ID	Task Name	Duration	Start	Finish
106	RGD Delivery	0 days	Tue 3/15/16	Tue 3/15/16
107	HVAC Box Delivery	0 days	Tue 3/8/16	Tue 3/8/16
108	Lighting Delivery	0 days	Tue 3/8/16	Tue 3/8/16
109	Finish Electrical	10 days	Wed 2/24/16	Tue 3/8/16
110	Painting	10 days	Wed 3/9/16	Tue 3/22/16
111	Ceiling Tile	4 days	Wed 3/9/16	Mon 3/14/16
112	Flooring	4 days	Fri 3/11/16	Wed 3/16/16
113	Install and Wire Furniture	4 days	Thu 3/17/16	Tue 3/22/16
114	Final Inspection	2 days	Wed 3/23/16	Thu 3/24/16
115	Final Clean Up	2 days	Wed 3/23/16	Thu 3/24/16
116	Temp Occupancy	0 days	Thu 3/24/16	Thu 3/24/16
117	**Construction Phase 1B - Partial 1st Floor and 2nd Floor Office**	**97 days**	**Tue 12/15/15**	**Thu 4/28/16**
118	Receive Building Permit	0 days	Tue 12/15/15	Tue 12/15/15
119	Disconnect Makesafe Utility TI	4 days	Wed 12/16/15	Mon 12/21/15
120	Selective Demolition TI	16 days	Fri 12/18/15	Fri 1/8/16
121	MEP Coordinated Ductwork to Site	0 days	Tue 12/29/15	Tue 12/29/15
122	Rough HVAC	35 days	Wed 12/30/15	Tue 2/16/16
123	Rough Plumbing	32 days	Wed 12/30/15	Thu 2/11/16
124	Rough Sprinkler	28 days	Wed 12/30/15	Fri 2/5/16
125	Rough Electrical	28 days	Wed 12/30/15	Fri 2/5/16
126	Steel Stud	23 days	Mon 1/4/16	Wed 2/3/16
127	In-Wall Plumbing, HVAC and Electrical Rough	23 days	Tue 1/12/16	Thu 2/11/16
128	Rough Wall Inspection	2 days	Fri 2/12/16	Mon 2/15/16
129	Drywall and Taping	18 days	Fri 2/12/16	Tue 3/8/16
130	Prime Walls	6 days	Wed 3/2/16	Wed 3/9/16
131	Ceiling Grid	14 days	Thu 3/3/16	Tue 3/22/16
132	Lab Casework Delivery	0 days	Mon 3/28/16	Mon 3/28/16
133	Fixed Lab Casework Installation	8 days	Tue 3/29/16	Thu 4/7/16
134	Millwork Delivery	0 days	Wed 2/24/16	Wed 2/24/16
135	Millwork Installations	18 days	Thu 3/10/16	Mon 4/4/16
136	Glass Wall System Delivery	0 days	Wed 2/24/16	Wed 2/24/16
137	Glazing Wall System Installation	18 days	Thu 3/10/16	Mon 4/4/16
138	Doors / Frames / Hardware Delivery	0 days	Wed 3/9/16	Wed 3/9/16
139	DFH Installation	22 days	Thu 3/10/16	Fri 4/8/16
140	Specialty Deliveries	0 days	Wed 2/24/16	Wed 2/24/16

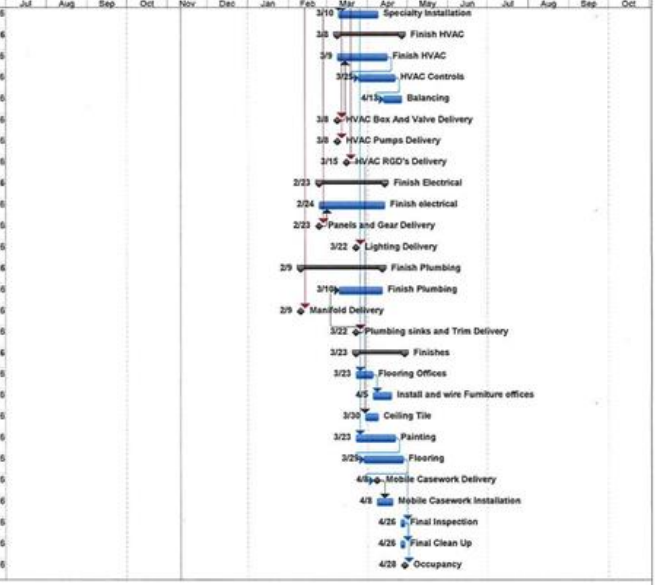


Project: 200 Seres Lease Phase 1A &
Date: Wed 11/11/15

Task	Rolled Up Progress	Inactive Task	Duration-only	Progress			
Milestone	Split	Inactive Task	Manual Summary Rollup	Deadline			
Summary	External Tasks	Inactive Milestone	Manual Summary				
Rolled Up Task	Project Summary	Inactive Summary	Start-only				
Rolled Up Milestone	Group By Summary	Manual Task	Finish-only				

Preliminary Project Schedule
Seres Therapeutics - Phase 1A & 1B
November 11, 2015

ID	Task Name	Duration	Start	Finish
141	Specialty Installation	22 days	Thu 3/10/16	Fri 4/8/16
142	**Finish HVAC**	**35 days**	**Tue 3/8/16**	**Tue 4/26/16**
143	Finish HVAC	28 days	Wed 3/9/16	Fri 4/15/16
144	HVAC Controls	20 days	Fri 3/25/16	Thu 4/21/16
145	Balancing	10 days	Wed 4/13/16	Tue 4/26/16
146	HVAC Box And Valve Delivery	0 days	Tue 3/8/16	Tue 3/8/16
147	HVAC Pumps Delivery	0 days	Tue 3/8/16	Tue 3/8/16
148	HVAC RGD's Delivery	0 days	Tue 3/15/16	Tue 3/15/16
149	**Finish Electrical**	**36 days**	**Tue 2/23/16**	**Wed 4/13/16**
150	Finish electrical	36 days	Wed 2/24/16	Wed 4/13/16
151	Panels and Gear Delivery	0 days	Tue 2/23/16	Tue 2/23/16
152	Lighting Delivery	0 days	Tue 3/22/16	Tue 3/22/16
153	**Finish Plumbing**	**44 days**	**Tue 2/9/16**	**Mon 4/11/16**
154	Finish Plumbing	23 days	Thu 3/10/16	Mon 4/11/16
155	Manifold Delivery	0 days	Tue 2/9/16	Tue 2/9/16
156	Plumbing sinks and Trim Delivery	0 days	Tue 3/22/16	Tue 3/22/16
157	**Finishes**	**27 days**	**Wed 3/23/16**	**Thu 4/28/16**
158	Flooring Offices	9 days	Wed 3/23/16	Mon 4/4/16
159	Install and wire Furniture offices	10 days	Tue 4/5/16	Mon 4/18/16
160	Ceiling Tile	8 days	Wed 3/30/16	Fri 4/8/16
161	Painting	22 days	Wed 3/23/16	Thu 4/21/16
162	Flooring	22 days	Tue 3/29/16	Wed 4/27/16
163	Mobile Casework Delivery	0 days	Fri 4/8/16	Fri 4/8/16
164	Mobile Casework Installation	8 days	Fri 4/8/16	Tue 4/19/16
165	Final Inspection	3 days	Tue 4/26/16	Thu 4/28/16
166	Final Clean Up	3 days	Tue 4/26/16	Thu 4/28/16
167	Occupancy	0 days	Thu 4/28/16	Thu 4/28/16



Project: 200 Seres Lease Phase 1A &
Date: Wed 11/11/15

Task	Rolled Up Progress	Inactive Task	Duration-only	Progress			
Milestone	Split	Inactive Task	Manual Summary Rollup	Deadline			
Summary	External Tasks	Inactive Milestone	Manual Summary				
Rolled Up Task	Project Summary	Inactive Summary	Start-only				
Rolled Up Milestone	Group By Summary	Manual Task	Finish-only				

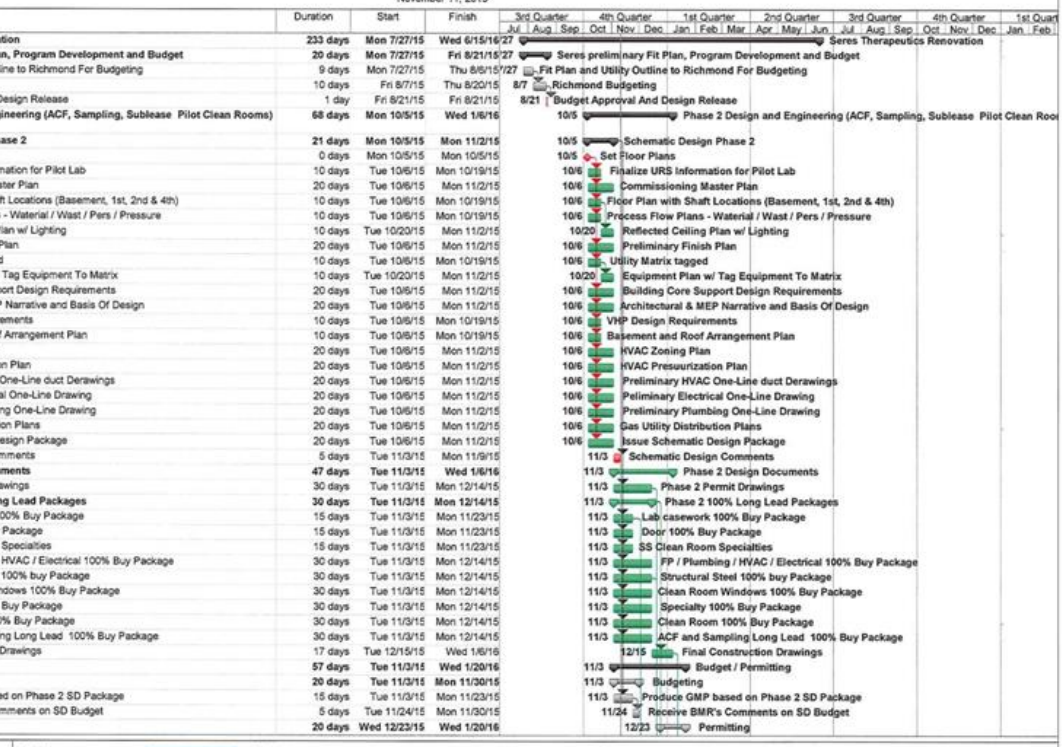
EXHIBIT B-4-b

PHASE 2 SCHEDULE

[SEE ATTACHED]

Preliminary Project Schedule
Seres Therapeutics - Phase 2 Schedule
November 11, 2015

