UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

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

For the fiscal year ended December 31, 2013

OR

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

For the transition period from _____ to _____

Commission File Number: 001-35994

HEAT BIOLOGICS, INC.

(Name of small business issuer in its charter)

Delaware	**26-2844103**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification Number)*
100 Europa Drive, Suite 420 **Chapel Hill, NC**	**27517**
(Address of principal executive offices)	*(Zip Code)*

(919) 240-7133
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	**Name of each exchange on which registered**
Common Stock, $0.002 par value per share	NASDAQ

Securities registered pursuant to Section 12(g) of the Act:
None

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

Indicate by check mark whether the issuer: (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 ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of issuer'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 has submitted electronically and posted on its corporate website, if any, every interactive data file required to be submitted and posted pursuant to Rule 405 of Regulation S-T (section 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 ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated file, a non-accelerated file, 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. (Check one):

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

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

The aggregate market value of the registrant′s common stock held by non-affiliates of the registrant as of March 27, 2014, was approximately $29,384,995 based on $6.64, the price at which the registrant′s common stock was last sold on that date. The registrant has provided this information as of March 27, 2014 because its common stock was not publicly traded as of the last business day of its most recently completed second fiscal quarter.

As of March 31, 2014, the issuer had 6,452,341 shares of common stock outstanding.

Documents incorporated by reference: None.

HEAT BIOLOGICS, INC.

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PART I

Forward-Looking Statements

Most of the matters discussed within this report include forward-looking statements on our current expectations and projections about future events. In some cases you can identify forward-looking statements by terminology such as "may," "should," "potential," "continue," "expects," "anticipates," "intends," "plans," "believes," "estimates," and similar expressions. These statements are based on our current beliefs, expectations, and assumptions and are subject to a number of risks and uncertainties, many of which are difficult to predict and generally beyond our control, that could cause actual results to differ materially from those expressed, projected or implied in or by the forward-looking statements. Such risks and uncertainties include the risks noted under "Item 1A Risk Factors." We do not undertake any obligation to update any forward-looking statements. Unless the context requires otherwise, references to "we," "us," "our," and "Heat Biologics," refer to Heat Biologics, Inc. and its subsidiaries.

Item 1. *Business*

Overview

We are a development stage biopharmaceutical company engaged in the development of novel allogeneic, "off-the-shelf" cellular therapeutic vaccines to combat a wide range of cancers and infectious diseases. Our proprietary *ImPACT*™ Immune Pan Antigen Cytotoxic Therapy is being designed to deliver live, genetically-modified, irradiated human cells which are reprogrammed to "pump out" a broad spectrum of cancer-associated antigens together with a potent immune adjuvant called "gp96" to educate and activate a cancer patient's immune system to recognize and kill cancerous cells. We intend for our *ImPACT* cells to secrete an antigen-adjuvant complex that generates anti-cancer immune responses in patients by mobilizing and activating cytotoxic "killer" T cells that target multiple cancer antigens, thus harnessing a patient's own immune system to fight cancer.

Unlike autologous or "personalized" therapeutic vaccine approaches which require extraction and processing of cancer or blood from each individual patient, our *ImPACT* therapeutic vaccine uses a master cell line containing a host of known and unknown tumor associated antigens to mass-produce a single vaccine product applicable to all patients with a particular cancer type. We believe our off-the-shelf, allogeneic immunotherapy offers logistical, manufacturing and cost of goods benefits compared to autologous patient-specific approaches.

Our most advanced product candidates are HS-110 and HS-410.

HS-110

We have submitted a Phase 2 protocol to our open IND in non-small cell lung cancer (NSCLC) patients with our therapeutic vaccine candidate HS-110 (viagenpumatucel-L). HS-110 is a biologic product which consists of a lung cancer cell line that has been genetically modified using our *ImPACT* technology platform to secrete a wide range of lung cancer associated antigens bound to a gp96 adjuvant and is designed to activate a T-cell mediated pan-antigen immune response against the patient's cancer. The Phase 2 trial will evaluate HS-110 in combination with low dose cyclophosphamide followed by sequential chemotherapy versus chemotherapy alone in third-line NSCLC patients. The trial will enroll 123 patients at approximately 20-30 investigative centers over 24 months. We anticipate recruitment to begin in the third quarter of 2014.

The inventor of the *ImPACT* technology that we license recently reported results from a Phase 1 open-label, single center clinical trial of HS-110 in patients with advanced NSCLC. We believe the results provide clinical evidence that HS-110 is capable of generating anti-cancer immune responses. Eighteen patients were vaccinated, and 15 of the 18 vaccinated patients completed the first course of three planned courses of therapy. Two patients completed all three planned courses of therapy (defined as three, six week treatment cycles).

HS-110 showed no overt toxicity. There were no serious adverse events (SAEs) that were considered by the trial investigator to be treatment-related. Most of the adverse events (AEs) were reported as mild or moderate (grade 1 or 2) with the most frequent being skin induration and rash that were transitory and usually resolved in 1 to 2 weeks. HS-110 provides evidence of a CD8-CTL IFN- γ immune response in patients with advanced NSCLC. In 11 of the 15 patients (73%) that completed the first course of therapy with HS-110, there was a twofold or greater increase in CD8 cells secreting interferon gamma (CD8-CTL IFN- γ). These patients also exhibited an estimated median survival of 16.5 months (95% CI:7.1-20.0). In contrast, 4 patients were immune non-responders and survived 2.1, 2.3, 6.7, and 6.7 months, or a median survival of 4.5 months, which is consistent with the expected survival times in this patient population. The protocol required that we look for such responses, but, as is typical in immunotherapy, no partial or complete tumor responses were observed. The median one-year overall survival rate of patients in the study was 44% (95% CI:21.6-65.1), comparing favorably to a 5.5% rate based on published data from a 43-patient advanced lung cancer population. One of the late-stage lung cancer patients survived over four years since starting the therapy and another patient survived over three years since starting the therapy. These findings were consistent with multiple pre-clinical published studies on *ImPACT* therapy.

HS-410

We have initiated dosing in a Phase 1/2 bladder cancer trial with HS-410. HS-410 is a biologic product which consists of a bladder cancer cell line which has been genetically modified using our *ImPACT* technology platform to secrete a wide range of bladder cancer antigens bound to a gp96 adjuvant and is designed to activate a T-cell mediated pan-antigen immune response against the patient's bladder cancer. To date, we have dosed 1 patient in our 93-patient, Phase 1/2 trial to examine safety, tolerability, immune response and preliminary clinical activity of HS-410 in patients with high risk, superficial bladder cancer who have completed surgical resection and 3-6 weekly intravesical bacillus Calmette-Guérin (BCG) immunotherapy installations. We anticipate including approximately 10-15 clinical sites with an enrollment period of 18-24 months. Patient recruitment began in December 2013.

Additional Indications

We continue to evaluate other indications for our *ImPACT* therapeutic vaccines and have developed a cell line for ovarian cancer and one for triple negative breast cancer. Our decision to further pursue either of these two product candidates or any additional product candidates other than our two lead product candidates will be based in part upon available funding and partnering opportunities. To date, in excess of $14,000,000 of funding has been awarded to the primary inventor of the technology we license by the National Institutes of Health (NIH) and through other research and clinical grants, which has been used to further develop our *ImPACT* technology platform that we license. We have little control over the direction of the NIH grant funds that have been received by the primary inventor of the technology we license and since payment is made to the inventors as opposed to us we do not recognize any revenue from such grant funds nor do they fund any expenses that we incur. Although earmarked for further development of the technology that we license, any funds awarded to the primary inventor are used in his discretion and we have little control over his use of the funds. The NIH is also currently fully funding the primary inventor's study of an HS-HIV product candidate in non-human primates with a therapeutic and prophylactic vaccine for the treatment and prevention of HIV utilizing the *ImPACT* approach.

The table below summarizes our current product candidates and their stages of development:

Product Candidate	Indication	Phase of Development	Upcoming Milestone(s)
HS-110	Non-Small Cell Lung Cancer (NSCLC)	Open commercial IND	2014 - Initiate Phase 2
HS-410	Bladder Cancer Adjuvant	Enrolling patients	2015 - Report Phase 1 data on immune response and safety

ImPACT Therapy—Novel Pan-Antigen Immune Activation

Our *ImPACT* therapy is a novel technology platform designed to educate and stimulate the immune system to combat specific disease targets, such as cancer cells. *ImPACT* utilizes live attenuated, human-derived, genetically-modified cells to generate an array of tumor associated antigens and secrete an essential immunostimulatory protein called "gp96-Ig". The secreted proteins are designed to generate an immune response against cancer cells by mobilizing and activating a patient's own killer T cells to target a broad array of different tumor antigens with the goal of eliminating cancer cells. In contrast with other vaccine technologies that target only one antigen, *ImPACT's* pan-antigen approach which may enable the body to induce and maintain an immune response against a broad array of tumor-specific proteins, by potentially providing a more robust and sustained immune response and limiting cancer cells' ability to evade the immune system. We believe the clinical and pre-clinical results suggest that *ImPACT* generates anti-tumor immune responses capable of targeting and destroying tumors. We believe our novel, off-the-shelf, live cell therapy has the potential to be used to not only combat a wide range of cancers, but also against various infectious diseases, such as hepatitis C, malaria and HIV, for which non-human primate studies, which we believe are encouraging, have been completed. We have leveraged our existing infrastructure by developing additional product candidates in areas where we can use our proprietary technology. Our success will depend on the clinical and regulatory success of our product candidates and our ability to retain, on commercially reasonable terms, financial and managerial resources, which are currently limited. To date, we have not received regulatory approval for any of our product candidates or derived any revenues from their sales. Moreover, there can be no assurance that we will ever receive regulatory approval for any of our product candidates or derive any revenues from their sales. We should have sufficient capital to operate the company for at least 12 months.

Our Product Candidates and Clinical Development Programs

Our development program involves testing our *ImPACT* -based product candidates against a number of disease targets, including non-small cell lung cancer and bladder cancer. We have submitted our Phase 2 clinical trial protocol for HS-110, our lead drug candidate, against non-small cell lung cancer (NSCLC) to FDA and intend to initiate the trial in the third quarter of 2014. Our Phase 2 trial will expand upon the Phase 1 results obtained by the primary inventor as described below. In the fourth quarter of 2013, we initiated a Phase 1/2 clinical trial against bladder cancer using our HS-410 drug candidate. We plan to utilize this vaccine to delay or prevent the recurrence of bladder cancer in post-resected bladder cancer patients.

Our History

We were incorporated under the laws of the State of Delaware on June 10, 2008. Our principal offices are located at 100 Europa Drive, Suite 300, Chapel Hill, NC 27517. Our website address is www.heatbio.com. The information contained in, and that can be accessed through, our website is not incorporated into and is not a part of this report.

We make available on our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K as soon as reasonably practicable after those reports are filed with the SEC. The following Corporate Governance documents are also posted on our website: Code of Conduct, Code of Ethics for Financial Management and the Charters for the Audit Committee, Compensation Committee and Nominating Committee of the Board of Directors. Our phone number is (919) 240-7133 and our facsimile number is (919) 305-8566. Our filings may also be read and copied at the SEC's Public Reference Room at 100 F Street NE, Room 1580 Washington, DC 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that website is www.sec.gov.

References to Heat Biologics also include references to our subsidiaries Heat Biologics I, Inc. (of which we own a 92.5% interest), Heat Biologics III, Inc., Heat Biologics IV, Inc. and Heat Biologics GmbH unless otherwise indicated. In June 2012, we divested our 92.5% interest in Heat Biologics II, Inc., which resulted in Heat Biologics II, Inc. being classified as discontinued operations in our consolidated financial statements for the years ended December 31, 2012. On May 30, 2012, we formed two wholly-owned subsidiaries, Heat Biologics III, Inc. and Heat Biologics IV, Inc. We assigned our proprietary rights related to the development and application of our *ImPACT* Therapy for the treatment of non-small lung cancer to Heat Biologics III, Inc. and our proprietary rights related to the development and application of our *ImPACT* Therapy to the treatment of bladder cancer to Heat Biologics IV, Inc.

Strategy

Our objective is to become a leading biopharmaceutical company specializing in the development and commercialization of allogeneic, off-the-shelf therapeutic vaccines. We are focused on discovering, developing and applying our core platform *ImPACT* technology towards a number of disease indications. The key elements of our strategy are:

- *Develop and obtain regulatory approval for our ImPACT-based products*. We plan to initiate a Phase 2 clinical trial in NSCLC in Q3-2014 and are currently conducting a Phase 1/2 clinical trial in bladder cancer, which we initiated in Q4-2013. After NSCLC and bladder cancers, depending upon funding and partnering opportunities, we plan to initiate additional clinical trials and in some cases expand current clinical trials against these and other disease targets utilizing our *ImPACT* technology platform.

- *Maximize commercial opportunity for our ImPACT technology*. Our product candidates target large markets with significant unmet medical needs. For each of our product candidates, we seek to retain all manufacturing, marketing and distribution rights which should give us the ability to maximize the economic potential of any future U.S. or international commercialization efforts. We believe that we should be well positioned to successfully commercialize our product candidates independently or through U.S. and international corporate partnerships.

- *Enhance our partnering efforts*. We are continually exploring partnerships for licensing and other collaborative relationships and remain opportunistic in seeking strategic partnerships.

- *Further expand our broad patent portfolio.* We have made a significant investment in the development of our patent portfolio to protect our technologies and programs, and we intend to continue to do so. We have obtained exclusive rights to five different patent families directed to therapeutic compositions and methods related to our vaccine platform and preclinical development programs for cancer. These families comprise six PCT applications, ten issued patents, two allowed patent applications, and forty-eight pending patent applications. These patents and applications cover the United States, Europe, and Japan as well as several other countries having commercially significant markets.

- *Manage our business with efficiency and discipline.* We believe we have efficiently utilized our capital and human resources to develop and acquire our product candidates and programs, and create a broad intellectual property portfolio. We operate cross-functionally and are led by an experienced management team with backgrounds in developing and commercializing product candidates. We use project management techniques to assist us in making disciplined strategic program decisions and to attempt to limit the risk profile of our product pipeline.

- *Obtain additional grant funding*. To more fully develop our *ImPACT* technology platform and its application to a variety of human diseases, we plan to continue to seek and access external sources of grant funding on our own behalf and in conjunction with our academic and other partners to support the development of our pipeline programs. While we intend to work with our academic partners to secure additional grant funding, these partners have no obligation to work with us to secure such funding. We also intend to continue to evaluate opportunities and, as appropriate, acquire or license technologies that meet our business objectives.

- *Continue to both leverage and fortify our intellectual property portfolio.* We believe that we have a strong intellectual property position relating to the development and commercialization of our *ImPACT* technology platform. We plan to continue to leverage this portfolio to create value. In addition to fortifying our existing intellectual property position, we intend to file new patent applications, in-license new intellectual property and take other steps to strengthen, leverage, and expand our intellectual property position.

Disease Targets and Markets

The Oncology Market

The American Cancer Society estimates that 1.66 million people in the U.S. will be diagnosed with cancer in 2013. The lifetime probability of being diagnosed with an invasive cancer is 45% for men and 38% for women. It is projected that 580,350 Americans will die from cancer in 2013.

Despite continuous advances made in the field of cancer research every year, there remains a significant unmet medical need as the overall five-year survival rate for cancer patients diagnosed between 2001 and 2007 is an average of 67%. According to the Center of Disease Control, in 2011, cancer was the second leading cause of mortality in the U.S. (23.2%) behind heart disease (24.1%). The American Cancer Society estimates that one in four deaths in the U.S. is due to cancer.

The main treatments for cancer are surgery, radiotherapy and chemotherapy. There are often, however, significant debilitating effects resulting from these treatments or lingering morbidity associated with these approaches to treatment of cancer. Our goal is to develop compounds that can lengthen survival times and improve the quality of life of cancer patients and survivors.

Although there are a large number of patients, treatment and management of cancer is performed by a relatively concentrated pool of medical professionals. We plan to reach this prescriber base using a relatively small commercial infrastructure that we intend to develop in the future by either hiring internally, partnering or contracting with one or more third-party entities with an established sales force. These development plans are dependent on our raising additional capital and receiving grant funding, the success of HS-110, and HS-410 and any technologies we might develop in the future and successful negotiation of commercial relationships, none of which we have completed to date. We believe, however, assuming the efficacy and safety of HS-110 and HS-410 and any other technology we might acquire, that our experienced management team will raise the capital and establish the commercial relationships necessary for success.

Limitations of Current Cancer Therapies

We believe current cancer treatment alternatives suffer from a number of limitations that impair their effectiveness in improving patient survival and overall quality of life including:

- *Toxicity.* Chemotherapeutic agents are highly toxic to the human body and very often cause a variety of significant and debilitating side effects, including, but not limited to, nausea and vomiting, bleeding, anemia and mucositis. Some targeted therapeutics have fewer systemic toxicities, but still typically have off-target effects such as gastrointestinal inflammation, severe skin reactions and breathing difficulties. These side effects limit a patient's ability to tolerate treatment and as such can deprive the patient of the potential benefit of additional treatments or treatment combinations that might otherwise destroy or prevent the growth of cancer cells. Once they become aware of the limited efficacy, limited increased survival and potentially significant toxicity of existing treatment alternatives, many patients diagnosed with terminal cancer choose to limit or forego therapy in order to avoid further compromising their quality of life. Patients with advanced stage cancer also often cannot tolerate cancer therapy, and certain therapies can hasten death as the patient's health further deteriorates from the therapy applied.

- *Mechanism of action.* While many current therapeutic approaches can be effective against specific targeted cells, the efficacy of these therapies in treating cancer over the long term generally is limited by the abundance and diversity of the cancer and tumor cells, which are believed to enable the targeted cells to adapt and become resistant to the current therapeutic approach over time.

- *Short-term approach.* Other than tumor removal in a surgical procedure, curing the cancer is often not the intent or a potential outcome of many current cancer therapies. Rather, increased survival time is the primary focus of many currently marketed and development-stage cancer therapeutics. In this regard, many cancer therapies show only a modest impact on the overall survival of the patients and only affect the length of time that passes after treatment begins and before the patient’s disease worsens or the patient dies.

- *Immune system suppression.* A weakened immune system not only inhibits the body's natural ability to fight cancer, but also causes patients to become more susceptible to infections and other diseases. Current approaches to cancer treatment generally involve introduction of an agent, such as a chemical, an antibody or radiation, which causes cell apoptosis (programmed cell death) or inhibits the proliferation of all cells, including immune cells, which has the unintended consequence of indirectly suppressing the immune system.