ID	Task Name	Duration	Start	Finish
1	**Seres Therapeutics Renovation**	**233 days**	**Mon 7/27/15**	**Wed 6/15/16**
2	**Seres preliminary Fit Plan, Program Development and Budget**	**20 days**	**Mon 7/27/15**	**Fri 8/21/15**
3	Fit Plan and Utility Outline to Richmond For Budgeting	9 days	Mon 7/27/15	Thu 8/6/15
4	Richmond Budgeting	10 days	Fri 8/7/15	Thu 8/20/15
5	Budget Approval And Design Release	1 day	Fri 8/21/15	Fri 8/21/15
6	**Phase 2 Design and Engineering (ACF, Sampling, Sublease Pilot Clean Rooms)**	**68 days**	**Mon 10/5/15**	**Wed 1/6/16**
7	**Schematic Design Phase 2**	**21 days**	**Mon 10/5/15**	**Mon 11/2/15**
8	Set Floor Plans	0 days	Mon 10/5/15	Mon 10/5/15
9	Finalize URS Information for Pilot Lab	10 days	Tue 10/6/15	Mon 10/19/15
10	Commissioning Master Plan	20 days	Tue 10/6/15	Mon 11/2/15
11	Floor Plan with Shaft Locations (Basement, 1st, 2nd & 4th)	10 days	Tue 10/6/15	Mon 10/19/15
12	Process Flow Plans - Waterial / Wast / Pers / Pressure	10 days	Tue 10/6/15	Mon 10/19/15
13	Reflected Ceiling Plan w/ Lighting	10 days	Tue 10/20/15	Mon 11/2/15
14	Preliminary Finish Plan	20 days	Tue 10/6/15	Mon 11/2/15
15	Utility Matrix tagged	10 days	Tue 10/6/15	Mon 10/19/15
16	Equipment Plan w/ Tag Equipment To Matrix	10 days	Tue 10/20/15	Mon 11/2/15
17	Building Core Support Design Requirements	20 days	Tue 10/6/15	Mon 11/2/15
18	Architectural & MEP Narrative and Basis Of Design	20 days	Tue 10/6/15	Mon 11/2/15
19	VHP Design Requirements	10 days	Tue 10/6/15	Mon 10/19/15
20	Basement and Roof Arrangement Plan	10 days	Tue 10/6/15	Mon 10/19/15
21	HVAC Zoning Plan	20 days	Tue 10/6/15	Mon 11/2/15
22	HVAC Presurization Plan	20 days	Tue 10/6/15	Mon 11/2/15
23	Preliminary HVAC One-Line duct Derawings	20 days	Tue 10/6/15	Mon 11/2/15
24	Peliminary Electrical One-Line Drawing	20 days	Tue 10/6/15	Mon 11/2/15
25	Preliminary Plumbing One-Line Drawing	20 days	Tue 10/6/15	Mon 11/2/15
26	Gas Utility Distribution Plans	20 days	Tue 10/6/15	Mon 11/2/15
27	Issue Schematic Design Package	20 days	Tue 10/6/15	Mon 11/2/15
28	Schematic Design Comments	5 days	Tue 11/3/15	Mon 11/9/15
29	**Phase 2 Design Documents**	**47 days**	**Tue 11/3/15**	**Wed 1/6/16**
30	Phase 2 Permit Drawings	30 days	Tue 11/3/15	Mon 12/14/15
31	**Phase 2 100% Long Lead Packages**	**30 days**	**Tue 11/3/15**	**Mon 12/14/15**
32	Lab casework 100% Buy Package	15 days	Tue 11/3/15	Mon 11/23/15
33	Door 100% Buy Package	15 days	Tue 11/3/15	Mon 11/23/15
34	SS Clean Room Specialties	15 days	Tue 11/3/15	Mon 11/23/15
35	FP / Plumbing / HVAC / Electrical 100% Buy Package	30 days	Tue 11/3/15	Mon 12/14/15
36	Structural Steel 100% buy Package	30 days	Tue 11/3/15	Mon 12/14/15
37	Clean Room Windows 100% Buy Package	30 days	Tue 11/3/15	Mon 12/14/15
38	Specialty 100% Buy Package	30 days	Tue 11/3/15	Mon 12/14/15
39	Clean Room 100% Buy Package	30 days	Tue 11/3/15	Mon 12/14/15
40	ACF and Sampling Long Lead 100% Buy Package	30 days	Tue 11/3/15	Mon 12/14/15
41	Final Construction Drawings	17 days	Tue 12/15/15	Wed 1/6/16
42	**Budget / Permitting**	**57 days**	**Tue 11/3/15**	**Wed 1/20/16**
43	**Budgeting**	**20 days**	**Tue 11/3/15**	**Mon 11/30/15**
44	Produce GMP based on Phase 2 SD Package	15 days	Tue 11/3/15	Mon 11/23/15
45	Receive BMR's Comments on SD Budget	5 days	Tue 11/24/15	Mon 11/30/15
46	**Permitting**	**20 days**	**Wed 12/23/15**	**Wed 1/20/16**



Project: 200 Seres Lease Schedule Ph
Date: Wed 11/11/15

Task	Split	Inactive Milestone	Start-only		
Milestone	External Tasks	Inactive Summary	Finish-only		
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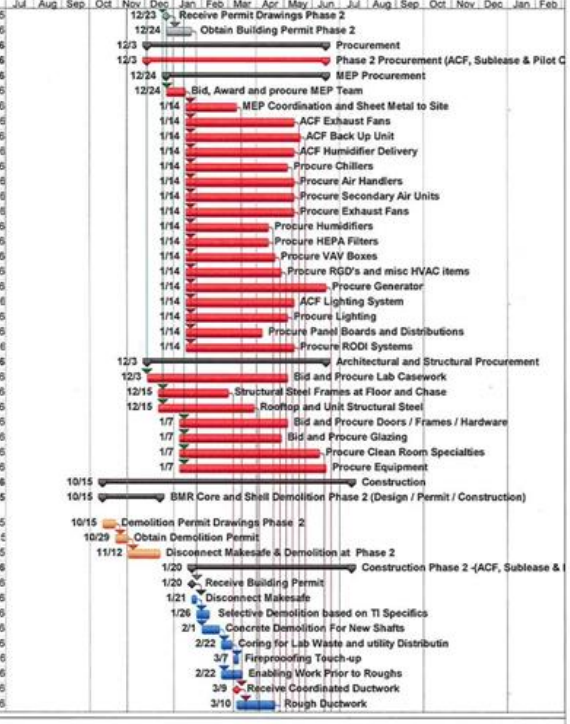
Rolled Up Milestone	Inactive Task	Manual Summary Rollup			
Rolled Up Progress	Inactive Task	Manual Summary			

Preliminary Project Schedule
Seres Therapeutics - Phase 2 Schedule
November 11, 2015

ID	Task Name	Duration	Start	Finish
47	Receive Permit Drawings Phase 2	0 days	Wed 12/23/15	Wed 12/23/15
48	Obtain Building Permit Phase 2	20 days	Thu 12/24/15	Wed 1/20/16
49	**Procurement**	**140 days**	**Thu 12/3/15**	**Wed 6/15/16**
50	**Phase 2 Procurement (ACF, Sublease & Pilot Clean Rooms)**	**140 days**	**Thu 12/3/15**	**Wed 6/15/16**
51	**MEP Procurement**	**125 days**	**Thu 12/24/15**	**Wed 6/15/16**
52	Bid, Award and procure MEP Team	15 days	Thu 12/24/15	Wed 1/13/16
53	MEP Coordination and Sheet Metal to Site	40 days	Thu 1/14/16	Wed 3/9/16
54	ACF Exhaust Fans	85 days	Thu 1/14/16	Wed 5/11/16
55	ACF Back Up Unit	90 days	Thu 1/14/16	Wed 5/18/16
56	ACF Humidifier Delivery	85 days	Thu 1/14/16	Wed 5/11/16
57	Procure Chillers	80 days	Thu 1/14/16	Wed 5/4/16
58	Procure Air Handlers	85 days	Thu 1/14/16	Wed 5/11/16
59	Procure Secondary Air Units	85 days	Thu 1/14/16	Wed 5/11/16
60	Procure Exhaust Fans	85 days	Thu 1/14/16	Wed 5/11/16
61	Procure Humidifiers	65 days	Thu 1/14/16	Wed 4/13/16
62	Procure HEPA Filters	65 days	Thu 1/14/16	Wed 4/13/16
63	Procure VAV Boxes	70 days	Thu 1/14/16	Wed 4/20/16
64	Procure RGD's and misc HVAC items	75 days	Thu 1/14/16	Wed 4/27/16
65	Procure Generator	110 days	Thu 1/14/16	Wed 6/15/16
66	ACF Lighting System	85 days	Thu 1/14/16	Wed 5/11/16
67	Procure Lighting	80 days	Thu 1/14/16	Wed 5/4/16
68	Procure Panel Boards and Distributions	60 days	Thu 1/14/16	Wed 4/6/16
69	Procure RODI Systems	85 days	Thu 1/14/16	Wed 5/11/16
70	**Architectural and Structural Procurement**	**140 days**	**Thu 12/3/15**	**Wed 6/15/16**
71	Bid and Procure Lab Casework	110 days	Thu 12/3/15	Wed 5/4/16
72	Structural Steel Frames at Floor and Chase	55 days	Tue 12/15/15	Mon 2/29/16
73	Rooftop and Unit Structural Steel	75 days	Tue 12/15/15	Mon 3/28/16
74	Bid and Procure Doors / Frames / Hardware	85 days	Thu 1/7/16	Wed 5/4/16
75	Bid and Procure Glazing	80 days	Thu 1/7/16	Wed 4/27/16
76	Procure Clean Room Specialties	110 days	Thu 1/7/16	Wed 6/8/16
77	Procure Equipment	115 days	Thu 1/7/16	Wed 6/15/16
78	**Construction**	**195 days**	**Thu 10/15/15**	**Wed 7/13/16**
79	**BMR Core and Shell Demolition Phase 2 (Design / Permit / Construction)**	**45 days**	**Thu 10/15/15**	**Wed 12/16/15**
80	Demolition Permit Drawings Phase 2	10 days	Thu 10/15/15	Wed 10/28/15
81	Obtain Demolition Permit	10 days	Thu 10/29/15	Wed 11/11/15
82	Disconnect Makesafe & Demolition at Phase 2	25 days	Thu 11/12/15	Wed 12/16/15
83	**Construction Phase 2 -(ACF, Sublease & Pilot Labs)**	**125 days**	**Wed 1/20/16**	**Wed 7/13/16**
84	Receive Building Permit	0 days	Wed 1/20/16	Wed 1/20/16
85	Disconnect Makesafe	3 days	Thu 1/21/16	Mon 1/25/16
86	Selective Demolition based on TI Specifics	10 days	Tue 1/26/16	Mon 2/8/16
87	Concrete Demolition For New Shafts	15 days	Mon 2/1/16	Fri 2/19/16
88	Coring for Lab Waste and utility Distributin	10 days	Mon 2/22/16	Fri 3/4/16
89	Fireprooofing Touch-up	5 days	Mon 3/7/16	Fri 3/11/16
90	Enabling Work Prior to Roughs	17 days	Mon 2/22/16	Tue 3/15/16
91	Receive Coordinated Ductwork	0 days	Wed 3/9/16	Wed 3/9/16
92	Rough Ductwork	30 days	Thu 3/10/16	Wed 4/20/16



Project: 200 Seres Lease Schedule Ph
Date: Wed 11/11/15

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Milestone	External Tasks	Inactive Summary	Finish-only		
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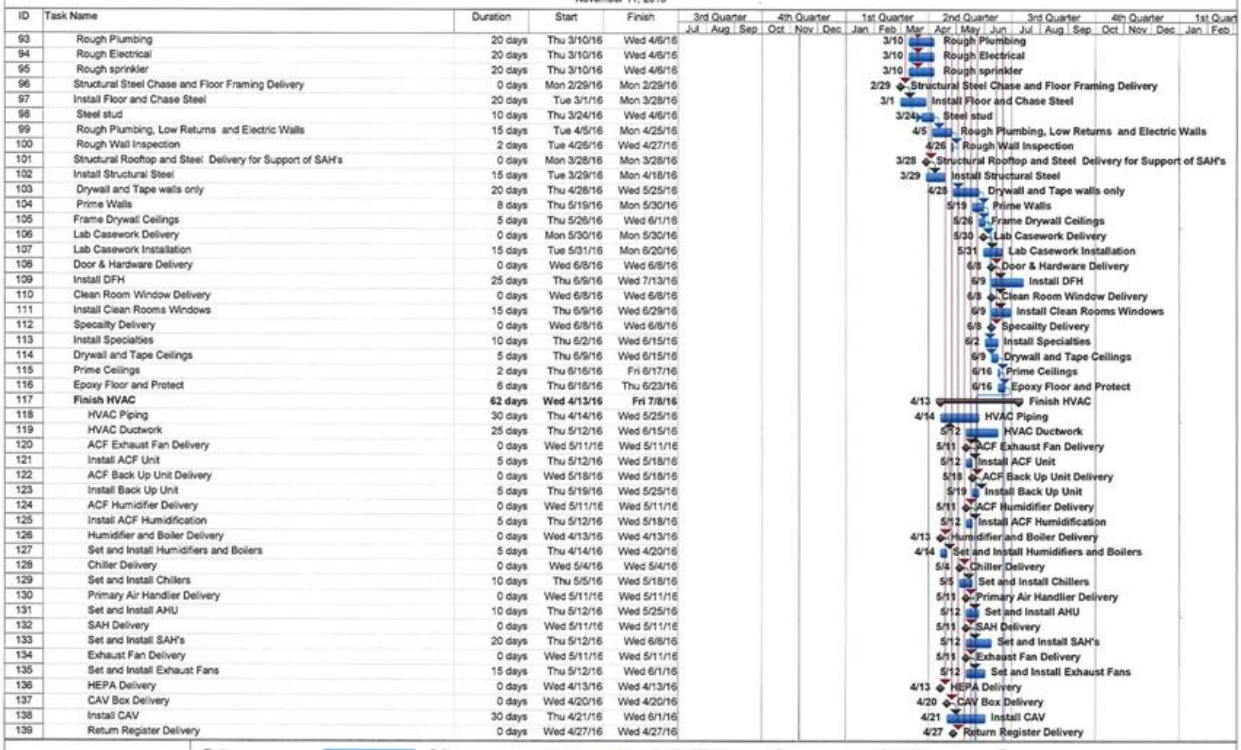
Preliminary Project Schedule
Seres Therapeutics - Phase 2 Schedule
November 11, 2015

ID	Task Name	Duration	Start	Finish
93	Rough Plumbing	20 days	Thu 3/10/16	Wed 4/6/16
94	Rough Electrical	20 days	Thu 3/10/16	Wed 4/6/16
95	Rough sprinkler	20 days	Thu 3/10/16	Wed 4/6/16
96	Structural Steel Chase and Floor Framing Delivery	0 days	Mon 2/29/16	Mon 2/29/16
97	Install Floor and Chase Steel	20 days	Tue 3/1/16	Mon 3/28/16
98	Steel stud	10 days	Thu 3/24/16	Wed 4/6/16
99	Rough Plumbing, Low Returns and Electric Walls	15 days	Tue 4/5/16	Mon 4/25/16
100	Rough Wall Inspection	2 days	Tue 4/26/16	Wed 4/27/16
101	Structural Rooftop and Steel Delivery for Support of SAH's	0 days	Mon 3/28/16	Mon 3/28/16
102	Install Structural Steel	15 days	Tue 3/29/16	Mon 4/18/16
103	Drywall and Tape walls only	20 days	Thu 4/28/16	Wed 5/25/16
104	Prime Walls	8 days	Thu 5/19/16	Mon 5/30/16
105	Frame Drywall Ceilings	5 days	Thu 5/26/16	Wed 6/1/16
106	Lab Casework Delivery	0 days	Mon 5/30/16	Mon 5/30/16
107	Lab Casework Installation	15 days	Tue 5/31/16	Mon 6/20/16
108	Door & Hardware Delivery	0 days	Wed 6/8/16	Wed 6/8/16
109	Install DFH	25 days	Thu 6/9/16	Wed 7/13/16
110	Clean Room Window Delivery	0 days	Wed 6/8/16	Wed 6/8/16
111	Install Clean Rooms Windows	15 days	Thu 6/9/16	Wed 6/29/16
112	Specailty Delivery	0 days	Wed 6/8/16	Wed 6/8/16
113	Install Specialties	10 days	Thu 6/2/16	Wed 6/15/16
114	Drywall and Tape Ceilings	5 days	Thu 6/9/16	Wed 6/15/16
115	Prime Ceilings	2 days	Thu 6/16/16	Fri 6/17/16
116	Epoxy Floor and Protect	6 days	Thu 6/16/16	Thu 6/23/16
117	**Finish HVAC**	**62 days**	**Wed 4/13/16**	**Fri 7/8/16**
118	HVAC Piping	30 days	Thu 4/14/16	Wed 5/25/16
119	HVAC Ductwork	25 days	Thu 5/12/16	Wed 6/15/16
120	ACF Exhaust Fan Delivery	0 days	Wed 5/11/16	Wed 5/11/16
121	Install ACF Unit	5 days	Thu 5/12/16	Wed 5/18/16
122	ACF Back Up Unit Delivery	0 days	Wed 5/18/16	Wed 5/18/16
123	Install Back Up Unit	5 days	Thu 5/19/16	Wed 5/25/16
124	ACF Humidifier Delivery	0 days	Wed 5/11/16	Wed 5/11/16
125	Install ACF Humidification	5 days	Thu 5/12/16	Wed 5/18/16
126	Humidifier and Boiler Delivery	0 days	Wed 4/13/16	Wed 4/13/16
127	Set and Install Humidifiers and Boilers	5 days	Thu 4/14/16	Wed 4/20/16
128	Chiller Delivery	0 days	Wed 5/4/16	Wed 5/4/16
129	Set and Install Chillers	10 days	Thu 5/5/16	Wed 5/18/16
130	Primary Air Handler Delivery	0 days	Wed 5/11/16	Wed 5/11/16
131	Set and Install AHU	10 days	Thu 5/12/16	Wed 5/25/16
132	SAH Delivery	0 days	Wed 5/11/16	Wed 5/11/16
133	Set and Install SAH's	20 days	Thu 5/12/16	Wed 6/8/16
134	Exhaust Fan Delivery	0 days	Wed 5/11/16	Wed 5/11/16
135	Set and Install Exhaust Fans	15 days	Thu 5/12/16	Wed 6/1/16
136	HEPA Delivery	0 days	Wed 4/13/16	Wed 4/13/16
137	CAV Box Delivery	0 days	Wed 4/20/16	Wed 4/20/16
138	Install CAV	30 days	Thu 4/21/16	Wed 6/1/16
139	Return Register Delivery	0 days	Wed 4/27/16	Wed 4/27/16



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Preliminary Project Schedule
Seres Therapeutics - Phase 2 Schedule
November 11, 2015

ID	Task Name	Duration	Start	Finish
140	Finish HVAC	30 days	Thu 5/12/16	Wed 6/22/16
141	HVAC Controls	25 days	Thu 5/26/16	Wed 6/29/16
142	Set HEPAS	4 days	Fri 6/24/16	Wed 6/29/16
143	Clean Space	2 days	Thu 6/30/16	Fri 7/1/16
144	Unbag HEPAs and turn air on	2 days	Mon 7/4/16	Tue 7/5/16
145	HVAC Balancing	17 days	Thu 6/16/16	Fri 7/8/16
146	**Finish Electrical**	**47 days**	**Wed 5/4/16**	**Fri 7/8/16**
147	Finish Electrical	45 days	Thu 5/5/16	Wed 7/6/16
148	Lighting Delivery	0 days	Wed 5/4/16	Wed 5/4/16
149	Install Lighting	15 days	Mon 6/20/16	Fri 7/8/16
150	Generator Delivery	0 days	Wed 6/15/16	Wed 6/15/16
151	Install and start up Generator	15 days	Thu 6/16/16	Wed 7/6/16
152	**Finish Plumbing**	**32 days**	**Wed 5/11/16**	**Fri 6/24/16**
153	Finish plumbing	32 days	Thu 5/12/16	Fri 6/24/16
154	RODI System Delivery	0 days	Wed 5/11/16	Wed 5/11/16
155	Set and Start Up RODI System	10 days	Thu 5/12/16	Wed 5/25/16
156	**Finishes**	**25 days**	**Fri 6/3/16**	**Thu 7/7/16**
157	Painting	15 days	Fri 6/3/16	Thu 6/23/16
158	Caulking	12 days	Fri 6/10/16	Mon 6/27/16
159	Set HEPAS	4 days	Fri 6/24/16	Wed 6/29/16
160	Clean Space	2 days	Thu 6/30/16	Fri 7/1/16
161	Unbag HEPAs and turn air on	2 days	Mon 7/4/16	Tue 7/5/16
162	Final Inspections	2 days	Wed 7/6/16	Thu 7/7/16
163	Occupancy	0 days	Thu 7/7/16	Thu 7/7/16

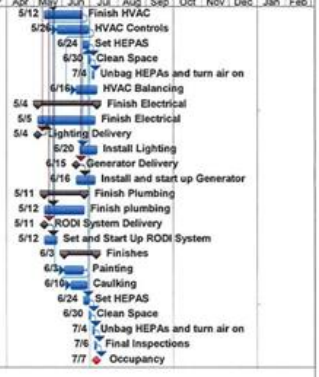

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EXHIBIT B-5

TENANT WORK INSURANCE REQUIREMENTS

Tenant shall be responsible for requiring all of Tenant contractors doing construction or renovation work to purchase and maintain such insurance as shall protect it from the claims set forth below which may arise out of or result from any Tenant Work whether such Tenant Work is completed by Tenant or by any Tenant contractors or by any person directly or indirectly employed by Tenant or any Tenant contractors, or by any person for whose acts Tenant or any Tenant contractors may be liable:

1. Claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Tenant Work to be performed.

2. Claims for damages because of bodily injury, occupational sickness or disease, or death of employees under any applicable employer's liability law.

3. Claims for damages because of bodily injury, or death of any person other than Tenant's or any Tenant contractors' employees.

4. Claims for damages insured by usual personal injury liability coverage which are sustained (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Tenant or any Tenant contractors or (b) by any other person.

5. Claims for damages, other than to the Tenant Work itself, because of injury to or destruction of tangible property, including loss of use therefrom.

6. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

Tenant contractors' Commercial General Liability Insurance shall include premises/operations (including explosion, collapse and underground coverage if such Tenant Work involves any underground work), elevators, independent contractors, products and completed operations, and blanket contractual liability on all written contracts, all including broad form property damage coverage.

Tenant contractors' Commercial General, Automobile, Employers and Umbrella LiabilityInsurance shall be written for not less than limits of liability as follows:

a. Commercial General Liability:	Commercially reasonable amounts, but in any event no less than $1,000,000 per
Bodily Injury and Property Damage	occurrence and $2,000,000 general aggregate, with $2,000,000 products and completed operations aggregate.
b. Commercial Automobile Liability:	$1,000,000 per accident
Bodily Injury and Property Damage	
c. Employer's Liability:	
Each Accident	$500,000
Disease - Policy Limit	$500,000
Disease - Each Employee	$500,000
d. Umbrella Liability:	Commercially reasonable amounts (excess of coverages a, b and c above),
Bodily Injury and Property Damage	but in any event no less than $5,000,000 per occurrence / aggregate.

All subcontractors for Tenant contractors shall carry the same coverages and limits as specified above, unless different limits are reasonably approved by Landlord. The foregoing policies shall contain a provision that coverages afforded under the policies shall not be canceled or not renewed until at least thirty (30) days' prior written notice has been given to the Landlord. Certificates of insurance including required endorsements showing such coverages to be in force shall be filed with Landlord prior to the commencement of any Tenant Work and prior to each renewal. Coverage for completed operations must be maintained for the lesser of ten (10) years and the applicable statue of repose following completion of the Tenant Work, and certificates evidencing this coverage must be provided to Landlord. The minimum A.M. Best's rating of each insurer shall be A- VII. Landlord and its mortgagees shall be named

as an additional insureds under Tenant contractors' Commercial General Liability, Commercial Automobile Liability and Umbrella Liability Insurance policies as respects liability arising from work or operations performed, or ownership, maintenance or use of autos, by or on behalf of such contractors. Each contractor and its insurers shall provide waivers of subrogation with respect to any claims covered or that should have been covered by valid and collectible insurance, including any deductibles or self-insurance maintained thereunder.

If any contractor's work involves the handling or removal of asbestos (as determined by Landlord in its sole and absolute discretion), such contractor shall also carry Pollution Legal Liability insurance. Such coverage shall include bodily injury, sickness, disease, death or mental anguish or shock sustained by any person; property damage, including physical injury to or destruction of tangible property (including the resulting loss of use thereof), clean-up costs and the loss of use of tangible property that has not been physically injured or destroyed; and defense costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such damages. Coverage shall apply to both sudden and non-sudden pollution conditions including the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water. Claims-made coverage is permitted, provided the policy retroactive date is continuously maintained prior to the Term Commencement Date, and coverage is continuously maintained during all periods in which

Tenant occupies the Premises. Coverage shall be maintained with limits of not less than $1,000,000 per incident with a $2,000,000 policy aggregate.