Immunotherapy Overview

Our *ImPACT* technology is a form of immunotherapy. Immunotherapy involves administration of a therapeutic agent that enlists or boosts a subject's immune system in order to fight disease.

Commonly recognized successful examples of immunotherapy include *prophylactic vaccines*, such as, childhood immunizations against infectious diseases such as measles, mumps, and rubella. In these cases, usually weakened (attenuated) or inactivated viruses are injected into the body to educate certain immune system cells to recognize and remember small pieces of viral or bacterial proteins (antigens). If and when an individual is subsequently exposed to this same pathogen, the immune system will recognize these antigens immediately and mount a potent immune response to neutralize and eliminate the pathogenic threat.

Therapeutic vaccines, such as *ImPACT* -based product candidates, operate in a fashion similar to *prophylactic vaccines* except that *therapeutic vaccines* are administered after a particular disease is already present. In each case, the human immune system is educated and harnessed to recognize and fight the disease of interest. Cancer can be considered a failure of the immune system to effectively recognize and eliminate inappropriately dividing and multiplying (malignant) cells. Under ordinary circumstances the human immune system continuously monitors and eliminates inappropriately dividing cells. However, for reasons that are not entirely understood, under cancerous conditions the immune system fails to recognize malignant cells and such cells are permitted to inappropriately multiply, grow and metastasize to form tumors which eventually become life threatening. Our therapeutic vaccines are designed to assist the immune system in identifying and eliminating malignant cells. Our approach involves the introduction of cellular antigens that are characteristic of malignant cells with the goal of generating an immune response against the particular form of cancer. In our approach, in addition to introducing a number of cancer-specific antigens, we also introduce a protein known as gp96 which stimulates and primes the immune system to further recognize cancer antigens and generates a potent and broad pan-antigen immune response against cancerous cells.

Immunotherapy Approaches

Immunotherapy is designed to stimulate and enhance the body's natural mechanism for killing cancer cells and virus-infected cells. Generally, immunotherapeutic approaches to treat disease can be separated into two distinct classes, passive and active, based on their mechanism of action.

Passive Immunotherapy: Passive immunotherapies generally consist of monoclonal antibodies directed at a single disease-specific enzyme or protein on the surface of the targeted cells with the goal of either killing the targeted cells or preventing them from dividing. Rather than stimulate or otherwise use the body's immune system to initiate the attack on the disease, the attack is made by the therapy which is produced *ex vivo*, or outside of the body. These therapies also are not usually personalized for the patient.

Active Immunotherapy: Active immunotherapies generally consist of therapies intended to trigger or stimulate the body's own immune system to fight disease. Active immunotherapies have no direct therapeutic action but rather contain antigens specifically designed to activate the patient's own immune system to find and kill the targeted cells that carry the same antigen. Active immunotherapies depend on the patient's immune system to seek out and destroy targeted cells or tumors. Most active immunotherapies utilize off-the-shelf antigens, known as "defined" antigens, rather than individualized, patient specific antigens, and are often paired with adjuvants, which are agents that generally activate the immune system cells to increase immune response.

Shortcomings of Immunotherapies: Both passive and active immunotherapy approaches have shortcomings, which include:

- Most active immunotherapies use normal, non-mutated, self-antigens which are typically poor at stimulating immune responses, even from healthy immune systems. In fact, the human immune system generally does not generate immune responses against self-antigens. Most passive and active immunotherapies also target one or only a few antigens, which increases the probability that infected cells will escape detection by the immune system and immunotherapy.

- Most active immunotherapies employ defined antigens that are not effective against multiple types of cancer.

- Most immunotherapies produce toxic effects resulting in damage to healthy tissues if the target antigen is absorbed by normal cells in addition to the targeted cancer or virus-infected cells.

- Many patients may not be able to mount effective immune responses with immunotherapy due to tumor or virus induced immunosuppression of accessory cells such as CD4+ helper T cells, which are necessary for the immunotherapies to be effective but may be functionally impaired by the patient′s disease.

- It can be difficult to commercialize immunotherapies based on cells derived from individual patients in a cost-effective manner as a result of the added complexity, limited patient material for production of multiple doses, and the need to store and ship the individual doses.

- Immunotherapies that rely on defined, off-the-shelf antigens or a single targeted antigen may have limited effectiveness because even within the same type of cancer, the genetic makeup and distinct antigens of a tumor can vary significantly from patient to patient.

These shortcomings were highlighted by the findings of a study recently published in *Nature Medicine* (Finak and Park (2008), Stromal gene expression predicts clinical outcome in breast cancer, Nature Medicine, 14, 518 – 527) where the whole genomes of 50 patients' breast cancer tumors were sequenced alongside matching DNA from the same patients' healthy cells to identify the genetic alterations present in the cancerous cells. The study found that the genomic pattern of each of the tumors varied significantly. Of the approximately 1,700 gene mutations found in total, most were specific and unique to the individual patients' cancerous tumors, and that only three of the genetic mutations occurred in 10% or more of the patients.

Although many of the immunotherapies currently in clinical development have shown promising results, we believe that specific proprietary elements of the ImPACT platform, especially the specific targeting of tumor antigens to patient CD8+ T cells, combined with an appropriate clinical strategy (focused on non-immunogenic tumors) position Heat favorably to competitive compounds.

Our Solution: ImPACT Therapy

We believe our *ImPACT* Therapy has a number of advantages over existing therapies. These advantages, elaborated below, may enable us to develop commercial products that extend the survival of, and improve the quality of life for, cancer patients:

- It is designed to fight cancer by activating the immune system against a wide variety of cancer antigens (both known and unknown).

- It is intended to continually secrete a wide variety of cancer-associated antigens, thus initiating a broad and sustained pan-antigen cytotoxic T cell attack against the targeted cancer. We believe this broad-based attack increases the probability of destroying the targeted cancer.

- It is designed to stimulate a natural immune response against specific cancer cells. We believe this may limit serious adverse events related to treatment.

- We believe that the novel mechanism of action, good tolerability and favorable safety profile will enable our *ImPACT* product candidates to have potential benefits across multiple disease stages and tumor types and in combination with other therapies. We believe our *ImPACT* technology can be targeted to additional specific tumor types by modifying cells from the cancer type of interest.

- Our *ImPACT* Therapy represents a first-in-class adjuvant that functions as both an immune activator and an antigen-delivery vehicle. *ImPACT* is the only adjuvant technology platform currently known to us in clinical development that is speci fi c to CD8+ cytotoxic T cell immune response, which is especially important for developing therapeutics in oncology as well as a number of other infectious disease indications.

- We believe many patients who are too ill to tolerate chemotherapy due to the associated toxicities may be able to benefit from our *ImPACT* product candidates.

ImPACT TECHNOLOGY PLATFORM

ImPACT Background

Our *ImPACT* technology represents an allogenic or "off-the-shelf" method to deliver cancer antigens accompanied by heat shock proteins, or HSPs, to illicit an immune response. HSPs are used as a signaling mechanism by the immune system to identify mutated proteins ("antigens"), including those from tumor cells. Although always present within certain cells, HSPs are normally only released when cells die by necrosis or unnatural cell death (rather than apoptosis or natural programmed cell death) and upon release are recognized by the host's immune system. When a cell dies an unnatural death through "necrosis", such as when it is infected and killed by a flu virus or other pathogen, the cell releases its contents into circulation setting off a molecular warning to the immune system thereby generating a rapid and potent immune response. Because HSPs very rarely leave cells, the immune system has evolved to recognize HSPs that have been released from dying cells as the sentries of a molecular alarm system. Upon detection of HSPs, the immune system then directs an immune response against any foreign (pathogenic) proteins bound to the HSP at the time the cell that released it died.

HSP's have several functions including:

- Protecting tissues from pathogens by activating the immune system.
- Acting as a chaperone to:
  - Facilitate proper protein folding within the endoplasmic reticulum.
  - Enable proper function of toll-like receptors and the innate immune system.
  - Carry irreparable proteins to intracellular garbage disposals to be degraded into peptides (short chains of amino acids – that are protein fragments).
- Loading peptides onto another class of proteins known as MHC I molecules. MHC I molecules move to the cellular surface where they are monitored by the immune system.

HSP gp96 is one of the most abundantly expressed proteins in the human body and is expressed by all cells. It is normally retained within cells in a compartment called the endoplasmic reticulum (ER), where it facilitates the folding of newly synthesized proteins so that they may perform their various tasks properly. Gp96 is particularly important in the process of detecting antigens as it is present in all cell types and, it is able to recognize all antigens. It also induces the immune system to activate CD8+ ("killer") T cells which then seek out and destroy the cells that are marked by antigens. Gp96 is normally only contained inside the ER of cells, however when a cell dies an abnormal death through necrosis it breaks open and releases gp96 into the surrounding tissue microenvironment. *ImPACT* works by modifying the chemical structure of gp96 so that a cell can continuously secrete it into the extracellular space accompanied by the unique peptide that it is folding at the time without causing necrosis. This allows the immune system to seek out and destroy cells characterized with antigens before the body would otherwise have detected them.

***ImPACT* Technology Overview**

A limitation of utilizing gp96 as a cancer immunotherapy is that it is normally retained within cells by a small region called a "KDEL sequence" that acts like a "leash", preventing gp96 from leaving the ER. Therefore, in order to utilize gp96 as a therapeutic, gp96 must either be purified from individual cells or engineered to be secreted from cells.

To overcome this limitation, a team of scientists led by Eckhard Podack, MD, Ph.D., the Chairman of our Scientific Advisory Board and the inventor of our technology, deleted this KDEL sequence and replaced it with another sequence that causes the new fusion protein, called gp96-Ig, to be secreted from cells continuously. Multiple tumor cell lines were then made to express gp96-Ig, and as expected, secreted it continuously into the extracellular space in a complex with tumor proteins. Dr. Podack demonstrated in the laboratory that gp96-Ig vaccination effectively cross-presented tumor specific antigens to immune cells, led to expansion of Cytotoxic T Lymphocytes (CTL) and the subsequent rejection of injected tumor cells. Importantly, these studies demonstrated that the secreted protein gp96-Ig maintained the critical characteristics of the native gp96 protein required to generate anti-tumor immune responses. Thus, *in vitro* proof-of-principle was established that the innovation, gp96-Ig, not only retained the desired properties of the native gp96 protein, but enhanced those functions and led to tumor-killing immune responses.

Our ImPACT technology platform:

- ***Effectively cross-presents tumor antigens and leads to cytotoxic killer T cell activation***

  Published studies in mice showed that killer T cell activation was approximately 10 million times greater with *ImPACT* secreted gp96-Ig than with a corresponding gp96 protein injection. The modified cell secretes gp96 in a sustained release for several days after injection. This creates a sustained immune response. These data suggest that gp96-chaperoned peptides may represent the most efficient, robust pathway for presenting a cell's antigens to the immune system and activating killer T cell.

- ***Binds and presents all potential tumor antigens to the immune system simultaneously***

  A single type of tumor (or virus) might have multiple strains derived from numerous tumor cells. These different strains have different antigens, all of which are capable of initiating an immune response. By creating a vaccine from a native tumor-cell line, we believe that *ImPACT's* technology can develop a therapy that shares many common features with patients' tumors of the same origin. We believe this "blanket" approach will provide each patient with a higher likelihood of a positive response to the therapy.

- ***Features killer T cell activation that is independent of CD4+ T cell help***

  Animal studies have confirmed that our technology initiates a mechanism called cross-presentation that is critical to inducing tumor rejection. Importantly, it does this independently and successfully without additional CD4+ T cell (also known as a helper T cell) recruitment, which is typically required in a normal immune system response. This is particularly important in cancer and HIV because helper T cell activity is frequently impaired in these disease states.

- ***May cause few side effects***

  We believe our technology allows the body to recognize cancer as a foreign entity and uses the body′s natural immune mechanism to recognize and fight it. In doing so, we believe our product candidates will generate fewer side effects than conventional chemotherapy and that patients will be able to maintain a higher quality of life.

The distinguishing characteristics of *ImPACT* are:

(i) While most other immunotherapy approaches target only a single antigen, **Heat's patented approach uses modified heat shock proteins to stimulate an immune response against multiple antigens contained within cancer cells (both known and unknown).** Cancer cells express different antigens that can be used to initiate an immune response. Each *ImPACT* vaccine is created from a native tumor-cell line that we believe expresses the widest array of antigens common to a particular type of cancer. We believe this "pan-antigen" approach provides each patient with a higher likelihood of a response to the therapy.

(ii) Heat's product candidates are made from "off-the-shelf" (allogeneic) cells and may therefore be **less expensive to manufacture than patient-specific (autologous) vaccines**. Heat's vaccines are mass-produced from a single source while other immunotherapy approaches require physicians to extract a patient's blood and/or cells, send them to a facility where a personalized vaccine is created, and then have them shipped back to the physician for injection into the patient.

(iii) While competing companies are developing therapies that are both "off-the-shelf" and which target multiple antigens, **Heat's *ImPACT* technology is the only known "off-the-shelf" (allogeneic) vaccine to us that directly induces "cross-presentation" to the CD8+ ("killer") T cells, which are the cytotoxic arm of the immune system.** Stimulating these CD8 (killer) T cells through "cross-presentation" has recently been shown to be critical to the induction of effective anti-tumor immunity. We believe our product candidates are able to leverage gp96 to serve as their own powerful immune stimulant (adjuvant) while other companies' technologies rely on the use of a secondary adjuvant like GMCSF or Alum.

Our Product Candidates and Clinical Development Programs

We have initiated development programs to target our *ImPACT* technology platform against a range of diseases, including non-small cell lung cancer and bladder cancer. We have submitted a Phase 2 protocol to our open IND with our first therapeutic vaccine, HS-110, against NSCLC in March 2014, and we initiated a Phase 1/2 clinical trial for bladder cancer in Q4-2013. Our lead scientist has also completed a study in primates for the development of a therapeutic and prophylactic vaccine for the treatment and prevention of HIV. This study continues to be fully funded by the NIH. The HIV trials were initiated by the primary inventor and to date have been funded by grants awarded to the primary inventor, which can be used in the discretion of the inventor. We have no funding obligation for such trials and the primary inventor is responsible for future development and research; nonetheless any research conducted by the primary inventor contributes to our body of research and we may choose to progress any such research to further clinical trials and incorporate such research into our future development plans.

Summary of HS-110 Clinical Trial

Phase 1 HS-110 Clinical Trial

Background

A Phase 1 clinical trial with HS-110 in patients with very late stage IIIB/IV NSCLC was undertaken by the inventor of the technology which we license at the Sylvester Comprehensive Cancer Center with a total of 18 patients dosed, 15 of which completed the first course of three planned courses of therapy and were evaluated. Two of these 15 patients completed all three planned courses. The primary purpose of this trial was to evaluate safety of HS-110, while the secondary objectives were to study gp96-Ig specific immune responses and to monitor clinical progress. The patients were divided into 3 arms. Due to statistical and safety considerations and early termination of the study, the patients in the trial were not evenly divided among the three arms. Arm 1, which consisted of 11 patients, received 40 million cells every two weeks for 18 weeks, arm 2, which consisted of 4 patients, received 20 million cells every week for 18 weeks and arm 3, which consisted of 3 patients, received 10 million cells twice a week for 18 weeks. Three of the patients, who were late stage lung cancer patients, died before their immune response could be evaluated and were not included in the evaluation set at the end of the trial.

The Phase 1 trial was conducted under an investigator-sponsored IND and was fully funded by the NIH. The main criteria for inclusion were: (i) patients with histologically confirmed NSCLC stage IIIB, stage IV, or recurrent disease; (ii) at least one site of bi-dimensionally measurable disease; (iii) treated brain metastasis must be stable by CT scan or MRI for at least 8 weeks; (iv) patient must have received and failed at least two lines of therapy (one of them erlotinib); (v) age ≥ 18 years; ECOG performance status 0-2; life expectancy ≥ 3 months; and (vi) signed informed consent.

The median age was 67 years (range 38-86). HS-110 showed no overt toxicity. There were no serious adverse events (SAEs) that were considered by the trial investigator to be treatment-related. Most of the adverse events (AEs) were reported as mild or moderate (grade 1 or 2) with the most frequent being skin induration and rash that were transitory and usually resolved in 1 to 2 weeks.

HS-110 provides evidence of a CD8-CTL IFN- γ immune response in patients with advanced NSCLC. In 11 of the 15 patients (73%) that completed the first course of therapy with HS-110, there was a twofold or greater increase in CD8 cells secreting interferon gamma (CD8-CTL IFN- γ). These patients also exhibited an estimated median survival of 16.5 months (95% CI:7.1-20.0). In contrast, 4 patients were immune non-responders and survived 2.1, 2.3, 6.7, and 6.7 months, or a median survival of 4.5 months, which is consistent with the expected survival times in this patient population. The protocol required that we look for such responses, but, as is typical in immunotherapy, no partial or complete tumor responses were observed. The median one-year overall survival rate of patients in the study was 44% (95% CI:21.6-65.1). For comparative purposes, while there was a wide range of survival times, the one-year overall survival rate in a published one-year, 43-patient, advanced lung cancer population was 5.5%. One of the late-stage lung cancer patients survived over four years since starting the therapy and another patient survived over three years since starting the therapy. These findings were consistent with multiple pre-clinical published studies on *ImPACT* therapy.

HS-110 Safety

We believe HS-110 showed no overt toxicity. There were no serious adverse events (SAEs) that were considered by the trial investigator to be treatment-related. Most of the adverse events (AEs) were reported as mild or moderate (grade 1 or 2) with the most frequent being skin induration and rash that were transitory and usually resolved in 1 to 2 weeks. The single grade 3 AE was in the "Body as a Whole" category (fatigue) and was rated as "possibly" related. There were no immune-related events with the vaccine or the vaccinations.

Skin reactions at the vaccination site were minimal and of short duration and there was no evidence of the generation of any autoimmune phenomena. In lieu of a dose escalation design, the design of the Phase I trial involved increasing the frequency of vaccination, while still retaining the total dose of vaccine cells administered. A more frequent vaccination schedule caused increased tumor rejection in preclinical models.