EXHIBIT C -1

ACKNOWLEDGEMENT OF TERM COMMENCEMENT DATE

THIS ACKNOWLEDGEMENT OF TERM COMMENCEMENT DATE is entered into as of [_____], 20[__], with reference to that certain Lease (the "Lease") dated as of [_____], 2015, by [_____], a [_____] ("Tenant"), in favor of BMR-Sidney Research Campus LLC, a Delaware limited liability company ("Landlord"). All capitalized terms used herein without definition shall have the meanings ascribed to them in the Lease.

Tenant hereby confirms the following:

1. Tenant accepted possession of the Fourth Floor Premises for use in accordance with the Permitted Use on [_____], 20[__]. Tenant first occupied the Premises for the Permitted Use on [_____], 20[__].

2. The Fourth Floor Premises are in good order, condition and repair.

3. The Phase 1A Improvements are Substantially Complete.

4. Except with respect to Landlord's delivery of the Phase 1B Premises and the Phase 2 Premises, all conditions of the Lease to be performed by Landlord as a condition to the full effectiveness of the Lease have been satisfied, and Landlord has fulfilled all of its duties in the nature of inducements offered to Tenant to lease the Premises.

5. In accordance with the provisions of Article 4 of the Lease, the Term Commencement Date is [_____], 20[__].

6. The Lease is in full force and effect, and the same represents the entire agreement between Landlord and Tenant concerning the Premises.

7. Tenant has no existing defenses against the enforcement of the Lease by Landlord, and there exist no offsets or credits against Rent owed or to be owed by Tenant.

8. The obligation to pay Rent with respect to the Fourth Floor Premises is presently in effect and all Rent obligations on the part of Tenant under the Lease with respect to the Fourth Floor Premises commenced to accrue on [_____], 20[__], with Base Rent payable on the dates and amounts set forth in the chart below:

Dates	**Approximate Square Feet of Rentable Area**	**Base Rent per Square Foot of Rentable Area**	**Monthly Base Rent**	**Annual Base Rent**
[__]/[__]/[__]- [__]/[__]/[__]	[_____]	$[_____]	$[_____]	$[_____]

9. The undersigned Tenant has not made any prior assignment, transfer, hypothecation or pledge of the Lease or of the rents thereunder or sublease of the Premises or any portion thereof.

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IN WITNESS WHEREOF, Tenant has executed this Acknowledgment of Term Commencement Date as of the date first written above.

TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By: _____
Name: _____
Title: _____

EXHIBIT C-2

ACKNOWLEDGEMENT OF PHASE 1B SUBSTANTIAL COMPLETION DATE

THIS ACKNOWLEDGEMENT OF PHASE 1B SUBSTANTIAL COMPLETION DATE is entered into as of [_____], 20[__], with reference to that certain Lease (the "Lease") dated as of [_____], 2015, by [_____], a [_____] ("Tenant"), in favor of BMR-Sidney Research Campus LLC, a Delaware limited liability company ("Landlord"). All capitalized terms used herein without definition shall have the meanings ascribed to them in the Lease.

Tenant hereby confirms the following:

1. Tenant accepted possession of the Phase 1B Premises for use in accordance with the Permitted Use on [_____], 20[__].

2. The Phase 1B Premises are in good order, condition and repair.

3. The Phase 1B Improvements are Substantially Complete.

4. Except with respect to Landlord's delivery of the Phase 2 Premises, all conditions of the Lease to be performed by Landlord as a condition to the full effectiveness of the Lease have been satisfied, and Landlord has fulfilled all of its duties in the nature of inducements offered to Tenant to lease the Premises.

5. The Lease is in full force and effect, and the same represents the entire agreement between Landlord and Tenant concerning the Premises.

6. Tenant has no existing defenses against the enforcement of the Lease by Landlord, and there exist no offsets or credits against Rent owed or to be owed by Tenant.

7. The obligation to pay Rent with respect to the Fourth Floor Premises and Phase 1B Premises is presently in effect and all Rent obligations on the part of Tenant under the Lease with respect to the Phase 1B Premises commenced to accrue on [_____], 20[__], with Base Rent for the Phase 1B Premises payable on the dates and amounts set forth in the chart below:

Dates	**Approximate Square Feet of Rentable Area**	**Base Rent per Square Foot of Rentable Area**	**Monthly Base Rent**	**Annual Base Rent**
[__]/[__]/[__]- [__]/[__]/[__]	[_____]	$[_____]	$[_____]	$[_____]

8. The undersigned Tenant has not made any prior assignment, transfer, hypothecation or pledge of the Lease or of the rents thereunder or sublease of the Premises or any portion thereof.

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IN WITNESS WHEREOF, Tenant has executed this Acknowledgment of Phase 1B Substantial Completion Date as of the date first written above.

TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By: _____
Name: _____
Title: _____

EXHIBIT C-3

ACKNOWLEDGEMENT OF PHASE 2 SUBSTANTIAL COMPLETION DATE AND TERM EXPIRATION DATE

THIS ACKNOWLEDGEMENT OF SUBSTANTIAL COMPLETION OF PHASE 2 PREMISES AND TERM EXPIRATION DATE is entered into as of [_____], 20[__],with reference to that certain Lease (the "Lease") dated as of [_____], 2015, by [_____], a [_____] ("Tenant"), in favor of BMR-Sidney Research Campus LLC, a Delaware limited liability company ("Landlord"). All capitalized terms used herein without definition shall have the meanings ascribed to them in the Lease.

Tenant hereby confirms the following:

1. Tenant delivered that certain Acknowledgement of Term Commencement Date on [_____], [20___].

2. Landlord has delivered the Phase 2 Premises to Tenant Substantially Complete.

3. The Rent Commencement Date is [_____], [20____]

4. The Term Expiration Date is [_____], [20____].

5. The Premises are in good order, condition and repair.

6. The Phase 2 Improvements are Substantially Complete.

7. All conditions of the Lease to be performed by Landlord as a condition to the full effectiveness of the Lease have been satisfied, and Landlord has fulfilled all of its duties in the nature of inducements offered to Tenant to lease the Premises.

8. The Lease is in full force and effect, and the same represents the entire agreement between Landlord and Tenant concerning the Premises.

9. Tenant has no existing defenses against the enforcement of the Lease by Landlord, and there exist no offsets or credits against Rent owed or to be owed by Tenant.

10. The obligation to pay Rent with respect to the entire Premises is presently in effect and all Rent obligations on the part of Tenant under the Lease with respect to the entire Premises commenced to accrue on [_____], 20[__], with Base Rent applicable to the entire Premises payable on the dates and amounts set forth in the chart below:

Dates	**Approximate Square Feet of Rentable Area**	**Base Rent per Square Foot of Rentable Area**	**Monthly Base Rent**	**Annual Base Rent**
[__]/[__]/[__]- [__]/[__]/[__]	[ ]	$[_____]	[ ]	[ ]

11. The undersigned Tenant has not made any prior assignment, transfer, hypothecation or pledge of the Lease or of the rents thereunder or sublease of the Premises or any portion thereof.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, Tenant has executed this Acknowledgment of Substantial Completion of Phase 2 Improvements and Term Expiration Date as of the date first written above.

TENANT:

SERES THERAPEUTICS, INC.,
a Delaware corporation

By: _____
Name: _____
Title: _____

EXHIBIT D

LANDLORD/TENANT RESPONSIBILITIES MATRIX

[SEE ATTACHED]

Landlord/Tenant Responsibilities Matrix

200 Sidney Street
Cambridge, MA

November 02, 2015

DESCRIPTION			LANDLORD	TENANT
Fire Protection	F.1	Combination sprinkler/standpipe system with fire department valves and based on ordinary hazard group 2 occupancy	X	
	F.2	Fire service and double-check valve assembly.	X	
	F.3	Fire pump, controller, test header.	X	
	F.4	Alarm check valve and siamese connection.	X	
	F.5	Floor control valve assemblies and test drains.	X	
	F.6	Sprinkler coverage to all core areas.	X	
	F.7	Distribution piping with upright heads within Tenant areas.	X	
	F.8	Flow switches, tamper switches, pressure switches.	X	
	F.9	Modification of sprinkler piping and head layout to suit tenant build-out and Tenant hazard index.		X
	F.10	Specialty fire protection systems, ie; pre-action type, FM-200, etc		X
Plumbing	P.1	Domestic sanitary waste piping for Base Building riser	X	
	P.2	Domestic sanitary waste piping for tenant use		X
	P.3	Lab waste riser piping	X	
	P.4	Lab waste piping within tenant premises		X
	P.5	Storm system connection and roof drainage system.	X	

Lexington, MA:
24 Hartwell Avenue
Third Floor
Lexington, MA 02421
T 781-372-3000
F 781-372-3100

Cambridge, MA:
700 Technology Square
Suite 402
Cambridge, MA 02139
T 781-372-3000

Atlanta, GA:
1801 Old Alabama Road
Suite 125
Roswell, GA 30076
T 770-992-8585
F 770-992-6902

Washington, DC:
3000 Wilson Boulevard
Suite 210
Arlington, VA 22201
T 571-451-1940

DESCRIPTION		LANDLORD	TENANT
P.6	Natural gas service to building for Base Building	X	
P.7	Tenant gas service including meter and distribution piping for Tenant services.		X
P.8	Domestic cold water service to building and domestic cold water booster pump system.	X	
P.9	Potable and non-potable risers with valve/cap connections at each floor for Tenant use.	X	
P.10	Potable cold water distribution to Base Building equipment and common areas.	X	
P.11	Base Building toilet/janitor core including cold water, hot water, waste and vent systems.	X	
P.12	Wet column including potable cold water, waste, vent systems.	X	
P.13	Potable and non-potable distribution piping from Base Building risers to Tenant areas.		X
P.14	Distribution piping from wet columns.		X
P.15	Lab waste risers with cap connections on each floor for tenant use.	X	
P.16	Lab vent risers with cap connections on each floor for Tenant use.	X	
P.17	Lab waste distribution system from lab waste risers.		X
P.18	Common pH neutralization system and riser.	X	
P.19	Lab waste piping and connection to ph system		X
P.20	Lab vent distribution system from lab vent risers.		X
P.21	Tenant potable and non-potable hot water equipment and distribution system.		X
P.22	Air compressor system and riser	X	
P.23	Compressed air distribution from riser		X
P.24	Vacuum pump system and riser	X	
P.25	Vacuum distribution from riser		X
P.26	RO equipment system and riser	X	
P.27	RO distribution from riser		X
P.28	Gas cylinders and distribution system (ie: nitrogen co2, argon, etc.)		X

DESCRIPTION			LANDLORD	TENANT
	P.29	Tempered hot water heater and riser piping for eyewash/shower unit. System shall have valve/cap connection for tenant use.	X	
	P.30	Tenant tempered water eyewash/showers and distribution piping.		X
HVAC	H.1	Base building air handling units, general exhaust system, chilled water system, hot water system and condenser water system	X	
	H.2	Tenant-specific HVAC equipment and controls		X
	H.3	Supply air ductwork risers with connections at vertical shafts for tenant use.	X	
	H.4	Horizontal supply air ductwork distribution system from shaft connections for tenant areas.		X
	H.5	Return fans and return air risers	X	
	H.6	Return air ductwork distribution from risers to serve tenant areas		X
	H.7	General exhaust system with heat recovery coils and run around loop	X	
	H.8	Base building basement area HVAC	X	
	H.9	Modifications to basement HVAC		X
	H.10	Tenant specialty exhaust systems		X
	H.11	Exhaust air ductwork risers with connections at vertical shafts for tenant use.	X	
	H.12	Horizontal exhaust air ductwork distribution system from shaft connections for tenant areas.		X
	H.13	Base Building common area ventilation system	X	
	H.14	Chiller plant serving base building air handling units	X	
	H.15	Hot water plant serving air handling units and Tenant hot water risers with valve/cap connections per floor for Tenant use	X	
	H.16	Tenant hot water distribution piping from risers.		X
	H.17	Base Building heat recovery run around loop piping system.	X	
	H.18	Dedicated Tenant specialty area mechanical systems (ie: cold rooms, warm rooms, IT rooms, etc.)		X