Adverse Events by Body System

Body System	Number of Events (N=219)	Severity Grade (# of events)
Injection Site Reactions	166 (75.8%)	Grade 1 (166)
Respiratory System	9 (4.1%)	Grade 2(5)
Body as a Whole (general disorders including fever)	8(3.7%)	Grade 1(4) Grade 2(3) [a] Grade 3(1) [b]
Nervous System	8(3.7%)	Grade 2(1)
Musculoskeletal	7(3.2%)	Grade 2(5)
Digestive System	7(3.2%)	Grade 1(7)
Metabolic and Nutrition	6(2.7%)	Grade 1(6)
Skin and Appendages (non-injection site reactions)	4(1.8%)	Grade 2(1)
Cardiovascular System	2(0.9%)	Grade 2(1)
Urogenital System	1(0.5%)	Grade 1(1)
Endocrine System	1(0.5%)	Grade 2(1)
Hemic and Lymphatic	—	—

a All grade 2 AEs except 4 were classified as non-related to treatment. The grade 2 treatment-related AEs were 1 musculoskeletal event (joint pain) rated as definitely related. 1 musculoskeletal event (knee weakness) rated as possibly related. 1 endocrine event (hot flashes) rated as unlikely related and 1 skin event (pruritus) rated as unlikely related.

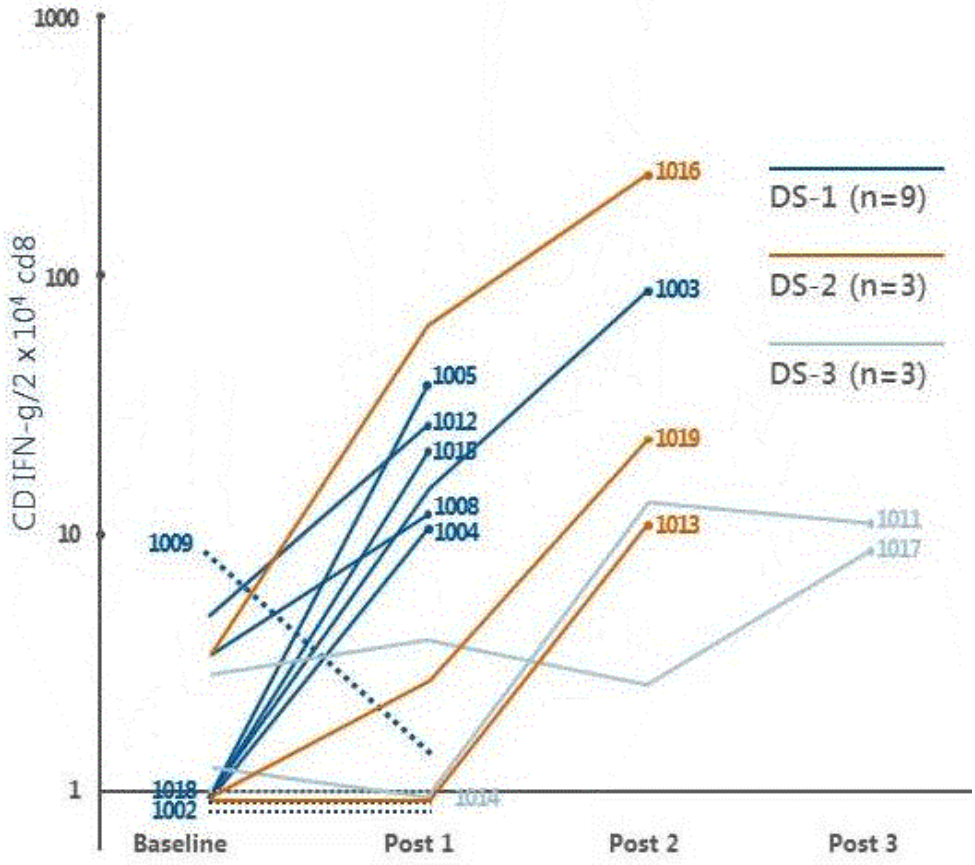
b The single grade 3 AE was in the body as a whole category (fatigue) and was rated as possibly related.

Injection Site Reactions

Injection Site Reaction (ISR)	Number of Events (N = 166)
Pain	17 (10%)
Induration	58 (35%)
Pruritus	8 (5%)
Hyperpigmentation/Discoloration	3 (2%)
Rash	78 (47%)
ISR non-specific	2 (1%)

Positive Immunological Response

In 11 of the 15 patients (73%) completing the first course of therapy with HS-110, there was a twofold or greater increase in CD8 cells secreting interferon gamma (CD8-CTL IFN- γ) following vaccination.



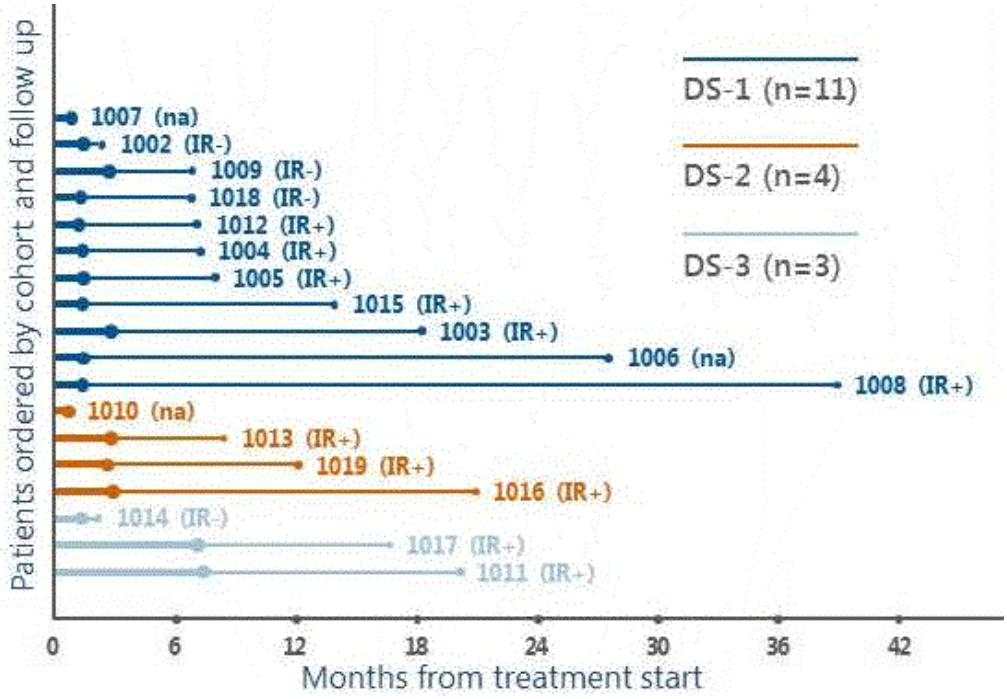
CD8 IFN- γ response. Samples from 15 patients collected for immune response at baseline and after at least one course of vaccination were available for analysis of the CD8 IFN- γ response. 20,000 purified patient CD8 T cells were stimulated with vaccine cells for 40h in ELI-spot plates and the frequency of IFN- γ secreting cells determined. + indicates first increase. Solid indicate immune response (IR+), dashed lines no response (IR −).

Since NSCLC is known to be highly immunosuppressive, we believe that by overcoming tumor-induced-suppression with frequent vaccinations as observed anecdotally in the Phase 1 study and the generation of an observed potent polyepitope specific CD8 CTL is encouraging and warrants further study.

Clinical Response

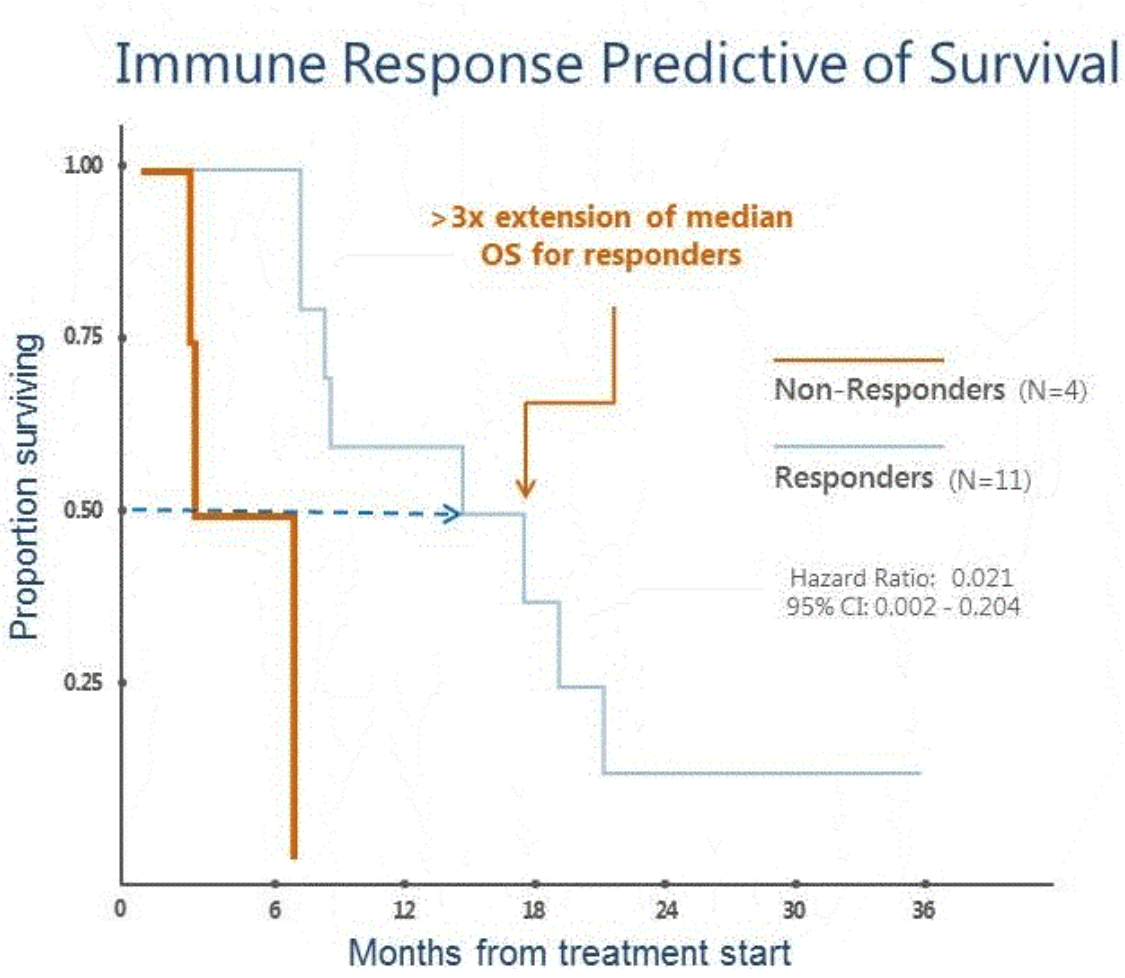
Seven of 15 patients completing the first course of therapy (39%; 95% CI: 17.3- 64.3%) achieved disease stabilization after the first course of vaccinations (6 weeks) and 8 patients had disease progression. While the protocol required that we look for such responses, as is typical in immunotherapy, no partial or complete tumor responses were noted in the study. Although clinicians and patients may perceive disease stabilization as beneficial, without a control arm the FDA does not consider it to be a clinical benefit for regulatory purposes. In order to obtain FDA approval, we will be required to show an improvement in progression-free survival (or, PFS) or overall survival (or, OS) when compared to a control arm in a randomized study. The Kaplan Meier estimate of median time to progression was 1.4 months (95% CI: 1.3- 2.7), and the PFS rates at 1, 2 and 3 months were 88.9% (95% CI: 62.4- 97.1%), 38.9% (95% CI: 17.5-60.0%), and 11.1% (95% CI: 1.9- 29.8%), respectively. Of note, two patients remained progression free for just over 7 months.

The typical median survival period for late-stage lung cancer is 4.5 months for patients who are not receiving any treatment. Two of the fifteen patients who completed the first course of therapy were followed for over 3 years and 4 years, respectively. The Kaplan-Meier estimate of median overall survival was 8.1 months (95% CI: 6.7- 18.2), and the 1, 2, and 3-year OS rates were 44.4% (95% CI: 21.6-65.1%), 19.0% (95% CI: 4.8- 40.3%), and 9.5% (95% CI: 0.8-32.1%), respectively. While these results may be encouraging, apparent differences in outcome between population-based survival estimates and treatment groups from a clinical study can arise from differences other than drug treatment. The reliability of such comparisons must also be considered in light of the unblinded nature of the study data at the time that the comparator was chosen. Moreover, the wide range of values in the 95% confidence intervals in our study suggests that the actual median survival times could lie anywhere in the reported intervals.



Time to progression (thick line) and additional follow up (thin line) by dose-schedule cohort. Patients are shown within cohort in order of increasing follow up (shortest at top). Filled diamonds indicate disease progression; open diamonds indicate stable disease at last assessment. Filled circles indicate death; open circles last follow up of surviving patients. IR+: more than twofold increase in CD8 from baseline. IR − : no CD8 immune response. na: not assessed for immune response.

In 11 of the 15 patients (73%) completing the first course of therapy with HS-110, there was a twofold or greater increase in CD8 cells secreting interferon gamma (CD8-CTL IFN-y) following vaccination. In a non-prespecified analysis, the responders saw a threefold increase in median overall survival compared to the non-responders on the trial.



Summary

In summary, based on the results of this Phase 1 trial in 18 patients, we believe HS-110 showed no overt toxicity and appears to be capable of generating CD8-CTL IFN- γ immune responses in patients with advanced NSCLC. These results are encouraging and may be predictive of clinical benefit based on stabilization of disease, overall survival and the immune responder results.

ONCOLOGY INDICATIONS of *ImPACT*

Lung Cancer

Disease

Lung cancer is the leading cause of cancer-related death in the United States. According to the National Cancer Institute, in 2013, lung cancer is expected to account for 26% of all female cancer deaths and 28% of all male cancer deaths. An expected 228,190 people will be diagnosed with lung cancer in the United States in 2012. Of these lung cancers, roughly 85% will present as non-small cell lung cancer. Patients with advanced clinical stage IIIB/IV disease visible on chest radiography have a 5-year survival rate as low as 1-5%.

Clinical Development

The technology that we license was the subject of an investigator initiated Phase 1 clinical trial conducted at the Sylvester Cancer Center for the treatment of non-small cell lung cancer ("NSCLC" or "lung cancer") to establish safety and proof of concept clinical efficacy.

After completion of the 18 patient Phase 1 trial, in which 15 patients completed the first course of three planned course of therapy and were evaluated, we successfully opened a new IND to conduct additional trials with HS-110 in patients with NSCLC. Our Phase 2 study, which has been submitted to the FDA, has been designed to investigate the combination of HS-110 with low dose cyclophosphamide followed by sequential chemotherapy versus chemotherapy alone in third-line NSCLC patients. The trial is structured as a multicenter randomized, study to evaluate the immune response, safety and efficacy endpoints of HS-110 when administered weekly for 12 weeks in combination with low-dose cyclophosphamide in an induction period followed by monotherapy HS-110 every three weeks during maintenance. Upon first progression, patients will be treated with a regimen from the list of allowable chemotherapies with continued administration of HS-110 for up to 2 years. Patients randomized to the comparator arm will be treated with one chemotherapy regimen until first progression and then switched to an alternate chemotherapy regimen until second progression. Blood samples will be taken to evaluate the immune response and their correlation to overall survival, and where considered appropriate by the investigator, patients will be invited to consent for pre- and post-treatment biopsies for exploratory biomarker analysis. The primary endpoint is overall survival; secondary endpoints follow objective responses and immune response. The trial will enroll 123 patients at approximately 20-30 investigative centers over 2 years. We anticipate recruitment to begin in Q3-2014.

In addition to our Phase 2 study, our chief scientist has received a grant award from the Marcus Foundation that fully funds a 36 patient Phase 1/2 investigator-sponsored Phase 1/2 study for use of HS-110 as a combination therapy with theophylline and oxygen. This study is anticipated to begin during Q2 2014 and is listed as identifier NCT01799161.

Bladder Cancer

Disease

In the United States, bladder cancer is the fourth most common type of cancer in men and the ninth most common cancer in women. According to the National Institutes of Cancer, 1 in 42 men and women will be diagnosed with bladder cancer during their lifetime, a total of more than half a million patients in the US. There are more than 60,000 cases of bladder cancer diagnosed each year in the United States, resulting in over 14,000 deaths per year. Available treatments are currently not effective, thus this remains an area of high unmet need.

Clinical Development

The Bladder Cancer Phase 1/2 Trial

We opened an IND in support of HS-410 for bladder cancer with no clinical hold. The first protocol submitted to the IND is a 93 patient, Phase 1/2 trial to examine safety, tolerability, immune response and preliminary clinical activity of HS-410 in patients with high risk, superficial bladder cancer who have completed surgical resection and 3-6 weekly intravesical bacillus Calmette-Guérin (BCG) immunotherapy instillations. We anticipate including approximately 10-15 clinical sites with an enrollment period of 18-24 months.

The Phase 1 portion will enroll two cohorts of 9 patients each to either a high or low dose group. Patients will receive weekly intradermal injections of HS-410 for 12 weeks followed by 3 monthly injections, and immune response will be evaluated at baseline, week 7, week 14 and week 29. The first 3 patients in each dose group will be enrolled at 2 week intervals to allow opportunity to assess safety and tolerability of HS-410. At the completion of the Phase 1 portion of the study, the dose resulting in the optimal safety and immune response will be advanced to Phase 2. In the Phase 2 portion, 75 patients will be enrolled in 2:1 fashion to HS-410 or placebo. Primary endpoint will examine time to 1st recurrence of bladder cancer. Other endpoints will include recurrence rate, progression rate and immune response.

Other Cancers

Our *ImPACT* -technology is a broad based approach and can be used to combat a variety of cancers. We continue to evaluate other indications for our *ImPACT* therapeutic vaccines and have developed a cell line for ovarian cancer and one for triple negative breast cancer. Our decision to further pursue these or any additional product candidates other than our two lead product candidates will be based in part upon available funding and partnering opportunities.

Infectious Diseases

To date, over $4,000,000 in governmental and institutional funding has been provided to the inventor of the technology we license for HIV and hepatitis C virus (HCV) research using our *ImPACT* -technology. We do not intend to use any of our current funds to further any HIV or HCV research and instead plan to conduct additional research with respect to the use of our *ImPACT*-technology for the treatment of such diseases solely through additional governmental and institutional grants, if any, that may be received.

Manufacturing

We rely on third-party manufacturers to produce and store our product candidates for clinical use and currently do not own or operate manufacturing facilities.

We have retained Lonza Walkersville, Inc. a vendor, who has begun production of HS-110 to be used in Phase 2 and our potential Phase 3 clinical trials. We entered into an eight year Manufacturing Services Agreement, dated October 19, 2011, with the vendor (the "Manufacturing Agreement"). The Manufacturing Agreement provides that the vendor will manufacture products based on our *ImPACT* technology intended for use in pharmaceutical or medicinal end products, including, without limitation, products in a final packaged form and labeled for use in clinical trials or for commercial sale to end users in accordance with the terms and conditions of individual statements of work. The Manufacturing Agreement requires that we purchase certain minimum amounts each year from the vendor. The Manufacturing Agreement may be terminated by the parties upon mutual agreement, and by each party for a material breach by the other party that is not cured within the cure period, upon notice that a clinical trial for which product is being produced under the agreement is suspended or terminated or upon the other party's insolvency, dissolution or liquidation.

The HS-110 used in the inventor's Phase 1, and planned for use in our Phase 2 clinical trial and HS-410 used in our Phase 1/2 clinical trial was and is currently manufactured under current good manufacturing practices, or cGMP. The vaccine is grown in large quantities and quality tested according to FDA guidelines. Following testing, the vaccine is irradiated, which is a commonly used attenuation process that eliminates the ability of the gp96-Ig-containing vaccine cell lines to replicate but allows them to continue secreting gp96-Ig for a period of several days. Quality tested, irradiated batches of the vaccine are then dispensed into individual doses and frozen in liquid nitrogen. These batches of frozen vaccine are stable for long periods of time, and are thawed immediately prior to administration to patients. Sufficient material to initiate the first few patients in the HS-110 Phase 2 study has already been produced, and preparations are underway to produce quantities required for trial completion and subsequent clinical trials. Sufficient material to complete the Phase I portion of the HS-410 Phase1/ 2 study has already been produced, and preparations are underway to produce quantities required for trial completion and subsequent clinical trials.

Competition

The pharmaceutical industry and biologics industry are each highly competitive and characterized by a number of established, large pharmaceutical companies and other companies, as well as smaller companies like ours. If our competitors market products that are less expensive, safer or more effective than any future products developed from our product candidates, or that reach the market before our approved product candidates, we may not achieve commercial success. Technological developments in our field of research and development occur at a rapid rate and we expect competition to intensify as advances in this field are made. We will be required to continue to devote substantial resources and efforts to our research and development activities.

As a biotech company with a cancer immunotherapy as its lead therapeutic, we compete with a broad range of companies. At the highest level, cancer immunotherapy can be seen as both a complement and a potential competitor to any oncology therapy, most notably chemotherapy, biologics and small molecule drugs. Not only do we compete with companies engaged in various cancer treatments including radiology and chemotherapy but we also compete with various companies that have developed or are trying to develop immunology vaccines for the treatment of cancer. Certain of our competitors have substantially greater capital resources, large customer bases, broader product lines, sales forces, greater marketing and management resources, larger research and development staffs and larger facilities than we do and have more established reputations as well as global distribution channels. Our most significant competitors, among others, are fully integrated pharmaceutical companies such as Eli Lilly (Alimta), Bristol-Myers Squibb (Erbitux) and Sanofi-Aventis (Eloxatin), and more established biotechnology companies such as Roche/Genentech (Avastin and Tarceva), and competing cancer immunotherapy companies such as Dendreon, New Link Genetics and others which have substantially greater financial, technical, sales, marketing, and human resources than we do. These companies might succeed in obtaining regulatory approval for competitive products more rapidly than we can for our products. In addition, competitors might develop technologies and products that are less expensive, safer or more effective than those being developed by us or that would render our technology obsolete. In addition, the pharmaceutical and biotechnology industry is characterized by rapid technological change. Because our research approach integrates many technologies, it may be difficult for us to remain current with the rapid changes in each technology. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Our competitors may render our technologies obsolete by advancing their existing technological approaches or developing new or different approaches.

We expect to compete with other pharmaceutical and biotechnology companies, and our competitors may:

- develop and market products that are less expensive, more effective or safer than our future products;
- commercialize competing products before we can launch any products developed from our product candidates;
- operate larger research and development programs, possess greater manufacturing capabilities or have substantially greater financial resources than we do;
- initiate or withstand substantial price competition more successfully than we can;
- have greater success in recruiting skilled technical and scientific workers from the limited pool of available talent;
- a more effectively negotiate third-party licenses and strategic relationships; and
- take advantage of acquisition or other opportunities more readily than we can.

We expect to compete for market share against large pharmaceutical and biotechnology companies, smaller companies that are collaborating with larger pharmaceutical companies, new companies, academic institutions, government agencies and other public and private research organizations.

Many major pharmaceutical companies have at least one immunotherapy drug or therapeutic in development, either directly or in partnership with a smaller biotech firm. Some of our competitors that are developing competitive immunology drugs and therapeutics include Merck kGaA/Oncothyreon’s Stimuvax for the treatment of breast cancer and NSCLC; Transgene and its product TG4010 for the treatment of NSCLC lung cancer; GlaxoSmithKline and its product MAGE-A3 for the treatment of melanoma, NSCLC, multiple myeloma and squamous cell carcinoma; Oxford BioMedica and its product TroVax for the treatment of prostate, kidney and colorectal cancer); NewLink Genetics and its HyperAcute treatments for pancreatic cancer, lung cancer, melanoma and renal cell cancer; Celldex/Pfizer and their product CDX-110 for the treatment of malignant brain cancer; and Dendreon and its product Provenge for the treatment of prostate cancer.

The primary treatments for non-small cell lung cancer are surgery, radiation, chemotherapy and various combinations of each of these treatments. A large number of patients, particularly with advanced disease, are refractory to these treatments and are subsequently treated with a number of emerging biologic agents, including immunotherapy. Some examples of therapies commonly attempted with stage IIIB/IV NSCLC patients include: Alimta (pemetrexed), Avastin (bevacizumab), Tarceva (EGF inhibitor), Gemzar (gemcitabine), Erbitux (cetuximab), Carboplatin, Taxol, VP16 and Arlibercept. It is unlikely that biologic agents will compete with more traditional therapies in the short-term, but many oncologists believe that such therapies will eventually become the mainstay of lung cancer therapy. None of these agents have proven particularly effective for stage IIIB/IV NSCLC patients, with the most effective therapies only increasing survival by a few months. As a result, we do not consider these agents to be direct competitors to HS-110 because they are likely to be given either in sequence or in conjunction with some of the agents listed. Furthermore, many patients cannot tolerate many of the chemotherapeutics listed. Thus, we believe if HS-110 has a positive safety profile (without observation of local or systemic toxicities, none of which have been seen to date), it is likely that HS-110 would be preferred both by physicians and patients in this stage of disease.

As previously stated we compete with other forms of cancer treatment such as biologic therapies in addition to immunology therapies. There are several biologic therapies in clinical development against NSCLC that have been identified as potential competitors to HS-110. In particular, a cell-based vaccine therapy, Lucanix, is in development by NovaRx. Lucanix has recently completed Phase 3 clinical trials and failed to reach the primary endpoint, although these data have yet to be formally published.
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Our strategy is to emphasize what we believe to be our competitive advantages which are that the therapy will have less side effects than most other chemotherapies, will be available at lower prices than other therapies and will work on almost all types of cancer and not just one specific type.

Although all chemotherapy drugs have severe side-effects such as overall damage to the immune system, not only to cancerous cells, leading to hair loss, nausea and vomiting, and considerable pain, etc., the side effects from immunotherapy are typically reduced because immunotherapy works with the body’s own immune response.

According to Schreiber et al, patient-specific vaccines are not more effective than off-the shelf vaccines in reducing tumors. Furthermore, patient-specific vaccines cost far more to produce than off the shelf (allogeneic) vaccines, where any donor tissue can be used. Over 95% of newly developed cancer immunotherapies cost over $20,000 per course of treatment and we expect that our treatment will be less expensive.

Grant Funding

To date, in excess of $14,000,000 in grants, have been awarded to the primary inventor of the technology we license to fund development of *ImPACT* technology and clinical trials upon which our clinical programs are based. We have little control over the direction of the NIH grant funds that have been received by the primary inventor of the technology we license and since payment is made to the inventors as opposed to us we do not recognize any revenue from such grant funds nor do they fund any expenses that we incur. Although earmarked for further development of the technology that we license, any funds awarded to the primary inventor are used in his discretion and we have little control over his use of the funds. Our strategy is to continue to apply for grants that will enable us to leverage our core technology platform. We have applied for grant funding from the NIH, DOD, CPRIT and other public and private foundations to be used for our research and development activities. We have applied for a grant in the amount of approximately $19,000,000 from CPRIT to be matched with $6,000,000 from us to be used to expand our bladder cancer clinical trial and commence other research and development activities. Although we have recently been granted a meeting with CPRIT to further discuss our grant application, there can no assurance that such grant funding will be awarded to us. Our primary inventor also applies for academic grants to enhance the core technology platform. Grant funds received by our primary inventor are not utilized by us. Rather, these funds support our primary inventor's academic interests and may benefit us to the extent that these grants enable him to enhance the technology platform or generate additional data to support our programs. Currently, our primary inventor's academic grants are supporting the HS-110 NSCLC combination study as well as the HIV study. All other clinical programs, including our Phase 2 NSCLC study and our Phase 1/2 bladder cancer study are supported by us.

Previous Grant awards for development of *ImPACT*

Grant Title	Granting Organization	Amount
Regulation of Anti-Tumor Immunity	NIH	$6,187,904
Molecular Mechanism of Anti-Tumor and Anti-Bacterial Cytotoxicity	NIH	$897,295
Mechanisms of mucosal protection by HPV-SIV and gp96-Ig-SIV vaccines	NIH	$2,000,000
Systemic and mucosal HIV-immunity by HSP-gp96 vaccines	NIH	$451,410
Induction of mucosal SIV immunity in non-human primates by secreted HSP-gp96	NIH	$2,124,733
Clinical Translation of Gene Therapy for Lung Cancer Award Recipient	Alliance for Cancer Gene Therapy	$1,000,000
Clinical Translation of Gene Therapy for Lung Cancer Award Recipient	State of Florida	$100,000
QTDP Grant	Dept. of Treasury	$244,479
Use of HS-110 as a Combination Therapy with Theophylline and Oxygen in Advanced Lung Cancer Patients	Marcus Foundation	$840,000

Intellectual Property

License Agreements and Intellectual Property

Our goal is to obtain, maintain and enforce patent protection for our products, formulations, processes, methods and other proprietary technologies, preserve our trade secrets and rights in our unique biological materials, and operate without infringing on the proprietary rights of other parties, both in the United States and in other countries. Our policy is to actively seek to obtain, where appropriate, the strongest intellectual property protection possible for our current product candidates (*ImPACT* therapy) and any future product candidates, proprietary information and proprietary technology through a combination of contractual arrangements and patents, both in the U.S. and abroad. However, even patent protection may not always afford us with complete protection against competitors who seek to circumvent our patents. See “Risk Factors - Risks Relating to Our Business” – “We have limited protection of our intellectual property.”

We will continue to depend upon the skills, knowledge and experience of our scientific and technical personnel, as well as that of our advisors, consultants and other contractors, none of which is patentable. To help protect our proprietary know-how, which is not patentable, and for inventions for which patents may be difficult to enforce, we currently rely and will in the future rely on trade secret protection and confidentiality agreements to protect our interests. To this end, we require all of our employees, consultants, advisors and other contractors to enter into confidentiality agreements that prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business.

License Agreements

In July 2008, we entered into an exclusive license agreement with the University of Miami (the "University") for intellectual and tangible property rights relating to our *ImPACT*, technology. This license agreement was subsequently assigned to our subsidiary Heat Biologics I, Inc. which issued to the University shares of its common stock representing seven and one half percent (7.5%) of its common stock. The term of the license is the length of the last to expire patent, unless terminated earlier. The license agreement grants Heat Biologics I, Inc. exclusive, worldwide rights to make, use or sell licensed materials based upon the following patent-related rights:

- U.S. patent applications: Serial number 60/075,358 (the " '358 application") entitled "Modified Heat Shock Protein-Antigenic Peptide Complex" and filed on February 20, 1998; Serial number 09/253,439 (the " '439 application") entitled "Modified Heat Shock Protein-Antigenic Peptide Complex " and filed on February 19, 1999; serial number 11/878,460 (the " '460 application") entitled "Recombinant Cancer Cell Secreting Modified Heat Shock Protein-Antigenic Peptide Complex" and filed on July 24, 2007; and all U.S. patents and foreign patents and patent applications based on these U.S. applications; as well as all divisionals, continuations, and those claims in continuations-in-parts to the extent they are sufficiently described in the '358, '439, or '460 applications of the foregoing, and any re-examinations or reissues of the foregoing (the "GP96 Vaccine Technology Portfolio").

As consideration for the rights granted in the license agreement, the licensee is obligated to pay the University upfront license fees, additional yearly and milestone payments and a royalty based on net sales of products covered by the patent-related rights set forth above. More specifically, the licensee is obligated to pay the University (i) all past and future patent costs associated with the licensed patent-related rights; (ii) a license issue fee of $150,000; (iii) annual payments of $10,000 in 2010, 2011 and 2012, and $20,000 each year thereafter; (iv) a milestone payment of $250,000 by the earlier of May 31, 2017 or approval of a BLA for the lung cancer vaccine or for a cancer vaccine other than lung cancer; and (v) royalties equal to a percent (in the low-to-mid single digits) of net sales of licensed products. The royalty rate is subject to reduction if additional license rights from third parties are required to commercialize licensed products. In the event of a sublicense to a third party, Heat Biologics I, Inc. is obligated to pay royalties to the University equal to a percentage of what it would have been required to pay to the University had it sold the products under sublicense itself. In exchange for additional consideration, the University agreed to postpone the payment due dates of this license agreement.

In February 2011, our subsidiary, Heat Biologics I, Inc., entered into four additional exclusive license agreements with the University. The terms of each of these additional licenses runs until all the patent-related rights licensed therein have expired, unless terminated earlier. In of these additional exclusive license agreements, Heat Biologics I, Inc. obtained exclusive, worldwide rights to make, use or sell products covered under the following patent-related rights:

- U.S. patent application serial number 61/347,336 entitled "Cancer Treatment" and filed on May 21, 2010, all U.S. patents and foreign patents and patent applications based on these U.S. applications; as well as all divisionals, continuations, and those claims in continuations-in-parts (to the extent they are sufficiently described in the applications) of the foregoing, and any re-examinations or reissues of the foregoing (the "Cancer Treatment Portfolio").

- U.S. patent application serial number 61/033,425 entitled "Allogeneic Cancer –Based Immunotherapy" and filed on March 3, 2008 and PCT application number PCT/2009/001330 entitled "Allogeneic Cancer –Based Immunotherapy" filed on March 3, 2009, all U.S. patents and foreign patents and patent applications based on these U.S. applications as well as all divisionals, continuations, and those claims in continuations-in-parts (to the extent they are sufficiently described in the applications) of the foregoing, and any re-examinations or reissues of the foregoing (the "Allogeneic Cancer –Based Immunotherapy Portfolio").

- U.S. patent application serial number 61/033,425 entitled "Heat Shock Protein GP96 Vaccination and Methods of Using Same" filed on March 20, 2008 and PCT application number PCT/ 2009/001727 entitled "Heat Shock Protein GP96 Vaccination and Methods of Using Same "filed on March 19, 2009, all U.S. patents and foreign patents and patent applications based on these U.S. applications as well as all divisionals, continuations, and those claims in continuations-in-parts (to the extent they are sufficiently described in the applications) of the foregoing, and any re-examinations or reissues of the foregoing (the "Heat Shock Protein GP96 Vaccination Portfolio").

- U.S. patent application serial number 61/116.971 entitled "HIV/SIV Vaccine for the Generation of Mucosal and Systemic Immunity" filed November 28, 2008 and PCT application number PCT/ 2009/065500" entitled "HIV/SIV Vaccine for the Generation of Mucosal and Systemic Immunity" filed on November 23, 2009 all U.S. patents and foreign patents and patent applications based on these U.S. applications as well as all divisionals, continuations, and those claims in continuations-in-parts (to the extent they are sufficiently described in the applications) of the foregoing, and any re-examinations or reissues of the foregoing (the "HIV/SIV Vaccine Portfolio").

As consideration for the rights granted in these additional four license agreements, the licensee is obligated to pay the University certain upfront license fees, past and future patent costs and royalties based on net sales of commercialized products covered by the patent-related rights set forth above. No annual or milestone payments are required under any of these four additional license agreements. The upfront license fees for the Cancer Treatment Portfolio and the HIV/SIV Vaccine Portfolio license agreements are $10,000 and $50,000, respectively. No upfront license fees were required under the license agreements for the Allogeneic Cancer–Based Immunotherapy and the Heat Shock Protein GP96 portfolios. Under each of these four additional license agreements, the royalties are equal to a percent (in the low-to-mid single digits) of net sales of products covered by the patent-related rights in the respective license agreements. These royalty rates are subject to reduction if additional license rights from third parties are required to commercialize licensed products. In the event of a sublicense to a third party, Heat Biologics I, Inc. is obligated to pay royalties to the University equal to a percentage of what it would have been required to pay to the University had it sold the products under sublicense itself. Each of these additional license agreements also provide that the licensee will not have to pay more than above royalty rates and sublicense fees if more than one license from the University is required to sell products covered by the licensed patent-related rights. In exchange for additional consideration (including the requirement that Heat Biologics I, Inc. pay additional milestone payments of $25,000 before initiation of any Phase 3 clinical trials for products covered by any of the license agreements, and an additional payment equal to 18% annual interest on the amounts due or a note convertible into an equivalent value of shares in Heat's Preferred Stock), the University agreed to postpone the payment due dates for each of these four additional licenses.

All five of the above-described license agreements provide that the licensor has the right to terminate a subject license if the licensee has (i) not introduced, or at least use it best efforts to introduce, a licensed product in the commercial marketplace in the US, EU, or Japan by December 31, 2020; (ii) not otherwise exercise diligence to bring licensed products to market; or (iii) files, or has filed against it, a proceeding under the Bankruptcy Act, is adjudged insolvent, makes an assignment for the benefit of its creditors, or has an unreleased or unsatisfied writ of attachment or execution levied upon it.