DESCRIPTION			LANDLORD	TENANT
	H.19	Automatic temperature control system for Base building equipment and common areas.	X	
	H.20	Automatic temperature control system for Tenant equipment and areas.		X
Electrical	E.1	Transformer vault with Base Building utility supply	X	
	E.2	Conductors, metering equipment and circuit breakers to Tenant areas		X
	E.3	Main switchboard, metered, for base building systems.	X	
	E.4	Bus duct risers serving floors 1-4	X	
	E.5	Tenant meters, fused disconnect and utility transformer cabinets at all floors.		X
	E.6	Life safety systems for Tenant use		X
	E.7	Standby Generator for tenant systems	X	
	E.8	Standby generator distribution system with transfer switches for tenant use.		X
	E.9	Electric closets at floors for base building systems and core areas.	X	
	E.10	Electric closets for tenant areas.		X
	E.11	Power distribution for tenant areas.		X
	E.12	Addressable Fire Command Center, Fire Alarm devices to Base Building common areas, mechanical/electrical rooms and risers	X	
	E.13	Fire Alarm devices within Tenant areas, connected to Base Building risers and addressable Fire Command Center.		X
	E.14	Lighting in common and base building areas.	X	
	E.15	Lighting in tenant areas.		X
	E.16	Lightning protection system for building and Base Building Equipment	X	
	E.17	Lightning Protection system for tenant equipment		X
	E.18	Base Building telecommunications room and conduit riser system.		X
	E.19	Tenant – specific communication and Tel-Data cabling		X
	E.20	Base Building security system to include exterior doors and elevator access	X	

DESCRIPTION		LANDLORD	TENANT
E.21	Tenant security system for Tenant areas integrated with Base Building system.		X

EXHIBIT E

FORM OF LETTER OF CREDIT

[On letterhead or L/C letterhead of Issuer]

LETTER OF CREDIT

Date: _____, 20 _____

_____(the "Beneficiary")
_____
_____
Attention: _____
L/C. No.: _____
Loan No. : _____

Ladies and Gentlemen:

We establish in favor of Beneficiary our irrevocable and unconditional Letter of Credit numbered as identified above (the "L/C") for an aggregate amount of $_____, expiring at __:00 p.m. on _____ or, if such day is not a Banking Day, then the next succeeding Banking Day (such date, as extended from time to time, the "Expiry Date"). "Banking Day" means a weekday except a weekday when commercial banks in _____ are authorized or required to close.

We authorize Beneficiary to draw on us (the "Issuer") for the account of _____ (the "Account Party"), under the terms and conditions of this L/C.

Funds under this L/C are available by presenting the following documentation (the "Drawing Documentation"): (a) the original L/C and (b) a sight draft substantially in the form of Attachment 1, with blanks filled in and bracketed items provided as appropriate. No other evidence of authority, certificate, or documentation is required.

Drawing Documentation must be presented at Issuer's office at _____ on or before the Expiry Date by personal presentation, courier or messenger service, or fax. Presentation by fax shall be effective upon electronic confirmation of transmission as evidenced by a printed report from the sender's fax machine. After any fax presentation, but not as a condition to its effectiveness, Beneficiary shall with reasonable promptness deliver the original Drawing Documentation by any other means. Issuer will on request issue a receipt for Drawing Documentation.

We agree, irrevocably, and irrespective of any claim by any other person, to honor drafts drawn under and in conformity with this L/C, within the maximum amount of this L/C, presented to us on or before the Expiry Date, provided we also receive (on or before the Expiry Date) any other Drawing Documentation this L/C requires.

We shall pay this L/C only from our own funds by check or wire transfer, in compliance with the Drawing Documentation.

If Beneficiary presents proper Drawing Documentation to us on or before the Expiry Date, then we shall pay under this L/C at or before the following time (the "Payment Deadline"): (a) if presentment is made at or before noon of any Banking Day, then the close of such Banking Day; and (b) otherwise, the close of the next Banking Day. We waive any right to delay payment beyond the Payment Deadline. If we determine that Drawing Documentation is not proper, then we shall so advise Beneficiary in writing, specifying all grounds for our determination, within one Banking Day after the Payment Deadline.

Partial drawings are permitted. This L/C shall, except to the extent reduced thereby, survive any partial drawings.

We shall have no duty or right to inquire into the validity of or basis for any draw under this L/C or any Drawing Documentation. We waive any defense based on fraud or any claim of fraud.

The Expiry Date shall automatically be extended by one year (but never beyond _____ (the "Outside Date")) unless, on or before the date 90 days before any Expiry Date, we have given Beneficiary notice that the Expiry Date shall not be so extended (a "Nonrenewal Notice"). We shall promptly upon request confirm any extension of the Expiry Date under the preceding sentence by issuing an amendment to this L/C, but such an amendment is not required for the extension to be effective. We need not give any notice of the Outside Date.

Beneficiary may from time to time without charge transfer this L/C, in whole but not in part, to any transferee (the "Transferee"). Issuer shall look solely to Account Party for payment of any fee for any transfer of this L/C. Such payment is not a condition to any such transfer. Beneficiary or Transferee shall consummate such transfer by delivering to Issuer the original of this L/C and a Transfer Notice substantially in the form of Attachment 2, purportedly signed by Beneficiary, and designating Transferee. Issuer shall promptly reissue or amend this L/C in favor of Transferee as Beneficiary. Upon any transfer, all references to Beneficiary shall automatically refer to Transferee, who may then exercise all rights of Beneficiary. Issuer expressly consents to any transfers made from time to time in compliance with this paragraph.

Any notice to Beneficiary shall be in writing and delivered by hand with receipt acknowledged or by overnight delivery service such as FedEx (with proof of delivery) at the above address, or such other address as Beneficiary may specify by written notice to Issuer. A copy of any such notice shall also be delivered, as a condition to the effectiveness of such notice, to: _____ (or such replacement as Beneficiary designates from time to time by written notice).

No amendment that adversely affects Beneficiary shall be effective without Beneficiary's written consent.

This L/C is subject to and incorporates by reference: (a) the International Standby Practices 98 ("ISP 98"); and (b) to the extent not inconsistent with ISP 98, Article 5 of the Uniform Commercial Code of the State of New York.

Very truly yours,

[Issuer Signature]

ATTACHMENT 1 TO EXHIBIT E

FORM OF SIGHT DRAFT

[BENEFICIARY LETTERHEAD]

TO:

[Name and Address of Issuer]

SIGHT DRAFT

AT SIGHT, pay to the Order of _____, the sum of _____ United States Dollars ($_____). Drawn under [Issuer] Letter of Credit No. _____ dated _____.

[Issuer is hereby directed to pay the proceeds of this Sight Draft solely to the following account: _____.]

[Name and signature block, with signature or purported signature of Beneficiary]

Date: _____

ATTACHMENT 2 TO EXHIBIT E

FORM OF TRANSFER NOTICE

[BENEFICIARY LETTERHEAD]

TO:

[Name and Address of Issuer] (the "Issuer")

TRANSFER NOTICE

By signing below, the undersigned, Beneficiary (the "Beneficiary") under Issuer's Letter of Credit No. _____ dated _____ (the "L/C"), transfers the L/C to the following transferee (the "Transferee"):

[Transferee Name and Address]

The original L/C is enclosed. Beneficiary directs Issuer to reissue or amend the L/C in favor of Transferee as Beneficiary. Beneficiary represents and warrants that Beneficiary has not transferred, assigned, or encumbered the L/C or any interest in the L/C, which transfer, assignment, or encumbrance remains in effect.

[Name and signature block, with signature or purported signature of Beneficiary]

Date: _____]

EXHIBIT F

INTENTIONALLY OMITTED

EXHIBIT G

RULES AND REGULATIONS

NOTHING IN THESE RULES AND REGULATIONS ("RULES AND REGULATIONS") SHALL SUPPLANT ANY PROVISION OF THE LEASE. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THESE RULES AND REGULATIONS AND THE LEASE, THE LEASE SHALL PREVAIL.

1. No Tenant Party shall encumber or obstruct the common entrances, lobbies, elevators, sidewalks and stairways of the Building(s) or the Project or use them for any purposes other than ingress or egress to and from the Building(s) or the Project.

2. Except as specifically provided in the Lease, no sign, placard, picture, advertisement, name or notice shall be installed or displayed on any part of the outside of the Premises or the Building(s) without Landlord's prior written consent. Landlord shall have the right to remove, at Tenant's sole cost and expense and without notice, any sign installed or displayed in violation of this rule.

3. If Landlord objects in writing to any curtains, blinds, shades, screens, hanging plants or other similar objects attached to or used in connection with any window or door of the Premises or placed on any windowsill, and (a) such window, door or windowsill is visible from the exterior of the Premises and (b) such curtain, blind, shade, screen, hanging plant or other object is not included in plans approved by Landlord, then Tenant shall promptly remove such curtains, blinds, shades, screens, hanging plants or other similar objects at its sole cost and expense.

4. Deliveries shall be made no earlier than 7 a.m. or later than 6 p.m. No deliveries shall be made that impede or interfere with other tenants in or the operation of the Project. Movement of furniture, office equipment or any other large or bulky material(s) through the Common Area shall be restricted to such hours as Landlord may designate and shall be subject to reasonable restrictions that Landlord may impose. A temporary loading permit is required for all temporary parking and such permit, which permit Landlord may provide in its sole and absolute discretion.

5. Tenant shall not place a load upon any floor of the Premises that exceeds the load per square foot that (a) such floor was designed to carry or (b) is allowed by Applicable Laws. Fixtures and equipment that cause noises or vibrations that may be transmitted to the structure of the Building(s) to such a degree as to be objectionable to other tenants shall be placed and maintained by Tenant, at Tenant's sole cost and expense, on vibration eliminators or other devices sufficient to eliminate such noises and vibrations to levels reasonably acceptable to Landlord and the affected tenants of the Project.

6. Tenant shall not use any method of HVAC other than that approved in writing by Landlord.

7. Tenant shall not install any radio, television or other antennae; cell or other communications equipment; or other devices on the roof or exterior walls of the Premises except in accordance with the Lease. Tenant shall not interfere with radio, television or other digital or electronic communications at the Project or elsewhere.

8. Canvassing, peddling, soliciting and distributing handbills or any other written material within, on or around the Project (other than within the Premises) are prohibited. Tenant shall cooperate with Landlord to prevent such activities by any Tenant Party.

9. Tenant shall store all of its trash, garbage and Hazardous Materials in receptacles within its Premises or in receptacles designated by Landlord outside of the Premises. Tenant shall not place in any such receptacle any material that cannot be disposed of in the ordinary and customary manner of trash, garbage and Hazardous Materials disposal. Any Hazardous Materials transported through Common Area shall be held in secondary containment devices. Tenant shall be responsible, at its sole cost and expense, for Tenant's removal of its trash, garbage and Hazardous Materials. Tenant is encouraged to participate in the waste removal and recycling program in place at the Project.

10. The Premises shall not be used for lodging or for any improper, immoral or objectionable purpose. No cooking shall be done or permitted in the Premises; provided, however, that Tenant may use (a) equipment approved in accordance with the requirements of insurance policies that Landlord or Tenant is required to purchase and maintain pursuant to the Lease for brewing coffee, tea, hot chocolate and similar beverages, (b) microwave ovens for employees' use and (c) equipment shown on plans approved by Landlord; provided, further, that any such equipment and microwave ovens are used in accordance with Applicable Laws.

11. Tenant shall not, without Landlord's prior written consent, use the name of the Project, if any, in connection with or in promoting or advertising Tenant's business except as Tenant's address.

12. Tenant shall comply with all safety, fire protection and evacuation procedures and regulations established by Landlord or any Governmental Authority.

13. Tenant assumes any and all responsibility for protecting the Premises from theft, robbery and pilferage, which responsibility includes keeping doors locked and other means of entry to the Premises closed.

14. Tenant shall not modify any locks to the Premises without Landlord's prior written consent, which consent Landlord shall not unreasonably withhold, condition or delay. Tenant shall furnish Landlord with copies of keys, pass cards or similar devices for locks to the Premises.

15. Tenant shall cooperate and participate in all reasonable security programs affecting the Premises.

16. Tenant shall not permit any animals in the Project, other than for guide animals or for use in laboratory experiments.

17. Bicycles shall not be taken into the Building(s) (including the elevators and stairways of the Building) except into areas designated by Landlord.

18. The water and wash closets and other plumbing fixtures shall not be used for any purposes other than those for which they were constructed, and no sweepings, rubbish, rags or other substances shall be deposited therein.

19. Discharge of industrial sewage shall only be permitted if Tenant, at its sole expense, first obtains all necessary permits and licenses therefor from all applicable Governmental Authorities.

20. Smoking is prohibited inside the Building, except in designated outdoor areas of the Project (if any).

21. The Project's hours of operation are currently 24 hours per day, seven (7) days per week.

22. Tenant shall comply with all orders, requirements and conditions now or hereafter imposed by Applicable Laws or Landlord ("Waste Regulations") regarding the collection, sorting, separation and recycling of waste products, garbage, refuse and trash generated by Tenant (collectively, "Waste Products"), including (without limitation) the separation of Waste Products into receptacles reasonably approved by Landlord and the removal of such receptacles in accordance with any collection schedules prescribed by Waste Regulations.

23. Tenant, at Tenant's sole cost and expense, shall cause the Premises to be exterminated on a monthly basis to Landlord's reasonable satisfaction and shall cause all portions of the Premises used for the storage, preparation, service or consumption of food or beverages to be cleaned daily in a manner reasonably satisfactory to Landlord, and to be treated against infestation by insects, rodents and other vermin and pests whenever there is evidence of any infestation. Tenant shall not permit any person to enter the Premises or the Project for the purpose of providing such extermination services, unless such persons have been approved by Landlord. If requested by Landlord, Tenant shall, at Tenant's sole cost and expense, store any refuse generated in the Premises by the consumption of food or beverages in a cold box or similar facility.

24. If Tenant desires to use any portion of the Common Area for a Tenant-related event, Tenant must notify Landlord in writing at least thirty (30) days prior to such event on the form attached as Attachment 1 to this Exhibit, which use shall be subject to Landlord's prior written consent, not to be unreasonably withheld, conditioned or delayed. Notwithstanding anything in this Lease or the completed and executed Attachment to the contrary, Tenant shall be solely responsible for setting up and taking down any equipment or other materials required for the event, and shall promptly pick up any litter and report any property damage to Landlord related to the event. Any use of the Common Area pursuant to this Section shall be subject to the provisions of Article 28 of the Lease.

Landlord may waive any one or more of these Rules and Regulations for the benefit of Tenant or any other tenant, but no such waiver by Landlord shall be construed as a waiver of such Rules and Regulations in favor of Tenant or any other tenant, nor prevent Landlord from thereafter enforcing any such Rules and Regulations against any or all of the tenants of the Project, including Tenant. These Rules and Regulations are in addition to, and shall not be construed to in any way modify or amend, in whole or in part, the terms covenants, agreements and conditions of the Lease. Landlord reserves the right to make such other and reasonable additional rules and regulations as, in its judgment, may from time to time be needed for safety and security, the care and cleanliness of the Project, or the preservation of good order therein; provided, however, that Tenant shall not be obligated to adhere to such additional rules or regulations until Landlord has provided Tenant with written notice thereof. Tenant agrees to abide by these Rules and Regulations and any such additional rules and regulations issued or adopted by Landlord. Tenant shall be responsible for the observance of these Rules and Regulations by all Tenant Parties.

ATTACHMENT 1 TO EXHIBIT G

REQUEST FOR USE OF COMMON AREA

REQUEST FOR USE OF COMMON AREA

Date of Request: _____

Landlord/Owner: _____

Tenant/Requestor: _____

Property Location: _____

Event Description: _____

_____

_____

Proposed Plan for Security & Cleaning: _____

_____

_____

Date of Event: _____

Hours of Event: (to include set-up and take down): _____

Location at Property (see attached map): _____

Number of Attendees: _____

Open to the Public? [___] YES [___] NO

Food and/or Beverages? [___] YES [___] NO

If YES:

- Will food be prepared on site? [___] YES [___] NO
- Please describe:
- Will alcohol be served? [___] YES [___] NO
- Please describe:
- Will attendees be charged for alcohol? [___] YES [___] NO
- Is alcohol license or permit required? [___] YES [___] NO
- Does caterer have alcohol license or permit: [___] YES [___] NO [___] N/A

Other Amenities (tent, booths, band, food trucks, bounce house, etc.): _____

_____

_____

Other Event Details or Special Circumstances: _____

_____

_____

_____

_____

The undersigned certifies that the foregoing is true, accurate and complete and he/she is duly authorized to sign and submit this request on behalf of the Tenant/Requestor named above.

[*INSERT NAME OF TENANT/REQUESTOR*]

By: _____
Name: _____
Title: _____
Date: _____

EXHIBIT H

PTDM

[SEE ATTACHED]

PARKING AND TRAFFIC DEMAND MANAGEMENT

FORT WASHINGTON REALTY TRUST

47 ERIE STREET AND RELATED PARKING

CAMBRIDGE, MA

April 28, 1999

Table of Contents

I. General Project Description

The garage at 47 Eric Street (the "Garage") is being constructed and will be owned by Fort Washington Realty Trust ("FWRT") whose address is in care of Lyme Properties, 101 Main Street, 18th Floor, Cambridge, MA 02142. The Garage and 77 surface spaces located at 40 Erie Street and 270. Albany Street will provide the accessory parking spaces pursuant to the Cambridge Zoning Ordinance for 270 Albany Street, 21 Erie Street, 40 Erie Street (also known as 130 Waverly Street and Fort Washington Research Park Phase 1) and 200 Sidney Street (Fort Washington Research Park Phase 2) (together, the "Buildings"). Of these four Buildings, all but Fort Washington Phase 2 are built and occupied. All of the occupied buildings received certificates of occupancy prior to the enactment of the PTDM ordinance. The Garage contains a total of 447 accessory parking spaces. The 447 Garage spaces are allocated among the four

Buildings as follows:

	Building Square Footage	# Spaces
270 Albany Street	70,000	90
21 Erie Street	52,000	63 .
40 Erie Street (130 Waverly Street)	109,000	125
200 Sidney Street	135,000	169

The existing surface spaces serve 40 Erie Street. A "Non-Commercial Parking Space Registration Form" for the Garage and existing surface spaces at 270 Albany and 40 Erie Street (a total of 524 spaces), a copy of which is attached, was filed with the Cambridge Department of Traffic, Parking and Transportation and approved by the Director on October 28, 1997 **(Attachment 1).**

A building permit for the garage was issued November 4, 1997 (#0997154), and construction will be complete on or about April 30,1999.

The 447 accessory parking spaces in the Garage are located on six levels and served by two elevators. All of the Garage and surface spaces are employee spaces. There are no commercial spaces in the Garage or surface lots. The gross size of the garage is 121,000 gross square feet.

The tenants located in the Buildings served by the Garage and surface lots are:

- 270 Albany Street:
  - Millennium Pharmaceuticals, Inc. ("Millennium") - 200 employees
  - Plex, LLC ("Plex") - 2 employees
- 21 Erie Street:
  - Heliotrope Studios Ltd. ("Heliotrope") - 3 employees
  - Reprogensis, Inc. ("Reprogensis")-33 employees
  - TVisions, Inc. ("TVisions") - 100 employees
- 40 Erie Street:
  - Vertex Pharmaceuticals, Incorporated ("Vertex") - 261 employees
  - Millennium - 50 employees
- 200 Sidney Street:
  - Not yet leased, but expected to be 540 employees based on a projection of 4 persons per 1000 square feet

Average daily vehicle trips expected to be generated by the Buildings are set forth in the attached schedule **(Attachment 3)**.

The nearest public transit is Central Square, approximately ,7 miles away. The nearest bicycle paths or lanes are on Mass. Ave. in Central Square, along the Charles River at Memorial Drive and on the MIT campus.

Bicycle lanes are planned for the Sidney/Waverly/Vasser “Cambridge Roadway Improvements”. A site plan is attached showing the location of the Garage and the Buildings **(Attachment 4)**.

The contact person for this project is Robert L. Green, Lyme Properties 18th Floor, 101 Main St., Cambridge, MA 02142, telephone, (617) 225-0909.

II. Commitment to Mode Split

FWRT has agreed to a mode split goal of 61% for single occupancy vehicles.

III. General Transportation Demand Management Programs

A. Membership in Transportation Management Association

A Transportation Management Association is a private not-for-profit organization whose objective is to coordinate member business and other resources to improve transportation. The local organization, the Charles River Transportation Management Association (CRTMA), works with employers to develop voluntary, cost effective measures that benefit the members of the organization. The CRTMA assists businesses in developing internal transportation policies and programs that offer employees commute options at reduced costs. The CRTMA can facilitate the development of joint programs between groups of businesses. The CRTMA provides a connection with local, state and federal agencies to inform participating members of recent developments in transportation and assist in compliance with regulations. Services by the CRTMA include:

- Corporate transportation policy analysis
- Monitoring of government policy
- Guaranteed ride home program.
- RideSource car and van matching
- Information resource for commute alternative
- Marketing of commute choices
- Development of incentive programs
- Employer transportation advisor and training program
- Pedestrian and bicycle incentive program
- Local shuttle bus service for members

FWRT or an affiliate will join the CRTMA. FWRT will include provisions in all future tenant leases informing them of the programs available under the CRTMA and encouraging participation by tenants.

B. Guaranteed Ride Home

Many employees drive to work because of concern that they cannot get home quickly in the event of an emergency or need a car for unexpected travel. Either directly or through its leases with tenants, FWRT will provide a guaranteed ride home to employees in such an event. The attached CRTMA Guaranteed Ride Home Program or a similar one will be provided **(Attachment 5).**

C. Employee Transportation Coordinator

FWRT will designate a full-time employee as Employee Transportation Coordinator (ETC) to assist in the day to day administration of TDM programs. The ETC will be responsible for coordination with CRTMA and tenants and staffing an on-site commuter services desk that will sell transit passes, tokens, and commuter checks; distribute marketing materials; and administer the guaranteed ride home program.

D. Initial Tenant Survey

In all future tenant leases, FWRT will include a provision encouraging tenants to provide an initial survey upon occupancy including information about the characteristics and attitudes of employees and customers in order to refine existing TDM programs and develop new ones.

E. lectric Vehicle Recharging Facility

Promptly upon a request therefor by any tenant or employee of the Buildings, FWRT will install an electric vehicle recharging facility in the garage and will distribute information on the availability and use to tenants and visitors.

IV. Alternative Mode Promotions and Incentives

A. MBTA Corporate Pass Program and Subsidized Transit Passes

On-site sales of MBTA transit passes and commuter vouchers through the MBTA Corporate Pass Program will begin after at least 50% of the tenants have occupied 200 Sidney Street. Working with MBTA and CARAVAN, unsold passes will be carried over into the next month or returned for credit on future purchases. Sales will be monitored for several months to establish the appropriate number of passes to be purchased in subsequent months. FWRT will exercise reasonable efforts to negotiate lease provisions in future leases regarding tenants who do not presently subsidize MBTA passes to do so in the future. .