In March 2014, our subsidiary, Heat Biologics I, Inc., entered into an additional exclusive license agreement with the University. The term of this license runs until all the patent-related rights licensed therein have expired, unless terminated earlier. In this exclusive license agreement, Heat Biologics I, Inc. obtained exclusive, worldwide rights to make, use or sell products covered under the University's interest in the following patent-related rights:

- U.S. Provisional Patent Application serial number 61/445,884 entitled "Combined Cell Based Gp96-IG-SIV/HIV; Recombinant Gp120 Protein Vaccination For Protection From SIV/HIV" and filed February 23, 2011 (the "884 application"); PCT Application Serial No. PCT/US2012/26256 entitled "Combined Cell Based Gp96-IG-SIV/HIV, Recombinant Gp120 Protein Vaccination For Protection From SIV/HIV" and filed February 23, 2012 (the " '256 application"); and all U.S. patents and foreign patents and patent applications based on these applications; as well as all divisionals, continuations, and those claims in continuations-in-parts (to the extent they are sufficiently described in the '884 or '256 applications) of the foregoing, and any re-examinations or reissues of the foregoing (the "Combination HIV/SIV Vaccine Portfolio Portfolio").

The patent rights in the Combination HIV/SIV Vaccine Portfolio are co-owned by the University and the National Institutes of Health (the "NIH"). Heat Biologics I, Inc. has only licensed the University's rights therein. The NIH's rights in this portfolio have not been licensed by Heat Biologics I, Inc. As consideration for the rights granted in this license agreement, the licensee is obligated to pay the University an upfront license fee, past patent costs, and royalties based on net sales on commercialized products covered by the patent-related rights set forth above. No annual payments are required under this license agreement. The licensee is obligated to make milestone payments under this license agreement as follows: $50,000 upon completion of a phase I clinical trial, $100,000 upon completion of a phase II trial, $100,000 upon completion of a phase III trial, and $100,000 upon acceptance of a BLA by the FDA or its foreign equivalent. Under this license agreement, the royalties are equal to a percent (low single digits) of net sales of products covered by the patent-related rights. This royalty rate is subject to reduction if additional license rights from third parties are required to commercialize licensed products. In the event of a sublicense to a third party, Heat Biologics I, Inc. is obligated to pay royalties to the University equal to a percentage of what it would have been required to pay to the University had it sold the products under sublicense itself. This license agreement also provides that the licensee will not have to pay more than the above sublicense fees or a royalty in the low-to-mid single digits if more than one license from the University is required to sell products covered by the licensed patent-related rights. The licensor has the right to terminate this license if the licensee has (i) not introduced, or at least use it best efforts to introduce, a licensed product in the commercial marketplace in the US, EU, or Japan by December 31, 2023; (ii) not otherwise exercise diligence to bring licensed products to market; or (iii) files, or has filed against it, a proceeding under the Bankruptcy Act, is adjudged insolvent, makes an assignment for the benefit of its creditors, or has an unreleased or unsatisfied writ of attachment or execution levied upon it.

Upon an uncured material breach of an obligation under any one of the above six license agreements by a party, the other party has the right to terminate that agreement upon 90 days notice or 30 days notice if the breach relates to payments due to the University. In the event of a termination, Heat Biologics I, Inc. will be obligated to pay all amounts that accrued prior to such termination. Each of the above license agreements also contains other customary clauses and terms as are common in similar agreements between industry and academia, including the licensee's agreement to indemnify the University for liabilities arising out of the negligence of licensee, making the license grant subject to the Bayh-Dole act (35 U.S.C. 200 et seq.), the reservation of licensor of the right to use the licensed intellectual property rights for its internal, non-commercial purposes, limitations/disclaimers of various warranties and representations, reporting and record-keeping requirements, and licensee liability insurance requirements.

Under the above-described license agreements with the University, we have obtained exclusive rights to six different patent families. These families comprise six PCT applications, ten issued patents, two allowed patent applications, and forty-eight pending patent applications which cover the United States, Europe and Japan as well as several other countries having commercially significant markets. The six patent families associated with our *ImPACT* platform are:

"Recombinant cancer cell secreting modified heat shock protein-antigenic peptide complex."

This family of patent filings relates to methods and compositions for enhancing an immune response. More particularly, the application describes the creation of a tumor cell therapy including a cancer cell that has been engineered to secrete a heat shock protein (gp96), and the use of such therapy to enhance an anti-tumor immune response. Within this family are one soon to be granted US patent, one pending US application, one granted Australian patent, one pending Australian patent application, three granted European patents (collectively validated in 28 countries), one pending Japanese application, and one granted Japanese patent. Not including any patent term adjustments or extensions (e.g., for patent office delays or extensions/exclusivity periods provided for new drug approvals in the US and some foreign countries), the term for patents in this family extends until 2019.

"Heat Shock Protein gp96 Vaccination and Methods of Using Same"

This family of patent filings also relates to methods and compositions for enhancing an immune response. It further describes: (a) how intraperitoneal gp96-Ig administration increases recruitment of innate immune cells into the administration site, mediates proliferation of dendritic cells (DCs) and CD8 cells, and activates natural killer (NK) cells; (b) that gp96-Ig-secreting cell vaccines are more effective when gp96-Ig is continuously released; (c) that frequent gp96 immunizations can overcome tumor-induced immune suppression and retards tumor growth; and (d) that B cell depletion can enhance gp96-Ig -mediated recruitment of NK cells and retention of DCs in the administration site. Within this family are one granted Australian patent, and one pending application each in the U.S., Canada, China, Europe, Israel, India, Japan, South Korea, and Hong Kong. Not including any patent term adjustments or extensions, the term for patents in this family extends until 2029.

“Allogenic Cancer Cell Based Immunotherapy”

This family of patent filings also relates to methods and compositions for enhancing an immune response. It further describes: (a) making vaccines cells allogeneic by expressing exogenous major histocompatibility complex (MHC) antigens; (b) B cell depletion to augment the effectiveness of the vaccines; and (c) the enhancement of anti-tumor immune responses using multiple immunizations less than two weeks apart. Within this family are one granted Australian patent, one granted U.S. patent, one granted European patent and one pending application each in the US, Canada, China, Europe, Israel, India, Japan, and South Korea. Not including any patent term adjustments or extensions, the term for patents in this family extends until 2029.

“Cancer Treatment”

This family of patent filings contains results from a Phase 1 clinical trial of human subjects with cancer. Within this family are one pending application each in the U.S., Australia, China, Europe, India, Israel, Japan, and South Korea. Filings in Canada and Hong Kong are intended to be made before the respective deadlines. Not including any patent term adjustments or extensions, the term for patents in this family extends until 2031.

“HIV/SIV Vaccines to Generate Mucosal and Systemic Immunity” This patent family relates to the use of host cells that have been engineered to secrete a heat shock protein (gp96) to treat various chronic viral infections including those caused by HIV. Within this family are one granted South African patent, two pending applications in the US, one allowed Australian application and one pending application Canada, China, Europe, India, the Philippines, Singapore, and Hong Kong. Not including any patent term adjustments or extensions, the term for patents in this family extends until 2029.

“Combined Cell Based Gp96-Ig-SIV/HIV, Recombinant Gp120 Protein Vaccination for Protection From SIV/HIV”

This patent family relates to combination therapies for treating chronic viral infections including HIV. The combination therapy uses host cells that have been engineered to secrete a heat shock protein (gp96) to induce antiviral T cell responses and soluble viral antigens to induce antiviral antibody responses. Within this family are one pending application each in the U.S., Australia, Canada, China, Europe, India, Japan, the Philippines, South Africa, and South Korea. Not including any patent term adjustments or extensions, the term for patents in this family extends until 2032.

In April 2013, we entered into an agreement with the University under which the University granted us an option to obtain an exclusive license to the following patent-related rights:

- U.S. patent application serial number 12/303,036 entitled “Perforin-2 Proteins” filed December 2, 2008 and U.S. patent application serial number 61/637.455 entitled “Perforin-2 Defense Against Invasive and Multi-drug Resistant Bacteria” filed on April 21, 2012; all U.S. patents and foreign patents and patent applications based on these U.S. applications; as well as all divisionals, continuations, and those claims in continuations-in-parts (to the extent they are sufficiently described in the aforementioned applications) of the foregoing, and any re-examinations or reissues of the foregoing.

In consideration for the option, we are obligated to pay the University an option fee of $2,000 and to reimburse the University $3,000 for past patent costs. The term of the option is twelve months and is extendible so long as we continue to pay ongoing patent expenses. We are currently in the process of negotiating the terms of an exclusive license for this portfolio.

In addition to the licenses obtained from the University, we have entered into agreements with (i) the Regents of the University of Michigan (“U.Mich”); and (ii) the American Type Culture Collection (“ATCC”) for the evaluation of, acquisition of commercial rights to, certain biological materials.

In July 2011, we exercised an option agreement with U.Mich and entered into an exclusive license agreement with U.Mich to use, market, offer for sale, sell and/or sublicense materials and processes related to certain bladder cancer cell lines. The term of the license is perpetual, unless terminated earlier by us or by U.Mich. As consideration for the rights granted in the license agreement, we agreed to pay U.Mich up-front license fees and additional yearly and milestone payments. We also assumed under the license agreement responsibility for any infringement of third party rights caused by our use of the licensed materials. We paid an option fee of $2,000, a license issue fee of $10,000 and are obligated to pay an annual maintenance fee of $10,000 each year until the first commercial sale of a licensed product at which time the annual maintenance fee increases to $50,000. In addition, we are obligated to make milestone payments of $25,000, $50,000 and $75,000 upon completion of a Phase 1, Phase 2 and Phase 3 trial and $250,000 upon the first commercial sale of a licensed product and $350,000 upon annual net sales of $100,000,000 or more. The license agreements provide that the licensor has the right to terminate the license should we cease to carry on our business, fail to make a required payment or otherwise materially breach or default in our obligations under the license agreement following the giving of notice and an opportunity to cure any such breach. The license agreement provides that if we do not achieve the following milestones within the required period, U.Mich has the right to terminate the license agreement: completion of a Phase 1 clinical trial on or before January 1, 2015, a Phase 2 clinical trial on or before January 1, 2017, a Phase 3 clinical trial on or before January 1, 2019 and the first commercial sale of a product that includes the materials supplied by U.Mich on or before January 1, 2020. The license agreement also contains other customary clauses and terms as are common in similar agreements between industry and academia.

In April 2011 we entered into an evaluation and biological material license agreement with the ATCC to evaluate, use, market, offer for sale, sell and/or sublicense materials and processes related to various different cell lines. In October 2013 and March 2014, this agreement was amended to add additional cell lines in exchange for additional fees. The agreement with ATCC provides for an evaluation term of twelve months subject to two additional renewals, and a non-exclusive commercial use license upon termination of the evaluation period to utilize the products we obtain in the evaluation to develop, make, use and sell licensed products. The agreement with ATCC has a term of forty years. We paid an evaluation fee and two renewal evaluation fees totaling $15,000, and are obligated to pay a $50,000 fee upon initiation of the commercial license and a less than 1% royalty based on sales of licensed products. In addition, we are obligated to make milestone payments of $15,000, $30,000 and $60,000 upon initiation of a Phase 1, Phase 2, and Phase 3 trial, respectively; and $200,000 upon receipt of marketing authorization.

Government Regulation

FDA Approval Process

In the United States, pharmaceutical products are subject to extensive regulation by the U.S. Food and Drug Administration, or the FDA. The Federal Food, Drug, and Cosmetic Act, or the FDC Act, and other federal and state statutes and regulations, govern, among other things, the research, development, testing, manufacture, storage, recordkeeping, approval, labeling, promotion and marketing, distribution, post-approval monitoring and reporting, sampling, and import and export of pharmaceutical products. Biological products used for the prevention, treatment, or cure of a disease or condition of a human being are subject to regulation under the FDC Act, except the section of the FDC Act which governs the approval of new drug applications, or NDAs. Biological products are approved for marketing under provisions of the Public Health Service Act, or PHSA, via a Biologics License Application, or BLA. However, the application process and requirements for approval of BLAs are very similar to those for NDAs, and biologics are associated with similar approval risks and costs as drugs. Failure to comply with applicable U.S. requirements may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending NDAs or BLAs, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties, and criminal prosecution.

Pharmaceutical product development for a new product or certain changes to an approved product in the U.S. typically involves preclinical laboratory and animal tests, the submission to the FDA of an investigational new drug application, or IND, which must become effective before clinical testing may commence, and adequate and well-controlled clinical trials to establish the safety and effectiveness of the drug for each indication for which FDA approval is sought. Satisfaction of FDA pre-market approval requirements typically takes many years and the actual time required may vary substantially based upon the type, complexity, and novelty of the product or disease.

Preclinical tests include laboratory evaluation of product chemistry, formulation, and toxicity, as well as animal trials to assess the characteristics and potential safety and efficacy of the product. The conduct of the preclinical tests must comply with federal regulations and requirements, including good laboratory practices. The results of preclinical testing are submitted to the FDA as part of an IND along with other information, including information about product chemistry, manufacturing and controls, and a proposed clinical trial protocol. Long term preclinical tests, such as animal tests of reproductive toxicity and carcinogenicity, may continue after the IND is submitted.

A 30-day waiting period after the submission of each IND is required prior to the commencement of clinical testing in humans. If the FDA has neither commented on nor questioned the IND within this 30-day period, the clinical trial proposed in the IND may begin.

Clinical trials involve the administration of the investigational new drug or biologic to healthy volunteers or patients under the supervision of a qualified investigator. Clinical trials must be conducted: (i) in compliance with federal regulations; (ii) in compliance with good clinical practice, or GCP, an international standard meant to protect the rights and health of patients and to define the roles of clinical trial sponsors, administrators, and monitors; as well as (iii) under protocols detailing the objectives of the trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. Each protocol involving testing on U.S. patients and subsequent protocol amendments must be submitted to the FDA as part of the IND.

The FDA may order the temporary, or permanent, discontinuation of a clinical trial at any time, or impose other sanctions, if it believes that the clinical trial either is not being conducted in accordance with FDA requirements or presents an unacceptable risk to the clinical trial patients. The study protocol and informed consent information for patients in clinical trials must also be submitted to an institutional review board, or IRB, for approval. An IRB may also require the clinical trial at the site to be halted, either temporarily or permanently, for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials to support NDAs or BLAs for marketing approval are typically conducted in three sequential phases, but the phases may overlap. In Phase 1, the initial introduction of the drug or biologic into healthy human subjects or patients, the product is tested to assess metabolism, pharmacokinetics, pharmacological actions, side effects associated with increasing doses, and, if possible, early evidence on effectiveness. Phase 2 usually involves trials in a limited patient population to determine the effectiveness of the drug or biologic for a particular indication, dosage tolerance, and optimum dosage, and to identify common adverse effects and safety risks. If a compound demonstrates evidence of effectiveness and an acceptable safety profile in Phase 2 evaluations, Phase 3 trials are undertaken to obtain the additional information about clinical efficacy and safety in a larger number of patients, typically at geographically dispersed clinical trial sites, to permit the FDA to evaluate the overall benefit-risk relationship of the drug or biologic and to provide adequate information for the labeling of the product. In most cases, the FDA requires two adequate and well-controlled Phase 3 clinical trials to demonstrate the efficacy of the drug or biologic. A single Phase 3 trial with other confirmatory evidence may be sufficient in rare instances where the study is a large multicenter trial demonstrating internal consistency and a statistically very persuasive finding of a clinically meaningful effect on mortality, irreversible morbidity or prevention of a disease with a potentially serious outcome and confirmation of the result in a second trial would be practically or ethically impossible.

After completion of the required clinical testing, an NDA or BLA is prepared and submitted to the FDA. FDA approval of the NDA or BLA is required before marketing of the product may begin in the U.S. The NDA or BLA must include the results of all preclinical, clinical, and other testing and a compilation of data relating to the product's pharmacology, chemistry, manufacture, and controls. The cost of preparing and submitting an NDA or BLA is substantial. The submission of most NDAs and BLAs is additionally subject to a substantial application user fee, currently exceeding $1,958,000, and the manufacturer and/or sponsor under an approved new drug application are also subject to annual product and establishment user fees, currently exceeding $98,000 per product and $526,000 per establishment. These fees are typically increased annually.

The FDA has 60 days from its receipt of an NDA or BLA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted for filing, the FDA begins an in-depth review. The FDA has agreed to certain performance goals in the review of NDAs and BLAs. Most such applications for standard review drug or biologic products are reviewed within ten to twelve months; most applications for priority review drugs or biologics are reviewed in six to eight months. The FDA can extend these reviews by three months. Priority review can be applied to drugs that the FDA determines offer major advances in treatment, or provide a treatment where no adequate therapy exists. For biologics, priority review is further limited only for products intended to treat a serious or life-threatening disease relative to the currently approved products. The review process for both standard and priority review may be extended by the FDA for three additional months to consider certain late-submitted information, or information intended to clarify information already provided in the submission.

The FDA may also refer applications for novel drug or biologic products, or drug or biologic products that present difficult questions of safety or efficacy, to an advisory committee – typically a panel that includes clinicians and other experts – for review, evaluation, and a 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 an NDA or BLA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. Additionally, the FDA will inspect the facility or the facilities at which the drug is manufactured. FDA will not approve the product unless compliance with current good manufacturing practice, or cGMP, is satisfactory and the NDA or BLA contains data that provide substantial evidence that the drug or biologic is safe and effective in the indication studied.

After the FDA evaluates the NDA or BLA and the manufacturing facilities, it issues either an approval letter or a complete response letter. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing, or information, in order for the FDA to reconsider the application. If, or when, those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA or BLA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included.

An approval letter authorizes commercial marketing of the drug or biologic with specific prescribing information for specific indications. As a condition of NDA or BLA approval, the FDA may require a risk evaluation and mitigation strategy, or REMS, to help ensure that the benefits of the drug or biologic outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The requirement for a REMS can materially affect the potential market and profitability of the product. Moreover, product approval may require substantial post-approval testing and surveillance to monitor the product's safety or efficacy. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

Changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new NDA or BLA or NDA or BLA supplement before the change can be implemented. An NDA or BLA supplement for a new indication typically requires clinical data similar to that in the original application, and the FDA uses the same procedures and actions in reviewing NDA or BLA supplements as it does in reviewing NDAs or BLAs.

Post-Approval Requirements

Once an NDA or BLA is approved, a product will be subject to certain post-approval requirements. For instance, the FDA closely regulates the post-approval marketing and promotion of drugs and 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. Drugs and biologics may be marketed only for the approved indications and in accordance with the provisions of the approved labeling.

Adverse event reporting and submission of periodic reports is required following FDA approval of an NDA or BLA. The FDA also may require post-marketing testing, known as Phase 4 testing, REMS, and surveillance to monitor the effects of an approved product, or the FDA may place conditions on an approval that could restrict the distribution or use of the product. In addition, quality control, drug manufacture, packaging, and labeling procedures must continue to conform to cGMPs after approval. Drug and biologic manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies. Registration with the FDA subjects entities to periodic unannounced inspections by the FDA, during which the agency inspects manufacturing facilities to assess compliance with cGMPs. Accordingly, manufacturers must continue to expend time, money, and effort in the areas of production and quality-control to maintain compliance with cGMPs. Regulatory authorities may withdraw product approvals or request product recalls if a company fails to comply with regulatory standards, if it encounters problems following initial marketing, or if previously unrecognized problems are subsequently discovered.

Orphan Drugs

Under the Orphan Drug Act, the FDA may grant orphan drug designation to drugs or biologics intended to treat a rare disease or condition – generally a disease or condition that affects fewer than 200,000 individuals in the U.S. Orphan drug designation must be requested before submitting an NDA or BLA. After the FDA grants orphan drug designation, the generic identity of the drug or biologic and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. The first NDA or BLA applicant to receive FDA approval for a particular active ingredient to treat a particular disease with FDA orphan drug designation is entitled to a seven-year exclusive marketing period in the U.S. for that product, for that indication. During the seven-year exclusivity period, the FDA may not approve any other applications to market the same drug or biologic for the same disease, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the NDA or BLA application user fee.

Fast Track Designation and Accelerated Approval

The FDA is required to facilitate the development, and expedite the review, of drugs or biologics that are intended for the treatment of a serious or life-threatening disease or condition for which there is no effective treatment and which demonstrate the potential to address unmet medical needs for the condition. Under the fast track program, the sponsor of a new drug or biologic candidate may request that the FDA designate the candidate for a specific indication as a fast track drug or biologic concurrent with, or after, the filing of the IND for the candidate. The FDA must determine if the drug or biologic candidate qualifies for fast track designation within 60 days of receipt of the sponsor's request.

Under the fast track program and FDA's accelerated approval regulations, the FDA may approve a drug or biologic for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that 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.

In clinical trials, a surrogate endpoint is a measurement of laboratory or clinical signs of a disease or condition that substitutes for a direct measurement of how a patient feels, functions, or survives. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. A drug or biologic candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, will allow the FDA to withdraw the drug or biologic from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated regulations are subject to prior review by the FDA.

In addition to other benefits such as the ability to use surrogate endpoints and engage in more frequent interactions with the FDA, the FDA may initiate review of sections of a fast track product's NDA or BLA before the application is complete. This rolling review is available if the applicant provides, and the FDA approves, a schedule for the submission of the remaining information and the applicant pays applicable user fees. However, the FDA's time period goal for reviewing an application does not begin until the last section of the NDA or BLA is submitted. Additionally, the fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Pediatric Information

Under the Pediatric Research Equity Act, or PREA, NDAs or BLAs or supplements to NDAs or BLAs must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. The FDA may grant full or partial waivers, or deferrals, for submission of data. Unless otherwise required by regulation, PREA does not apply to any drug for an indication for which orphan designation has been granted.

Additional Controls for Biologics

To help reduce the increased risk of the introduction of adventitious agents, the PHSA emphasizes the importance of manufacturing controls for products whose attributes cannot be precisely defined. The PHSA also provides authority to the FDA to immediately suspend licenses in situations where there exists a danger to public health, to prepare or procure products in the event of shortages and critical public health needs, and to authorize the creation and enforcement of regulations to prevent the introduction or spread of communicable diseases in the United States and between states.

After a BLA is approved, the product may also be subject to official lot release as a condition of approval. As part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot. The FDA may also perform certain confirmatory tests on lots of some products, such as viral vaccines, before releasing the lots for distribution by the manufacturer. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products. As with drugs, after approval of biologics, manufacturers must address any safety issues that arise, are subject to recalls or a halt in manufacturing, and are subject to periodic inspection after approval.

Biosimilars

The Biologics Price Competition and Innovation Act of 2009, or BPCIA, creates an abbreviated approval pathway for biological products shown to be highly similar to or interchangeable with an FDA-licensed reference biological product. Biosimilarity sufficient to reference a prior FDA-approved product requires that there be no differences in conditions of use, route of administration, dosage form, and strength, and no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency. Biosimilarity must be shown through analytical studies, animal studies, and at least one clinical study, absent a waiver by the Secretary. A biosimilar product may be deemed interchangeable with a prior approved product if it meets the higher hurdle of demonstrating that it can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. No biosimilar or interchangeable products have been approved under the BPCIA to date. Complexities associated with the larger, and often more complex, structures of biological products, as well as the process by which such products are manufactured, pose significant hurdles to implementation which are still being evaluated by the FDA.

A reference biologic is granted twelve years of exclusivity from the time of first licensure of the reference product, and no application for a biosimilar can be submitted for four years from the date of licensure of the reference product. The first biologic product submitted under the abbreviated approval pathway that is determined to be interchangeable with the reference product has exclusivity against a finding of interchangeability for other biologics for the same condition of use for the lesser of (i) one year after first commercial marketing of the first interchangeable biosimilar, (ii) eighteen months after the first interchangeable biosimilar is approved if there is no patent challenge, (iii) eighteen months after resolution of a lawsuit over the patents of the reference biologic in favor of the first interchangeable biosimilar applicant, or (iv) 42 months after the first interchangeable biosimilar's application has been approved if a patent lawsuit is ongoing within the 42-month period.

Cell and Tissue Based Biologics

Establishments that manufacture cell and tissue based products must comply with the FDA's current good tissue practices, or cGTP, which are FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of such products. The primary intent of the cGTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable disease. FDA regulations also include requirements for a unified registration and listing system, donor screening and testing, adverse reaction reporting, and labeling.

Cell and tissue based products may also be subject to the same approval standards, including demonstration of safety and efficacy, as other biologic and drug products if they meet certain criteria such as if the cells or tissues are more than minimally manipulated or if they are intended for a non-homologous use.

Disclosure of Clinical Trial Information

Sponsors of clinical trials of FDA-regulated products, including drugs, are required to register and disclose certain clinical trial information. Information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed until the new product or new indication being studied has been approved. Competitors may use this publicly available information to gain knowledge regarding the progress of development programs.

Non-U.S. Regulation

Before our products can be marketed outside of the U.S., they are subject to regulatory approval of the respective authorities in the country in which the product should be marketed. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary widely from country to country. No action can be taken to market any product in a country until an appropriate application has been approved by the regulatory authorities in that country. The current approval process varies from country to country, and the time spent in gaining approval varies from that required for FDA approval. In certain countries, the sales price of a product must also be approved. The pricing review period often begins after market approval is granted. Even if a product is approved by a regulatory authority, satisfactory prices might not be approved for such product.

In Europe, marketing authorizations may be submitted at a centralized, a decentralized or national level. The centralized procedure is mandatory for the approval of biotechnology products and provides for the grant of a single marketing authorization that is valid in all European Union member states. As of January 1995, a mutual recognition procedure is available at the request of the applicant for all medicinal products that are not subject to the centralized procedure. There can be no assurance that the chosen regulatory strategy will secure regulatory approvals on a timely basis or at all.

While we intend to market our products outside the United States in compliance with our respective license agreements, we have not made any applications with non-U.S. authorities and have no timeline for such applications or marketing.

Research and Development

We have built an internal and external research and development organization that includes expertise in discovery research, preclinical development, product formulation, analytical and medicinal chemistry, manufacturing, clinical development and regulatory and quality assurance. We engage third parties on a limited basis to conduct portions of our preclinical research; however, we are not substantially dependent upon any third parties for our preclinical research nor do any of these third parties conduct a major portion of our preclinical research. Research and development expenses were $2,737,688 and $902,938 during the years ended December 31, 2013 and 2012, respectively.

Employees

As of March 15, 2014, we had a total of 9 employees, of which 8 are full-time employees and 1 is part-time. We believe our relationships with our employees are satisfactory. None of our employees is represented by a labor union. We anticipate that we will need to identify, attract, train and retain other highly skilled personnel to pursue our development program. Hiring for such personnel is competitive, and there can be no assurance that we will be able to retain our key employees or attract, assimilate or retain the qualified personnel necessary for the development of our business.

Legal Proceedings

There are currently no pending legal proceedings against the Company or its subsidiaries.

Item 1A. ***Risk Factors***

Investing in our common stock involves a high degree of risk. In addition to the risks related to our business set forth in this Form 10-K and the other information included and incorporated by reference in this Form 10-K, you should carefully consider the risks described below before purchasing our common stock. Additional risks, uncertainties and other factors not presently known to us or that we currently deem immaterial may also impair our business operations.

Risks Relating to our Company

We have had limited operations to date.

We are a start-up entity and have had limited operations to date. As a start-up entity, we are subject to many of the risks common to such enterprises, including our ability to implement our business plan, market acceptance of our proposed business and products, under-capitalization, cash shortages, limitations with respect to personnel, financing and other resources, competition from better funded and experienced companies, and uncertainty of our ability to generate revenues. There is no assurance that our activities will be successful or will result in any revenues or profit, and the likelihood of our success must be considered in light of the stage of our development. Even if we generate revenue, there can be no assurance that we will be profitable. In addition, no assurance can be given that we will be able to consummate our business strategy and plans, or that financial, technological, market, or other limitations may force us to modify, alter, significantly delay, or significantly impede the implementation of such plans. We have insufficient results for investors to use to identify historical trends. Investors should consider our prospects in light of the risk, expenses and difficulties we will encounter as an early stage company. Our revenue and income potential is unproven and our business model is continually evolving. We are subject to the risks inherent to the operation of a new business enterprise, and cannot assure you that we will be able to successfully address these risks.

We have a limited operating history upon which to evaluate our ability to commercialize our products.

We are a development-stage company and our success is dependent upon our ability to obtain regulatory approval for and commercialize our products and we have not demonstrated an ability to perform the functions necessary for the approval or successful commercialization of any product candidates. The successful commercialization of any product candidates will require us to perform a variety of functions, including:

- continuing to undertake pre-clinical development and initiate clinical trials;
- participating in regulatory approval processes;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

While various members of our management and staff have significant experience in conducting cancer trials, the Company, to date, has not successfully completed any clinical trials and has no experience conducting or enrolling patients in clinical trials. Until recently, our operations have been limited primarily to organizing and staffing the Company, acquiring, developing and securing our proprietary technology and undertaking pre-clinical trials of our product candidates. These operations provide a limited basis for you to assess our ability to commercialize our product candidates and the advisability of investing in our securities.

We currently have no product revenues and may not generate revenue at any time in the near future, if at all.

We currently have no products for sale and we cannot guarantee that we will ever have any drug products approved for sale. We and our product candidates are subject to extensive regulation by the U.S. Food and Drug Administration, or FDA, and comparable regulatory authorities in other countries governing, among other things, research, testing, clinical trials, manufacturing, labeling, promotion, marketing, adverse event reporting and recordkeeping of our product candidates. Until, and unless, we receive approval from the FDA and other regulatory authorities for our product candidates, we cannot commercialize our product candidates and will not have product revenues. For the foreseeable future, we will have to fund all of our operations and capital expenditures from cash on hand, grants, and, potentially, future offerings. We believe we have sufficient cash on hand to fund our current operating plans and capital expenditure requirements for at least 12 months. However, changes may occur that would consume our available capital before that time, including changes in and progress of our development activities, acquisitions of additional candidates and changes in regulation. Moreover, pre-clinical studies and clinical trials may not start or be completed as we forecast and may not achieve the desired results.

We may continue to generate operating losses and experience negative cash flows and it is uncertain whether we will achieve profitability.

For the years ended December 31, 2013 and December 31, 2012, we incurred a net loss of ($6,609,864) and ($2,471,147), respectively. We have also incurred a deficit accumulated during the development stage of ($12,346,630). We may continue to incur operating losses until such time, if ever, as we are able to achieve sufficient levels of revenue from operations. Our ability to achieve profitability will depend on the market acceptance of our product offerings and our capacity to develop, introduce and sell our products to our targeted markets. There can be no assurance that we will ever generate significant sales or achieve profitability. Accordingly, the extent of future losses and the time required to achieve profitability, if ever, cannot be predicted at this point.

Even if we succeed in developing and commercializing one or more product candidates, we expect to incur substantial losses for the foreseeable future and may never become profitable. We also expect to continue to incur significant operating and capital expenditures and anticipate that our expenses will increase substantially in the foreseeable future as we:

- continue to undertake pre-clinical development and initiate clinical trials for product candidates;
- seek regulatory approvals for product candidates;
- implement additional internal systems and infrastructure; and
- hire additional personnel.

We also expect to experience negative cash flows for the foreseeable future as we fund our operating losses and capital expenditures. As a result, we will need to generate significant revenues or raise additional financing in order to achieve and maintain profitability. We may not be able to generate these revenues or achieve profitability in the future. Our failure to achieve or maintain profitability would likely negatively impact the value of our securities and could prevent us from continuing as a going concern.

Risks Relating to our Business

If we do not obtain the necessary regulatory approvals in the U.S. and/or other countries we will not be able to sell our product candidates.

We cannot assure you that we will receive the approvals necessary to commercialize any of our product candidates or any product candidates we acquire or develop in the future. We will need FDA approval to commercialize our product candidates in the U.S. and approvals from the FDA-equivalent regulatory authorities in foreign jurisdictions to commercialize our product candidates in those jurisdictions. In order to obtain FDA approval of any product candidate, we must submit to the FDA a Biologics License Application, or BLA, demonstrating that the product candidate is safe, pure and potent, or effective for its intended use. This demonstration requires significant research including pre-clinical studies, as well as clinical trials. Satisfaction of the FDA's regulatory requirements typically takes many years, depends upon the type, complexity and novelty of the product candidate and requires substantial resources for research, development and testing. We cannot predict whether our clinical trials will demonstrate the safety and efficacy of our product candidates or if the results of any clinical trials will be sufficient to advance to the next phase of development or for approval from the FDA. We also cannot predict whether our research and clinical approaches will result in drugs or therapeutics that the FDA considers safe and effective for the proposed indications. The FDA has substantial discretion in the drug approval process. The approval process may be delayed by changes in government regulation, future legislation or administrative action or changes in FDA policy that occur prior to or during our regulatory review. Delays in obtaining regulatory approvals may:

- prevent or delay commercialization of, and our ability to derive product revenues from, our product candidates; and
- diminish any competitive advantages that we may otherwise believe that we hold.

Even if we comply with all FDA requests, the FDA may ultimately reject one or more of our BLAs. We may never obtain regulatory clearance for any of our product candidates. Failure to obtain FDA approval of any of our product candidates will severely undermine our business by leaving us without a saleable product, and therefore without any source of revenues, until another product candidate can be developed. There is no guarantee that we will ever be able to develop or acquire another product candidate.

In addition, the FDA may require us to conduct additional pre-clinical and clinical testing or to perform post-marketing studies, as a condition to granting marketing approval of a product. Regulatory approval of oncology products often requires that patients in clinical trials be followed for long periods to assess their overall survival. The results generated after approval could result in loss of marketing approval, changes in product labeling, and/or new or increased concerns about the side effects or efficacy of a product. The FDA has significant post-market authority, including the explicit authority to require post-market studies and clinical trials, labeling changes based on new safety information, and compliance with FDA-approved risk evaluation and mitigation strategies. The FDA's exercise of its authority has in some cases resulted, and in the future could result, in delays or increased costs during product development, clinical trials and regulatory review, increased costs to comply with additional post-approval regulatory requirements and potential restrictions on sales of approved products.

In foreign jurisdictions, we must also receive approval from the appropriate regulatory authorities before we can commercialize any vaccines. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval procedures described above. There can be no assurance that we will receive the approvals necessary to commercialize our product candidate for sale outside the United States.

Our product candidates are in early stages of development.

Because our product candidates are in early stages of development they will require extensive pre-clinical and clinical testing. Only one product candidate is currently ready for Phase 2 clinical trials. We cannot predict with any certainty if or when we might submit a BLA for regulatory approval for any of our product candidates or whether any such BLA will be accepted for review by the FDA, or whether any BLA will be approved upon review.

Even if our clinical trials are completed as planned, we cannot be certain that their results will support our proposed indications. Success in pre-clinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the results of later clinical trials will replicate the results of prior clinical trials and pre-clinical testing. For example, the only clinical study completed to date with one of our product candidates by the inventor of the technology that we license showed evidence of an immune response in late-stage NSCLC patients exposed to HS-110. However, our future HS-110 trials will use doses and dosing regimens which have previously been tested in only 0 to 3 subjects, and will be conducted in patients with less advanced disease who may have different responses. In addition, immune response is not an acceptable regulatory endpoint for approval, and no actual clinical or tumor responses were observed in that study. Moreover, the HS-110 Phase 1 trial involved a small sample size, was not blinded and was sponsored by an individual who has a significant financial interest in the success of the product candidate. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for their proposed uses. This failure could cause us to abandon a product candidate and may delay development of other product candidates. Any delay in, or termination of, our clinical trials will delay and possibly preclude the filing of any BLAs with the FDA and, ultimately, our ability to commercialize our product candidates and generate product revenues.

Clinical trials are very expensive, time-consuming and difficult to design and implement.

As part of the regulatory process, we must conduct clinical trials for each product candidate to demonstrate safety and efficacy to the satisfaction of the FDA and other regulatory authorities. The number and design of the clinical trials that will be required varies depending upon product candidate, the condition being evaluated and the trial results themselves. Therefore, it is difficult to accurately estimate the cost of the clinical trials. Clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is also time consuming. We estimate that clinical trials of our product candidates will take at least several years to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be delayed or prevented by several factors, including:

- unforeseen safety issues;
- failure to determine appropriate dosing;
- greater than anticipated cost of our clinical trials;
- failure to demonstrate effectiveness during clinical trials;
- slower than expected rates of patient recruitment or difficulty obtaining investigators;
- patient drop-out or discontinuation;
- inability to monitor patients adequately during or after treatment;
- third party contractors failing to comply with regulatory requirements or meet their contractual obligations to us in a timely manner;
- insufficient or inadequate supply or quality of product candidates or other necessary materials to conduct our trials;
- potential additional safety monitoring, or other conditions required by FDA or comparable foreign regulatory authorities regarding the scope or design of our clinical trials, or other studies requested by regulatory agencies;
- problems engaging IRBs to oversee trials or in obtaining and maintaining IRB approval of studies;
- imposition of clinical hold or suspension of our clinical trials by regulatory authorities; and
- inability or unwillingness of medical investigators to follow our clinical protocols.