B. Participation in Private Bus Shuttle Service

FWRT has also met with CRTMA to discuss establishing shuttle service for the Buildings. The current CRTMA routes do not provide service to the Red Line or Central Square. With new membership and additional shuttle participation by its members, CRTMA has indicated that it might assume responsibility for operating shuttles that could provide service between the buildings and Central Square. However, because leases for substantially all of the space in the Buildings are already in effect and shuttle costs cannot be passed on tenants, FWRT is not able to unconditionally commit to such service unless it can be provided cost efficiently and the tenants voluntarily agree to pay for it. However working with CRTMA, FWRT will exercise reasonable efforts to convince tenants to participate and implement Red Line shuttle service.

C. Green Line Shuttle Study

Within twelve months of 90% occupancy of 200 Sidney Street, FWRT or CRTMA will complete a study on the feasibility of providing service connecting the Buildings to the B, C, and D Green Line branches. This study will be undertaken by FWRT alone or in combination with others including perhaps tenants of the Buildings or CRTMA and will include estimates of demand and cost. The study will be presented to the PDTM Planning Officer along with FWRT's recommendations

D. Ridesharing Vehicles

FWRT will provide up to 10% of accessory parking in convenient locations in order to encourage ridesharing. The actual number of spaces will be adjusted based on usage, but additional preferential spaces will be available as needed for new ridesharing vehicles. The Employee Transportation Coordinator will administer, monitor, and adapt the preferential parking as needed. All site employees will be provided with access to CARAVAN for Commuter's Ridesource regional ridesource matching database. Also, a project ridematching database will be developed.

E. Bicycle and Pedestrian Programs:

FWRT will provide secure bicycle parking in the garage and in exterior locations and such garage bicycle parking will be covered and secured. No less than the minimum parking required by zoning will be provided. Short term bicycle parking will be provided near building entrances for visitors, customers, and couriers.

Set forth below is a chart summarizing existing TDM programs for the Garage and lots:

	Millennium	Vertex	TVisions 4	FWRTon behalf of 200 Sidney
Shuttle Participation	✓			
MBTA Pass Program[1]	✓			✓
Guaranteed Ride Home[2]	✓			✓
Carpooling and Caravan Ride matching				✓
Flexible Work Schedules	✓	✓		
Publicity and Marketing				✓
Bicycles/Racks/Showers	✓	✓		✓
Discount and Preferential Parking for Vanpools and Carpools				✓
Financial Incentives[3]	✓			

In all cases the TDM measures described hereunder will be implemented by FWRT, individual building owners, or the tenants of the Buildings.

V. Alternative Work Programs

FWRT will include provisions in all leases giving tenants information on the advantages and benefits of telecommuting, flexible lime and compressed work week programs and encouraging tenants to work directly with the City of Cambridge on such programs.

1. Millennium offers full paymenl up $60 per month, deducted form paychecks bcfore taxes.

2. Millennium also offcers flee taxi vouchers for meetings.

3. Millenniulll offers $100 per quarter to employces who elect not to commute by public transit or car.

4. 21 Erie Slreet tenants of 35 or less cmployees excluded.

Department of Traffic, Parking and Transportation
57 Inman Street
Cambridge, MA 02139

Non- Commercial Parking Space Registration Form

Name and address of property owner FORT WASHINGTON REALTY TRUST [ILLEGIBLE] MCNEIL MGMT., 320 NORWOOD PARK SOUTH, NORWOOD MA 02062 Telephone 617 762 4800

Name & address of parking facility operator SAME Telephone

Name and address of facility 47 ERIE ST GARAGE, 47 ERIE ST, CAMBRIDGE MA 0213 Telephone

[ILLEGIBLE]

Type of facility:
(Check one)

o Lot

☒ Garage

Start of construction: Month 10 Day 30 Year 97

Opening of facility: Month 6 Day 1 Year 97

Type of request:
(Check one)

☒ New facility

o Modified facility

Type of Parking Spaces:	Number of parking spaces Existing	Proposed		Type:	Number of parking spaces Existing	Proposed
Residential				Commercial		
Employee	14	447	47[ILLEGIBLE]	Patient		
	15	15	270[ILLEGIBLE]			
Customer	254	62	40[ILLEGIBLE]	Student		
Client				Guest		

[ILLEGIBLE] have any existing parking facility permits? Yes ☒ No o

[ILLEGIBLE] type of permit and date issued. SEE ATTACHED LETTER FROM LAUREN PRESTON DATED JAN 27, 1995

Enforcement Actions Against the Parking Facility:

Departments who have taken action: NONE KNOWN

Departments who have action pending: NONE KNOWN

hereby certify that a commercial parking permit has been obtained for each space being used for commercial parking. None of the other existing or proposed parking spaces at this parking facility have been or will be available as commercial parking spaces until a commercial parking permit therefor has been obtained. I also certify that all information supplied on this form is true , accurate and complete.

David Clem Trustee
Operator Signature & Title

David Clem Trustee
Print Name (Owner) & Title

David Clem Trustee
Operator Signature & Title

David Clem Trustee
Print Name (Oerator) & Title

FOR TRAFFIC, PARKING AND TRANSPORTATION DEPARTMENT USE ONLY

ATTACHMENT

DO NOT WRITE BELOW THIS LINE

Date Received: 10/22/97 Comments: Elimination of 14 surface lot spaces at 47 Erie St. to construct a 6 level 447 space garage plus elimination of 220 surface lot spaces at 40 Erie St. to construct a 4 story office/ R+D building. Also the reconfiguration of surface lot spaces for existing building at 40 Erie St. and maintains existing spaces, at 40 Erie St. and 270 Albany St.

Category: o Residential☒ Non-Residential or Non-Commercial

Number of parking spaces approved :

_____ residential

524 non-residential or non-commercial

Approved: Sig E. Clipping Date: 10-28-97

Traffic Director

Additional Comments:

447 Garage spaces at 47 Erie St.

62 Lot spaces at 40 Erie St.

5 Garage spaces at 270 Albany St.

10 Lot spaces at 270 Albany St.

524 Total spaces for use

Attachment 2

Certification

I hereby certify that a commercial parking permit has been obtained for each space being used for commercial parking. None of the other existing or proposed parking spaces at this parking facility have been or will be available as commercial parking spaces until a commercial parking permit therefor has been obtained.

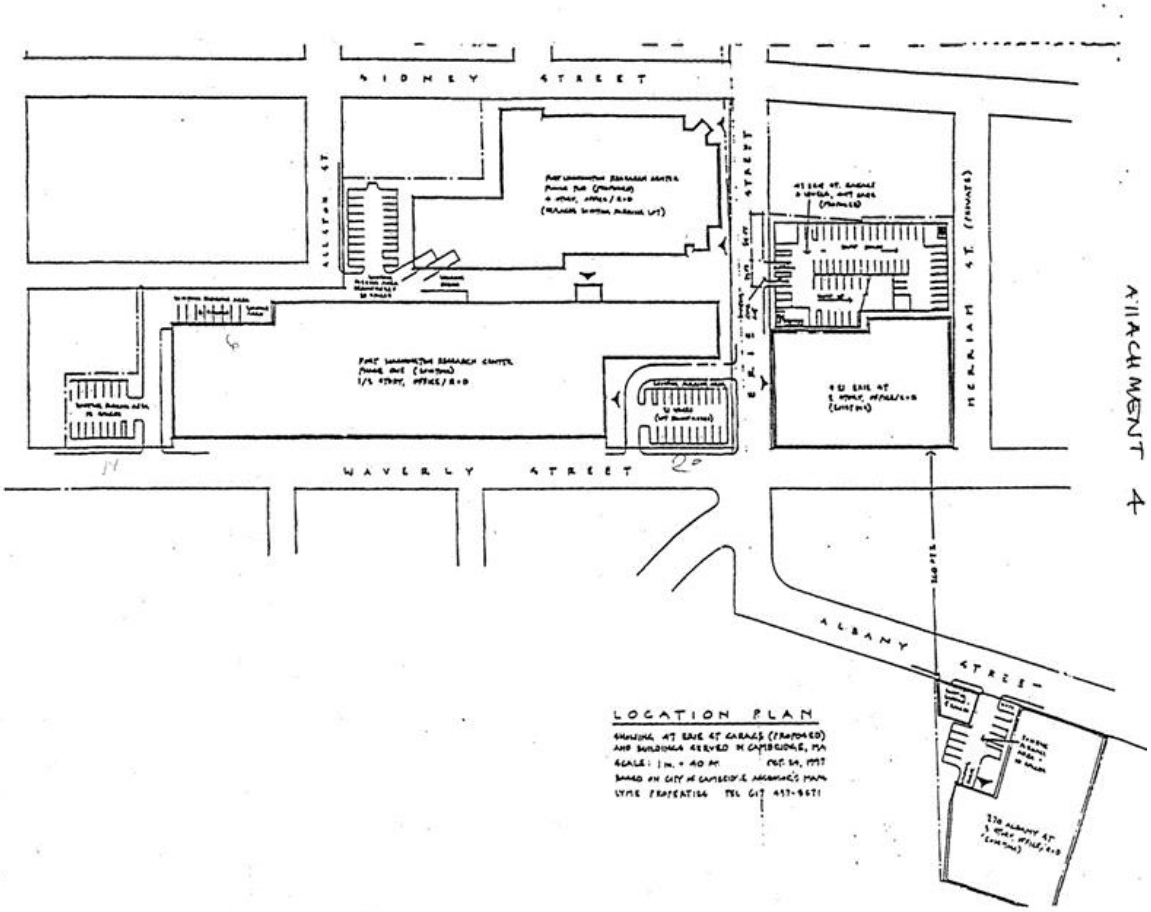
Fort Washington Realty Trust
\s\ David M. Roby, Trustee
David M. Roby, Trustee
Date 3/11/99

Attachment 3

Vehicle Trips

337,000 SF of lab space @ ITE 760	= 2,782 trips/day
20,000 SF of office @ ITE 710	= 386 trips/day
Total trips	= 3168 trips/day
3168 x 65.6	= 2078 trips/day

ATTACHMENT 4



CHARLES RIVER TRANSPORTATION MANAGEMENT ASSOCIATION

c / o Cambridge
Technology Partners
304 Vassar Street
Cambridge, MA 0 2139
Phone 617*679*5381 Fax 617*374*8300
email coinl@mit.edu

By Fax 5 Pages

April 21, 1999

Joseph Barr
TDM Planner
City of Cambridge
Community Development
57 Inman St.
Cambridge, MA 02139

Dear Joe:

Please find attached generic documentation for Charles River Transportation Management Association's Guaranteed Ride Home program.

In the past few weeks, we have worked with a number of businesses and developers who are in the process of preparing IPOP or PTDM plans. Many of these entities have indicated they will join CRTMA, and rely on us forGuaranteed Ride Home program.

The attached policies and procedures will provide you with an overview of how our program will work. The policy and procedure will be reviewed, and may be modified based on the needs of different CRTMA members but I anticipate programs will be substantially the same.

Perhaps we should revisit City of Cambridge participation in CRTMA. We would be very interested in implementing a Guaranteed Ride Home program, and other TDM measures for city employees as well!

I will call to answer any questions that you may have about Guaranteed Ride Home.

Sincerely,

Jim Gascoigne
Executive Director

cc Tom Lucey
Tom Ragno
Debbie Black
Joan Peyrebrune
Bob Green

Set forth below is a chart summarizing existing TDM programs for the Garage and lots:

	Millennium	Vertex	TVisions 4	FWRTon behalf of 200 Sidney
Shuttle Participation	✓			
MBTA Pass Program[1]	✓			✓
Guaranteed Ride Home[2]	✓			✓
Carpooling and Caravan Ride matching				✓
Flexible Work Schedules	✓	✓		
Publicity and Marketing				✓
Bicycles/Racks/Showers	✓	✓		✓
Discount and Preferential Parking for Vanpools and Carpools				✓
Financial Incentives[3]	✓			

In all cases the TDM measures described hereunder will be implemented by FWRT, individual building owners, or the tenants of the Buildings,

V. Alternative Work Programs

FWRT will include provisions in all leases giving tenants information on the advantages and benefits of telecommuting, flexible time and compressed work week programs and encouraging tenants to work directly with the City of Cambridge on such programs.