In addition, we or the FDA may suspend or terminate our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA finds deficiencies in our Investigational New Drug, or IND, submissions or the conduct of these trials. Therefore, we cannot predict with any certainty when, if ever, future clinical trials will commence or be completed. We submitted the protocol for our planned Phase 2 trial of HS-110 to the FDA in March 2014. There can be no assurance that the FDA will not have comments regarding the protocol.

There is uncertainty as to market acceptance of our technology and product candidates.

Even if the FDA approves one or more of our product candidates, the products may not gain broad market acceptance among physicians, healthcare payers, patients, and the medical community. We have conducted our own research into the markets for our product candidates; however we cannot guarantee market acceptance of our product candidates, if approved, and have somewhat limited information on which to estimate our anticipated level of sales. Our product candidates, if approved, will require patients, healthcare providers and doctors to adopt our technology. Our industry is susceptible to rapid technological developments and there can be no assurance that we will be able to match any new technological advances. If we are unable to match the technological changes in the needs of our customers the demand for our products will be reduced. Acceptance and use of any products we market will depend upon a number of factors including:

- perceptions by members of the health care community, including physicians, about the safety and effectiveness of our products;
- limitation on use or warnings required by FDA in our product labeling;
- cost-effectiveness of our products relative to competing products;
- convenience and ease of administration;
- potential advantages of alternative treatment methods;
- availability of reimbursement for our products from government or other healthcare payers; and
- effectiveness of marketing and distribution efforts by us and our licensees and distributors, if any.

Because we expect virtually all of our product revenues for the foreseeable future to be generated from sales of our current product candidates, if approved, the failure of these therapeutics to find market acceptance would substantially harm our business and would adversely affect our revenue.

Our development program depends upon third-party researchers who are outside our control.

We are dependent upon independent investigators and collaborators, such as universities and medical institutions, to conduct our pre-clinical and clinical trials under agreements with us. These collaborators are not our employees and we cannot control the amount or timing of resources that they devote to our programs. These investigators may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking such programs ourselves. If outside collaborators fail to devote sufficient time and resources to our development programs, or if their performance is substandard, the approval of our FDA applications, if any, and our introduction of new product candidates, if any, will be delayed if obtained at all. These collaborators may also have relationships with other commercial entities, some of whom may compete with us. If our collaborators assist our competitors at our expense, our competitive position would be harmed.

To date, in excess of $14,000,000 of funding has been awarded by the NIH to the primary inventor of the technology we license. We have little control over the direction of the NIH grant funds that have been received by the primary inventor of the technology we license and since payment is made to the inventor as opposed to us, we do not recognize any revenue from such grant funds nor do they fund any expenses that we incur.

Although earmarked for further development of the technology that we license, any funds awarded to the primary inventor are used in his discretion and we have little control over his use of the funds.

We will rely exclusively on third parties to formulate and manufacture our product candidates.

We have no experience in the formulation, development or manufacturing of biologics and do not intend to establish our own manufacturing facilities. We lack the resources and expertise to formulate or manufacture our own product candidates. The investigational products for our planned Phase 1 and Phase 2 clinical trials are manufactured by our contractors under current good manufacturing practices, or cGMPs and we have entered into agreements with commercial-scale manufacturers for the production and supply of investigational product for additional Phase 2 and Phase 3 clinical trials as well as commercialization. We must also develop and validate a potency assay prior to submission of a license application. Such assays have traditionally proven difficult to develop for cell-based products and must be established prior to initiating any Phase 3 clinical trials. If any of our current product candidates, or any product candidates we may develop or acquire in the future, receive FDA approval, we will rely on one or more third-party contractors for manufacturing. Our anticipated future reliance on a limited number of third-party manufacturers exposes us to the following risks:

We may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers with appropriate expertise and facilities is limited.

If we change manufacturers at any point during the development process or after approval we will be required to demonstrate comparability between the products made by the old and new manufacturers. If we are unable to do so, we may need to conduct additional clinical trials with product manufactured by the new manufacturer. For example, the manufacturer of the clinical trial material we intend to use for any future Phase 3 trials of HS-110 and of our commercial product, if approved, is a different manufacturer from the manufacturer of the inventor's completed Phase 1 trial of HS-110 and the early portion of our planned initial Phase 2 trial of HS-110. Accordingly, it may be necessary to evaluate the comparability of the HS-101 produced by the two different manufacturers during the third stage of our planned Phase 2 trial of HS-110.

If we change the manufacturer of a product subsequent to the approval of the product, we will need to obtain approval from the FDA of the change in manufacturer. Any such approval would likely require significant testing and expense, and the new manufacturer may be subject to a cGMP inspection prior to approval.

Our third-party manufacturers might be unable to formulate and manufacture our product candidates in the volume and with the quality required to meet our clinical needs and commercial needs, if any.

Our contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our product candidates.

Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, and corresponding state agencies to ensure compliance with cGMPs and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards.

If any third-party manufacturer makes improvements in the manufacturing process for our products, we may not own, or may have to share, the intellectual property rights to the innovation.

Our contract manufacturers have in the past and may in the future encounter difficulties in achieving quality control and quality assurance and may experience shortages in qualified personnel. Our contract manufacturers are subject to inspections by the FDA and comparable agencies in other jurisdictions to assess compliance with applicable regulatory requirements. Any failure to follow cGMP or other regulatory requirements or delay, interruption or other issues that arise in the manufacture, packaging, or storage of our products as a result of a failure of the facilities or operations of third parties to comply with regulatory requirements or pass any regulatory authority inspection could significantly impair our ability to develop and commercialize our products, including leading to significant delays in the availability of products for our clinical studies or the termination or hold on a clinical study, or the delay or prevention of a filing or approval of marketing applications for our product candidates. Significant noncompliance could also result in the imposition of sanctions, including fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation. If we or our contract manufacturers are not able to maintain regulatory compliance, we may not be permitted to market our products and/or may be subject to product recalls, seizures, injunctions, or criminal prosecution.

Each of these risks could delay our clinical trials, the approval, if any, of our product candidates by the FDA or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenues.

Even if we are able to obtain regulatory approval for our product candidates, we will continue to be subject to ongoing and extensive regulatory requirements, and our failure, or the failure of our contract manufacturers, to comply with these requirements could substantially harm our business.

If the FDA approves any of our product candidates, the labeling, manufacturing, packaging, adverse event reporting, storage, advertising, promotion and record-keeping for our products will be subject to ongoing FDA requirements and continued regulatory oversight and review. We may also be subject to additional FDA post-marketing obligations. If we are not able to maintain regulatory compliance, we may not be permitted to market our product candidates and/or may be subject to product recalls or seizures. The subsequent discovery of previously unknown problems with any marketed product, including adverse events of unanticipated severity or frequency, may result in restrictions on the marketing of the product, and could include withdrawal of the product from the market.

We have no experience selling, marketing or distributing products and have no internal capability to do so.

We currently have no sales, marketing or distribution capabilities. We do not anticipate having the resources in the foreseeable future to allocate to the sales and marketing of our proposed products, if approved. Our future success depends, in part, on our ability to enter into and maintain collaborative relationships for such capabilities, the collaborator's strategic interest in the products under development and such collaborator's ability to successfully market and sell any such products. We intend to pursue collaborative arrangements regarding the sales and marketing of our products, however, there can be no assurance that we will be able to establish or maintain such collaborative arrangements, or if able to do so, that our collaborators will have effective sales forces. To the extent that we decide not to, or are unable to, enter into collaborative arrangements with respect to the sales and marketing of our proposed products, significant capital expenditures, management resources and time will be required to establish and develop an in-house marketing and sales force with technical expertise. There can also be no assurance that we will be able to establish or maintain relationships with third party collaborators or develop in-house sales and distribution capabilities. To the extent that we depend on third parties for marketing and distribution, any revenues we receive will depend upon the efforts of such third parties, and there can be no assurance that such efforts will be successful. In addition, there can also be no assurance that we will be able to successfully market and sell our products in the United States or overseas on our own.

We may not be successful in establishing and maintaining strategic partnerships, which could adversely affect our ability to develop and commercialize products.

We may seek to enter into strategic partnerships in the future, including alliances with other biotechnology or pharmaceutical companies, to enhance and accelerate the development and commercialization of our products. We face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for any future product candidates and programs because our research and development pipeline may be insufficient, our product candidates and programs may be deemed to be at too early of a stage of development for collaborative effort and/or third parties may not view our product candidates and programs as having the requisite potential to demonstrate safety and efficacy or return on investment. Even if we are successful in our efforts to establish strategic partnerships, the terms that we agree upon may not be favorable to us and we may not be able to maintain such strategic partnerships if, for example, development or approval of a product candidate is delayed or sales of an approved product are disappointing.

If we ultimately determine that entering into strategic partnerships is in our best interest but either fail to enter into, are delayed in entering into or fail to maintain such strategic partnerships:

- the development of certain of our current or future product candidates may be terminated or delayed;
- our cash expenditures related to development of certain of our current or future product candidates may increase significantly and we may need to seek additional financing;
- we may be required to hire additional employees or otherwise develop expertise, such as sales and marketing expertise, for which we have not budgeted;
- we will bear all of the risk related to the development of any such product candidates;
- the competitiveness of any product candidate that is commercialized could be reduced.

To the extent we elect to enter into licensing or collaboration agreements to partner our product candidates, our dependence on such relationships may adversely affect our business.

Our commercialization strategy for certain of our product candidates may depend on our ability to enter into agreements with collaborators to obtain assistance and funding for the development and potential commercialization of these product candidates. Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Even if we are successful in entering into one or more collaboration agreements, collaborations may involve greater uncertainty for us, as we have less control over certain aspects of our collaborative programs than we do over our proprietary development and commercialization programs. We may determine that continuing a collaboration under the terms provided is not in our best interest, and we may terminate the collaboration. Our collaborators could delay or terminate their agreements, and our product candidates subject to collaborative arrangements may never be successfully developed or commercialized.

Further, our future collaborators may develop alternative products or pursue alternative technologies either on their own or in collaboration with others, including our competitors, and the priorities or focus of our collaborators may shift such that our programs receive less attention or fewer resources than we would like, or they may be terminated altogether. Any such actions by our collaborators may adversely affect our business prospects and ability to earn revenues. In addition, we could have disputes with our future collaborators, such as the interpretation of terms in our agreements. Any such disagreements could lead to delays in the development or commercialization of any potential products or could result in time-consuming and expensive litigation or arbitration, which may not be resolved in our favor.

If we cannot compete successfully for market share against other drug companies, we may not achieve sufficient product revenues and our business will suffer.

The market for our product candidates is characterized by intense competition and rapid technological advances. If any of our product candidates receives FDA approval, it will compete with a number of existing and future drugs and therapies developed, manufactured and marketed by others. Existing or future competing products may provide greater therapeutic convenience or clinical or other benefits for a specific indication than our products, or may offer comparable performance at a lower cost. If our products fail to capture and maintain market share, we may not achieve sufficient product revenues and our business will suffer.

We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors have oncology compounds already approved or in development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research and development programs or have substantially greater financial resources than we do, as well as significantly greater experience in:

- developing drugs, biologics and other therapies;
- undertaking pre-clinical testing and clinical trials;
- obtaining FDA and other regulatory approvals of drugs, biologics and other therapies;
- formulating and manufacturing drugs, biologics and other therapies; and
- launching, marketing and selling drugs, biologics and other therapies.

We have limited protection of our intellectual property.

We intend to rely on a combination of common law copyright, patent, trademark, and trade secret laws and measures to protect our proprietary information. We have obtained exclusive rights to license the technology for which patent protection has been obtained; however such protection does not prevent unauthorized use of such technology. Trademark and copyright protections may be limited, and enforcement could be too costly to be effective. It may also be possible for unauthorized third parties to copy aspects of, or otherwise obtain and use, our proprietary information without authorization, including, but not limited to, product design, software, customer and prospective customer lists, trade secrets, copyrights, patents and other proprietary rights and materials. Other parties can use and register confusingly similar business, product and service names, as well as domain names, which could divert customers, resulting in a material adverse effect on our business, operating results and financial condition.

If we fail to successfully enforce our intellectual property rights, our competitive position could suffer, which could harm our operating results. Competitors may challenge the validity or scope of our patents or future patents we may obtain. In addition, our licensed patents may not provide us a meaningful competitive advantage. We may be required to spend significant resources to monitor and police our licensed intellectual property rights. We may not be able to detect infringement and our competitive position may be harmed. In addition, competitors may design around our technology or develop competing technologies. Intellectual property rights may also be unavailable or limited in some foreign countries, which could make it easier for competitors to capture market share.

The technology we license, our products or our development efforts may be found to infringe third-party intellectual property rights.

Third parties may in the future assert claims or initiate litigation related to their patent, copyright, trademark and other intellectual property rights in technology that is important to us. The asserted claims and/or litigation could include claims against us, our licensors or our suppliers alleging infringement of intellectual property rights with respect to our products or components of those products. Regardless of the merit of the claims, they could be time consuming, result in costly litigation and diversion of technical and management personnel, or require us to develop a non-infringing technology or enter into license agreements. We have not undertaken an exhaustive search to discover any third party intellectual patent rights which might be infringed by commercialization of the product candidates described herein. Although we are not currently aware of any such third party intellectual patent rights, it is possible that such rights currently exist or might be obtained in the future. In the event that a third party controls such rights and we are unable to obtain a license to such rights on commercially reasonable terms, we may not be able to sell or continue to develop our products, and may be liable for damages for such infringement. We cannot assure you that licenses will be available on acceptable terms, if at all. Furthermore, because of the potential for significant damage awards, which are not necessarily predictable, it is not unusual to find even arguably unmeritorious claims resulting in large settlements. If any infringement or other intellectual property claim made against us by any third party is successful, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results and financial condition could be materially adversely affected.

If our products, methods, processes and other technologies infringe the proprietary rights of other parties, we could incur substantial costs and we may have to:

- obtain licenses, which may not be available on commercially reasonable terms, if at all;
- abandon an infringing drug or therapy candidate;
- redesign our products or processes to avoid infringement;
- stop using the subject matter claimed in the patents held by others;
- pay damages; or
- defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our financial and management resources.

We rely on licenses to use various technologies that are material to our business and if the agreements were to be terminated or if other rights which may be necessary or we deem advisable for commercializing our intended products cannot be obtained, it would halt our ability to market our products and technology, as well as have an immediate material adverse effect on our business, operating results and financial condition.

We have licensing agreements with certain universities granting us the right to use certain critical intellectual property. The terms of the licensing agreements continues until the end of the life of the last patent to expire. If we breach the terms of these licensing agreements, including any failure to make minimum royalty payments required thereunder or failure to reach certain developmental milestones, using best efforts to introduce a licensed product in certain territories by certain dates, the licensor has the right to terminate the license. If we were to lose or otherwise be unable to maintain these licenses on acceptable terms, or find that it is necessary or appropriate to secure new licenses from other third parties, it would halt our ability to market our products and technology, which would have an immediate material adverse effect on our business, operating results and financial condition.

We may be unable to generate sufficient revenues to meet the minimum royalties or developmental milestones required under our license agreements.

For the years ended December 31, 2014, 2015, 2016, and 2017 our minimum royalty obligations under our licensing agreements, required to be paid with the passage of time, are $30,000, $30,000, $30,000, and $280,000, respectively, and thereafter through December 31, 2022, $30,000 per year. No assurance can be given that we will generate sufficient revenue or raise additional financing to make these minimum royalty payments. The license agreements also provide for certain developmental milestones. No assurance can be given that we will meet all of the required developmental milestones. Any failure to make the payments or reach the milestones required by the license agreements would permit the licensor to terminate the license. If we were to lose or otherwise be unable to maintain these licenses, it would halt our ability to market our products and technology, which would have an immediate material adverse effect on our business, operating results and financial condition.

Our ability to generate product revenues will be diminished if our therapies sell for inadequate prices or patients are unable to obtain adequate levels of reimbursement.

Our ability to commercialize our vaccines, alone or with collaborators, will depend in part on the extent to which reimbursement will be available from:

- government and health administration authorities;
- private health maintenance organizations and health insurers; and
- other healthcare payers.

Significant uncertainty exists as to the reimbursement status of newly approved healthcare products. Healthcare payers, including Medicare, are challenging the prices charged for medical products and services. Cost control initiatives could decrease the price that we would receive for any products in the future, which would limit our revenue and profitability. Government and other healthcare payers increasingly attempt to contain healthcare costs by limiting both coverage and the level of reimbursement for drugs and therapeutics. We might need to conduct post-marketing studies in order to demonstrate the cost-effectiveness of any future products to such payers' satisfaction. Such studies might require us to commit a significant amount of management time and financial and other resources. Our future products might not ultimately be considered cost-effective. Even if one of our product candidates is approved by the FDA, insurance coverage may not be available, and reimbursement levels may be inadequate, to cover such vaccines. If government and other healthcare payers do not provide adequate coverage and reimbursement levels for one of our products, once approved, market acceptance of such product could be reduced.

Legislative and regulatory changes affecting the health care industry could adversely affect our business.

Political, economic and regulatory influences are subjecting the health care industry to potential fundamental changes that could substantially affect our results of operations. U.S. and foreign governments, for example, continue to propose and pass legislation designed to reduce the cost of healthcare. In some foreign markets, the government controls the pricing and profitability of prescription pharmaceuticals. In the U.S., we expect that there will continue to be federal and state proposals to implement similar governmental controls. In addition, recent changes in the Medicare program and increasing emphasis on managed care in the United States will continue to put pressure on pharmaceutical product pricing. It is uncertain whether or when any legislative proposals will be adopted or what actions federal, state, or private payers for health care treatment and services may take in response to any health care reform proposal or legislation. We cannot predict the effect health care reforms may have on our business and we can offer no assurances that any of these reforms will not have a material adverse effect on our business. These actual and potential changes are causing the marketplace to put increased emphasis on the delivery of more cost-effective treatments. In addition, uncertainly remains regarding proposed significant reforms to the U.S. health care system.

We may not successfully effect our intended expansion.

Our success will depend upon the expansion of our operations and the effective management of our growth, which will place a significant strain on our management and on our administrative, operational and financial resources. To manage this growth, we must expand our facilities, augment our operational, financial and management systems and hire and train additional qualified personnel. If we are unable to manage our growth effectively, our business would be harmed.

We may be exposed to liability claims associated with the use of biological and hazardous materials and chemicals.