1. Millennium offers full payment up to $560 per "month, deducted form paychecks before taxes.
2. Millennium also offers free taxi vouchers for meetings.
3. Millennium offers 100 per quarter to employees who elect not to commute by public transit or car.
4. 21 Eric Street tenants of 35 or less employees excluded.

VI. Parking Management and SOV Disinceutives

FWRT will control access to the Garage by issuance of access cards and control devices installed at entrances to the Garage.

VI Marketing Programs

A. New Employees

FWRT will compile material and information on each of these measures and provide all of its tenants' employees with a commute alternatives "packet." In addition to information on each measure, the packet will include a set of guidelines explaining available options and how to establish an in-house TDM program and/or benefits of participating in the local transportation management association. The packet will also include public transportation schedules, bicycle path information, location of on-site bicycle parking and location of changing/showering facilities.

B. Commuter Newsletter

FWRT will distribute a quarterly newsletter focusing on alternative commuting. The newsletter will include information on existing the new TDM programs, discuss advantages of alternative modes, provide maps of transit and shuttle bus routes, provide a question and answer section, and provide phone numbers addresses and website addresses for alternative commute resources and programs. FWRT will designate an individual responsible for the production and distribution of the newsletter, or contract the task to a third party such as CRTMA.

C. Website

FWRT or CRTMA will develop and maintain a website devoted to alternative commute programs and measures or containing a section devoted to alternative commuting. At a minimum, the website will describe the programs, resources and measures provided to

FWRT tenants and contain links to other websites such as City of Cambridge, MBTA and CARAVAN for Commuters that provide alternative commuter services and information.

D. Promotion of Transportation Fair/Events

FWRT will notify its tenants (via flyers or posting at kiosk, bulletin boards, etc.) of upcoming transportation fairs and events organized by others as the schedules for such events become available. FWRT or CRTMA will organize an on-site transportation information fair at least once a year.

E. Commuter Information Centers

Commuter Information Centers, including bus schedules and maps, ridesharing marketing forms and information about the guaranteed ride home program, will be created in a central location on site.

Vll Monitoring and Reporting Plan

The monitoring and reporting plan will include the following:

- Yearly mode split surveys, including questions about attitudes and suggestions 4/26/99 for new programs.
- Bi-yearly driveway and parking occupancy counts (starting with the first year of occupancy).
- Commitment to report this information to the city on a yearly basis for use in determining whether the project is meeting its mode split commitment.

IX. Office of Workforce Development Commitment

FWRT commits to work with the Cambridge Office of Workforce Development.

X. Corporate Office Certification

Attached is the Corporate Office Certification concerning commercial parking (Attachment 2).

EXHIBIT I

TENANT'S PERSONAL PROPERTY

EXHIBIT J

FORM OF ESTOPPEL CERTIFICATE

To: BMR-Sidney Research Campus LLC
17190 Bernardo Center Drive
San Diego, California 92128
Attention: Vice President, Real Estate Legal

BioMed Realty, L.P.
17190 Bernardo Center Drive
San Diego, California 92128

Re: [PREMISES ADDRESS] (the "Premises") at 200 Sidney Street, Cambridge, Massachusetts (the "Property")

The undersigned tenant ("Tenant") hereby certifies to you as follows:

1. Tenant is a tenant at the Property under a lease (the "Lease") for the Premises dated as of [___], 20[__]. The Lease has not been cancelled, modified, assigned, extended or amended [except as follows: [___]], and there are no other agreements, written or oral, affecting or relating to Tenant's lease of the Premises or any other space at the Property. The lease term expires on [___], 20[__].

2. Tenant took possession of the Premises, currently consisting of [___] square feet, on [___], 20[__], and commenced to pay rent on [___], 20[__]. Tenant has full possession of the Premises, has not assigned the Lease or sublet any part of the Premises, and does not hold the Premises under an assignment or sublease [, except as follows: [___]].

3. All base rent, rent escalations and additional rent under the Lease have been paid through [___], 20[__]. There is no prepaid rent [, except $[___]][, and the amount of security deposit is $[___] [in cash][OR][in the form of a letter of credit]]. Tenant currently has no right to any future rent abatement under the Lease.

4. Base rent is currently payable in the amount of $[___] per month.

5. Tenant is currently paying estimated payments of additional rent of $[___] per month on account of real estate taxes, insurance, management fees and Common Area maintenance expenses.

6. All work to be performed for Tenant under the Lease has been performed as required under the Lease and has been accepted by Tenant[, except [___]], and all allowances to be paid to Tenant, including allowances for tenant improvements, moving expenses or other items, have been paid.

7. The Lease is in full force and effect, free from default and free from any event that could become a default under the Lease, and Tenant has no claims against the landlord or offsets or defenses against rent, and there are no disputes with the landlord. Tenant has received no notice of prior sale, transfer, assignment, hypothecation or pledge of the Lease or of the rents payable thereunder[, except [___]].

8. [Tenant has the following expansion rights or options for leasing additional space at the Property: [___].][OR][Tenant has no rights or options to purchase the Property.]

9. To Tenant's knowledge, no hazardous wastes have been generated, treated, stored or disposed of by or on behalf of Tenant in, on or around the Premises or the Project in violation of any environmental laws.

10. The undersigned has executed this Estoppel Certificate with the knowledge and understanding that [INSERT NAME OF LANDLORD, PURCHASER OR LENDER, AS APPROPRIATE] or its assignee is [acquiring the Property/making a loan secured by the Property] in reliance on this certificate and that the undersigned shall be bound by this certificate. The statements contained herein may be relied upon by [INSERT NAME OF PURCHASER OR LENDER, AS APPROPRIATE], BMR-Sidney Research Campus LLC, BioMed Realty, L.P., BioMed Realty Trust, Inc., and any [other] mortgagee of the Property and their respective successors and assigns.

Any capitalized terms not defined herein shall have the respective meanings given in the Lease.

Dated this [___] day of [___], 20[__].

[___],
a [___]

By: _____

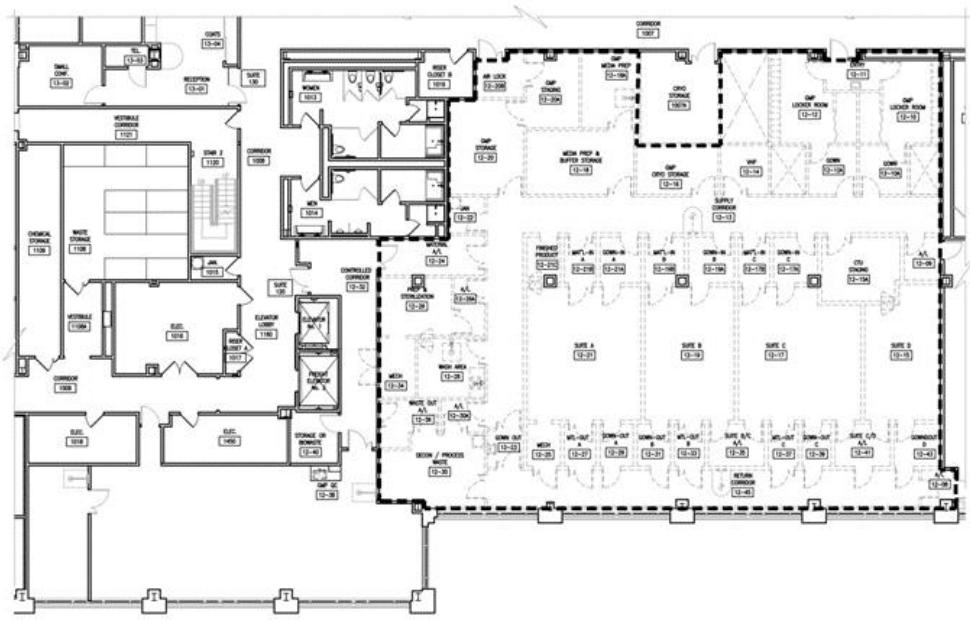
Name: _____

Title: _____

EXHIBIT K

SURRENDER CONDITION OF MANUFACTURING AREA

[SEE ATTACHED]



GENERAL DEMOLITION NOTE & LEGEND

A DEMOLITION AS INDICATED: REMOVE ALL FLOORING DOWN TO CONCRETE SLAB. REMOVE ALL FINISH CEILINGS, INCLUDING LIGHTING, CEILING DEVICES. REMOVE ALL VINYL BASE FROM ETR WALLS AND CASEWORK. PREP SUBFLOOR AND ETR WALLS/CASEWORK TO RECEIVE NEW FINISH. ALSO RETAIN/PROTECT ALL PERIMETER GYPSUM WALLBOARD WINDOW SOFFITS/SILLS; RETAIN/PROTECT EXISTING WINDOW TREATMENT; RETAIN ALL COLUMN ENCLOSURES, U.N.O.

EXISTING CONSTRUCTION TO BE REMOVED

MEP/FP DEMOLITION NOTES

1. REMOVE ALL MANUFACTURING AREA AIR HANDLERS AND ASSOCIATED DUCTWORK, DIFFUSERS AND GRILLES. CAP CHW, HW, AND STEAM PIPING AT MAINS. REMOVE ALL CONDENSATE DRAIN PIPING.
2. REMOVE ALL WALL MOUNTED DEVICES AND EQUIPMENT, INCLUDING BUT NOT LIMITED TO SWITCHES, FIRE ALARM, RECEPTACLES, THERMOSTATS, SENSORS, VHP ALARMS AND INDICATORS, AND CONTROLS. REMOVE WIRING BACK TO SOURCE OR CONTROL PANEL AND MAKE SAFE.
3. TURN SPRINKLER DROPS UPRIGHT AND REPLACE PENDANT SPRINKLERS WITH UPRIGHT TYPE.
4. REMOVE PLUMBING FIXTURES. CUT AND REMOVE WATER PIPING FROM FIXTURES AND CAP AT MAINS. CUT AND REMOVE WASTE AND VENT PIPE AND CAP AT RISERS.
5. REMOVE PIPING AND ACCESSORIES FOR LABORATORY GASES BACK TO SOURCE AND CAP PIPING.
6. REMOVE LIGHT FIXTURES AND EXIT SIGNS, AND REMOVE POWER WIRING BACK TO SOURCE AND MAKE SAFE.
7. REMOVE POWER FEEDS TO ANY REMOVED EQUIPMENT BACK TO POWER SOURCE AND MAKE SAFE.
8. MODIFY CONTROL SYSTEMS AS NEEDED TO ELIMINATE EQUIPMENT OR SYSTEMS REMOVED, AND LEAVE ETR EQUIPMENT AND CONTROLS OPERATING AS INTENDED.

Manufacturing Area - Restoration Plan

200 Sidney Street, First Fl. Cambridge, Massachusetts

R.E. Dinneen Architects & Planners, Inc.

BioMed Realty
Discover here.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-205253) of Seres Therapeutics, Inc. of our report dated March 14, 2016 relating to the financial statements, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 14, 2016

Exhibit 31.1

CERTIFICATIONS

I, Roger J. Pomerantz, certify that:

1. I have reviewed this Annual Report on Form 10-K of Seres Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) [OMITTED];

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 14, 2016

By: /s/ Roger J. Pomerantz
Roger J. Pomerantz
President, Chief Executive Officer and Chairman of the Board
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Eric D. Shaff, certify that:

1. I have reviewed this Annual Report on Form 10-K of Seres Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) [OMITTED];

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 14, 2016

By: /s/ Eric D. Shaff
Eric D. Shaff
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Roger J. Pomerantz, President and Chief Executive Officer of Seres Therapeutics, Inc. (the "Company"), hereby certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) The Annual Report on Form 10-K of the Company for the period ended December 31, 2015 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 14, 2016

/s/ Roger J. Pomerantz
Roger J. Pomerantz
President, Chief Executive Officer and Chairman of the Board
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Eric D. Shaff, Executive Vice President and Chief Financial Officer of Seres Therapeutics, Inc. (the "Company"), hereby certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) The Annual Report on Form 10-K of the Company for the period ended December 31, 2015 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 14, 2016

/s/ Eric D. Shaff
Eric D. Shaff
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)