Our research and development activities may involve the controlled use of biological and hazardous materials and chemicals. Although we believe that our safety procedures for using, storing, handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot completely eliminate the risk of accidental injury or contamination from these materials. In the event of such an accident, we could be held liable for any resulting damages and any liability could materially adversely affect our business, financial condition and results of operations. In addition, the federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous or radioactive materials and waste products may require us to incur substantial compliance costs that could materially adversely affect our business, financial condition and results of operations.

We rely on key executive officers and scientific and medical advisors, and their knowledge of our business and technical expertise would be difficult to replace.

We are highly dependent on our principal scientific, regulatory and medical advisors and our chief executive officer. Other than a $2,000,000 insurance policy on the life of Jeffrey Wolf, we do not have "key person" life insurance policies for any of our officers or advisors. The loss of the technical knowledge and management and industry expertise of any of our key personnel could result in delays in product development, loss of customers and sales and diversion of management resources, which could adversely affect our operating results.

If we are unable to hire additional qualified personnel, our ability to grow our business may be harmed.

We will need to hire additional qualified personnel with expertise in pre-clinical and clinical research, government regulation, formulation and manufacturing, sales and marketing and accounting and financing. In particular, over the next 12 months, we expect to hire additional new employees. We compete for qualified individuals with numerous biopharmaceutical companies, universities and other research institutions. Competition for such individuals is intense, and we cannot be certain that our search for such personnel will be successful. Attracting and retaining qualified personnel will be critical to our success.

Certain of our officers may have a conflict of interest.

One of our officers is currently working for the Company on a part-time basis. This part-time employee also works at other jobs and has discretion to decide what time he devotes to our activities, which may result in a lack of availability when needed due to responsibilities at other jobs. We expect that any part-time officers may join the Company on a full-time basis, but there can be no assurance given that any of our officers will be so employed.

We may incur substantial liabilities and may be required to limit commercialization of our products in response to product liability lawsuits.

The testing and marketing of drug and biological product candidates entail an inherent risk of product liability. Product liability claims might be brought against us by consumers, health care providers or others selling or otherwise coming into contact with our products. Clinical trial liability claims may be filed against us for damages suffered by clinical trial subjects or their families. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products which could impact our ability to continue as a going concern. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of pharmaceutical products we develop, alone or with collaborators. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- decreased demand for any approved product candidates;
- impairment of our business reputation;
- withdrawal of clinical trial participants;
- costs of related litigation;
- distraction of management's attention;
- substantial monetary awards to patients or other claimants;
- loss of revenues; and
- the inability to successfully commercialize any approved drug candidates.

International expansion of our business exposes us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

Our business strategy incorporates international expansion, including establishing and maintaining clinician marketing and education capabilities outside of the United States and expanding our relationships with distributors and manufacturers. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as tax laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us or our distributors to obtain regulatory approvals for the sale or use of our product candidates in various countries;
- difficulties in managing foreign operations;
- complexities associated with managing multiple payor-reimbursement regimes or self-pay systems;·
- limits on our ability to penetrate international markets if our product candidates cannot be processed by a manufacturer appropriately qualified in such markets;
- financial risks, such as longer payment cycles, difficulty enforcing contracts and collecting accounts receivable and exposure to foreign currency exchange rate fluctuations;·
- reduced protection for intellectual property rights;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- failure to comply with the Foreign Corrupt Practices Act, including its books and records provisions and its anti-bribery provisions, by maintaining accurate information and control over sales and distributors' activities.

Any of these risks, if encountered, could significantly harm our future international expansion and operations and, consequently, have a material adverse effect on our financial condition, results of operations and cash flows.

We may acquire other businesses or form joint ventures or make investments in other companies or technologies that could harm our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.

As part of our business strategy, we may pursue acquisitions of businesses and assets. We also may pursue strategic alliances and joint ventures that leverage our core technology and industry experience to expand our offerings or distribution. We have no experience with acquiring other companies and limited experience with forming strategic alliances and joint ventures. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in significant write-offs or the incurrence of debt and contingent liabilities, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. Integration of an acquired company also may disrupt ongoing operations and require management resources that would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a material negative effect on our results of operations. We may not identify or complete these transactions in a timely manner, on a cost-effective basis, or at all, and we may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions or joint ventures, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration. Alternatively, it may be necessary for us to raise additional funds for acquisitions through public or private financings. Additional funds may not be available on terms that are favorable to us, or at all.

Declining general economic or business conditions may have a negative impact on our business.

Continuing concerns over United States health care reform legislation and energy costs, geopolitical issues, the availability and cost of credit and government stimulus programs in the United States and other countries have contributed to increased volatility and diminished expectations for the global economy. These factors, combined with low business and consumer confidence and high unemployment, precipitated an economic slowdown and recession. If the economic climate does not improve or continues to deteriorate, our business, as well as the financial condition of our suppliers and our third-party payors, could be adversely affected, resulting in a negative impact on our business, financial condition and results of operations.

The U.S. government may have "march-in rights" to certain of our intellectual property.

Because federal grant monies were used in support of the research and development activities that resulted in certain of our issued pending U.S. patent applications, the federal government retains what are referred to as "march-in rights" to patents that are granted on these applications.

In particular, the National Institutes of Health, which administered grant monies to the primary inventor of the technology we license, technically retain the right to require us, under certain specific circumstances, to grant the U.S. government either a nonexclusive, partially exclusive or exclusive license to the patented invention in any field of use, upon terms that are reasonable for a particular situation. Circumstances that trigger march-in rights include, for example, failure to take, within a reasonable time, effective steps to achieve practical application of the invention in a field of use, failure to satisfy the health and safety needs of the public and failure to meet requirements of public use specified by federal regulations. The National Institutes of Health can elect to exercise these march-in rights on their own initiative or at the request of a third-party.

Risks Related to Our Common Stock

Certain of our officers and directors have sufficient voting power to make corporate governance decisions that could have a significant effect on us and the other stockholders.

As of March 31, 2014, our officers and directors together beneficially own approximately 34% of our outstanding common stock on a fully diluted basis. Mr. Wolf alone through his direct and indirect holdings beneficially owns approximately 20.6% of our outstanding common stock on a fully diluted basis. As a result, Mr. Wolf, alone will be able to exert a significant degree of influence over our management and affairs and over matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change in our control and might affect the market price of our common stock, even when a change in control may be in the best interest of all stockholders. Furthermore, the interests of this concentration of ownership may not always coincide with our interests or the interests of other stockholders. Accordingly, these stockholders could cause us to enter into transactions or agreements that we would not otherwise consider.

The possible issuance of common stock subject to options and warrants may dilute the interest of stockholders.

In 2009, we adopted a 2009 Stock Option and Restricted Stock Plan under which we may grant awards to purchase 869,565 shares of our common stock, of which, 633,482 options were outstanding and 99,906 shares of restricted stock were outstanding as of December 31, 2013. In addition, as of December 31, 2013, we have 53,159 shares issuable upon exercise of warrants granted to third parties in connection with prior private placements of our equity securities and debt which excludes 125,000 shares of common stock issuable at $12.50 per share upon exercise of warrants issued to the underwriters in connection with our initial public offering. To the extent that outstanding stock options and warrants are exercised, or additional securities are issued, dilution to the interests of our stockholders may occur. Moreover, the terms upon which we will be able to obtain additional equity capital may be adversely affected since the holders of the outstanding options can be expected to exercise them at a time when we would, in all likelihood, be able to obtain any needed capital on terms more favorable to us than those provided in such outstanding options.

We have additional securities available for issuance, which, if issued, could adversely affect the rights of the holders of our common stock.

Our Third Amended and Restated Certificate of Incorporation authorizes the issuance of 50,000,000 shares of our common stock and 8,212,500 shares of Preferred Stock. In certain circumstances, the common stock and preferred stock, as well as the awards available for issuance under the 2009 Stock Option and Restricted Stock Plan, can be issued by our board of directors, without stockholder approval. Any future issuances of such stock would further dilute the percentage ownership of us held by holders of Preferred Stock and common stock. In addition, the issuance of Preferred Stock may be used as an "anti-takeover" device without further action on the part of our stockholders, and may adversely affect the holders of the common stock.

We have never paid dividends and have no plans to pay dividends in the future.

Holders of shares of our common stock are entitled to receive such dividends as may be declared by our board of directors. To date, we have paid no cash dividends on our shares of our preferred or common stock and we do not expect to pay cash dividends in the foreseeable future. We intend to retain future earnings, if any, to provide funds for operations of our business. Therefore, any return investors in our preferred or common stock may have will be in the form of appreciation, if any, in the market value of their shares of common stock.

We are an "emerging growth company," and any decision on our part to comply with certain reduced disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act enacted in April 2012, and, for as long as we continue to be an emerging growth company, we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, not being required to comply with any new requirements adopted by the Public Company Accounting Oversight Board, or the PCAOB, requiring mandatory audit firm rotation or a supplement to the auditor's report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer, not being required to comply with any new audit rules adopted by the PCAOB after April 5, 2012 unless the SEC determines otherwise, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could remain an emerging growth company until the earliest of: (i) the last day of the fiscal year in which we have total annual gross revenues of $1 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of our first sale of common equity securities pursuant to an effective registration statement; (iii) the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer. We cannot predict if investors will find our common stock less attractive if we choose to rely on these exemptions. If some investors find our common stock less attractive as a result of any choices to reduce future disclosure, there may be a less active trading market for our common stock and our stock price may be more volatile. Further, as a result of these scaled regulatory requirements, our disclosure may be more limited than that of other public companies and you may not have the same protections afforded to shareholders of such companies.

Under Section 107(b) of the Jumpstart Our Business Startups Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

As a result of being a public company, we are subject to additional reporting and corporate governance requirements that will require additional management time, resources and expense.

As a public company we are obligated to file with the U.S. Securities and Exchange Commission annual and quarterly information and other reports that are specified in the U.S. Securities Exchange Act of 1934, as amended, or the Exchange Act. We are also subject to other reporting and corporate governance requirements under the Sarbanes-Oxley Act of 2002, as amended, and the rules and regulations promulgated thereunder, all of which impose significant compliance and reporting obligations upon us and require us to incur additional expense in order to fulfill such obligations.

We have identified material weaknesses in our internal controls, and we cannot provide assurances that these weaknesses will be effectively remediated or that additional material weaknesses will not occur in the future. If our internal control over financial reporting or our disclosure controls and procedures are not effective, we may not be able to accurately report our financial results, prevent fraud, or file our periodic reports in a timely manner, which may cause investors to lose confidence in our reported financial information and may lead to a decline in our stock price.

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rule 13a-15(f) under the Exchange Act. Prior to the closing of our initial public offering in July 2013, we operated as a private company and the number and qualifications of our finance and accounting staff have not been consistent with those of a public company. We have identified material weaknesses in our internal controls with respect to our financial statement closing process of our condensed consolidated financial statements for the years ended December 31, 2013 and 2012. Our management discovered certain conditions that we deemed to be material weaknesses and significant deficiencies in our internal controls, as follows:

A lack of accounting and finance resources as well as effective oversight by those in charge of governance resulted in insufficient controls over timely financial statement preparation and review as well as the preparation and review around accounting for certain complex transactions.

The design of monitoring controls used to assess the design and operating effectiveness of our internal controls is inadequate. We also do not have an adequate internal process to report deficiencies in internal control to management on a timely basis.

We have begun to take actions that we believe will substantially remediate the material weaknesses identified. In response to the identification of our material weaknesses, we: (i) have retained a part-time Chief Financial Officer to segregate the duties of Chief Executive Officer and Chief Financial Officer; (ii) are in the process of establishing a review process for key aspects of our financial reporting process, including the accounting for complex transactions; and (iii) will seek to establish better operating controls and involve our board of directors in our internal controls process, which will involve establishing formal procedures to communicate deficiencies in internal controls on a timely basis, and encourage our board of directors to more actively participate in guiding management as it relates to internal controls matters. However, we cannot assure you that our internal control over financial reporting, as modified, will enable us to identify or avoid material weaknesses in the future. We will be required to expend time and resources to further improve our internal controls over financial reporting, including by expanding our finance and accounting staff.

Future sales of our common stock by our existing shareholders could cause our stock price to decline.

We currently have 6,452,341 shares of our common stock outstanding, all of which are currently eligible for sale in the public market, subject, in certain circumstances to the volume, manner of sale and other limitations under Rule 144 or 701 promulgated under the Securities Act. It is conceivable that shareholders may wish to sell some or all of their shares. If our shareholders sell substantial amounts of our common stock in the public market at the same time, the market price of our common stock could decrease significantly due to an imbalance in the supply and demand of our common stock. Even if they do not actually sell the stock, the perception in the public market that our shareholders might sell significant shares of our common stock could also depress the market price of our common stock.

A decline in the price of shares of our common stock might impede our ability to raise capital through the issuance of additional shares of our common stock or other equity securities, and may cause shareholders to lose part or all of their investment in our shares of common stock.

Our shares of common stock are from time to time thinly traded, so stockholders may be unable to sell at or near ask prices or at all if they need to sell shares to raise money or otherwise desire to liquidate their shares.

Our common stock has from time to time been "thinly-traded," meaning that the number of persons interested in purchasing our common stock at or near ask prices at any given time may be relatively small or non-existent. This situation is attributable to a number of factors, including the fact that we are a small company that is relatively unknown to stock analysts, stock brokers, institutional investors and others in the investment community that generate or influence sales volume, and that even if we came to the attention of such persons, they tend to be risk-averse and would be reluctant to follow an unproven company such as ours or purchase or recommend the purchase of our shares until such time as we became more seasoned and viable. As a consequence, there may be periods of several days or more when trading activity in our shares is minimal or non-existent, as compared to a seasoned issuer which has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. We cannot give stockholders any assurance that a broader or more active public trading market for our common shares will develop or be sustained, or that current trading levels will be sustained.

Our need for future financing may result in the issuance of additional securities which will cause investors to experience dilution.

Our cash requirements may vary from those now planned depending upon numerous factors, including the result of future research and development activities. We believe that the proceeds we received from the sale of the shares in our initial public offering and our private placement will provide us with sufficient working capital for at least the next twelve months. Thereafter, we expect to require additional funds in the future to conduct additional clinical trials. There are no other commitments by any person for future financing. Our securities may be offered to other investors at a price lower than the price per share offered to current shareholders, or upon terms which may be deemed more favorable than those offered to current shareholders. In addition, the issuance of securities in any future financing may dilute an investor's equity ownership. Moreover, we may issue derivative securities, including options and/or warrants, from time to time, to procure qualified personnel or for other business reasons. The issuance of any such derivative securities, which is at the discretion of our board of directors, may further dilute the equity ownership of our stockholders. No assurance can be given as to our ability to procure additional financing, if required, and on terms deemed favorable to us. To the extent additional capital is required and cannot be raised successfully, we may then have to limit our then current operations and/or may have to curtail certain, if not all, of our business objectives and plans.

Certain provisions of the General Corporation Law of the State of Delaware may have anti-takeover effects which may make an acquisition of our company by another company more difficult.

We are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a Delaware corporation from engaging in any business combination, including mergers and asset sales, with an interested stockholder (generally, a 15% or greater stockholder) for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. The operation of Section 203 may have anti-takeover effects, which could delay, defer or prevent a takeover attempt that a holder of our common stock might consider in its best interest.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

Facilities

Our executive offices are located at 100 Europa Drive, Chapel Hill, North Carolina. We currently lease approximately 2,111 square feet of office space at such location for monthly rent of $4,046 on a month to month basis and intend to continue to do so until our new office space is available. On January 24, 2014 we entered into a five year lease for 5,303 square feet of office and laboratory space at 801 Capitola Drive, Chapel Hill, North Carolina 27517 for monthly rent of $10,341 exclusive of payments required for maintenance of common areas and utilities. We intend to move our executive offices to the Capitola Drive location at the end of April 2014. Based on our current operational plans, we believe that such facilities are adequate for our operations for the near future.

Item 3. ***Legal Proceedings***

None.

Item 4. ***Mine Safety Disclosures***

Not applicable.

PART II

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

Our common stock has traded on the NASDAQ under the symbol "HTBX" since July 29, 2013. Prior to that time, there was no public market for our common stock. As a result, we have only set forth quarterly information with respect to high and low prices for our common stock for the two most recent fiscal quarters. The following table states the range of the high and low sales prices of our common stock for each of the last two calendar quarters during the year ended December 31, 2013. These quotations represent inter-dealer prices, without retail mark-up, markdown, or commission, and may not represent actual transactions. The last price of our common stock as reported on the NASDAQ on March 27, 2014 was $6.64 per share. As of March 27, 2014, there were approximately 31 stockholders of record of our common stock. This number does not include beneficial owners from whom shares are held by nominees in street name.

	High	Low
YEAR ENDED DECEMBER 31, 2013		
Fourth quarter	$ 15.29	7.01
Third quarter	$ 13.50	9.01

Dividend Policy

We have never paid any cash dividends on our common stock to date, and do not anticipate paying such cash dividends in the foreseeable future. Whether we declare and pay dividends is determined by our Board of Directors at their discretion, subject to certain limitations imposed under Delaware corporate law. The timing, amount and form of dividends, if any, will depend on, among other things, our results of operations, financial condition, cash requirements and other factors deemed relevant by our Board of Directors.

Equity Compensation Plan Information

Securities Authorized for Issuance Under Equity Compensation Plans

The following table contains information about our equity compensation plans as of December 31, 2013.

Equity Compensation Plan Information

Plan Category	Number of securities to be issued upon exercise of outstanding options (1) (a)	Weighted-average exercise price of outstanding options (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders			
2009 Equity Incentive Plan	633,482	$ 3.36	32,644
Equity compensation plans not approved by security holders	—	—	—
Total	633,482	—	32,644

(1) Does not include 99,906 shares of restricted stock which are fully vested and 103,583 shares of common stock issued upon option exercises. Does not include options exercisable for 32,251 shares of common stock that were issued subsequent to year end.

Recent Sales of Unregistered Securities

All sales of unregistered securities have been previously reported.

Purchase of Equity Securities

We have not purchased any of our registered securities during the period covered by this Annual Report on Form 10-K.

Use Of Proceed From Registered Securities

In connection with our initial public offering, we sold 2,700,000 (including the 200,000 over-allotment option shares) shares of our common stock at a price of $10.00 per share. Aggregate gross proceeds from the IPO, were $27 million and net proceeds received after underwriting commissions and offering expenses of $2.7 million were approximately $24.3 million.

As of December 31, 2013, we have used approximately $4.2 million of the net proceeds, in connection with our clinical trials, manufacturing and general and administrative expenses. Following year-end certain bonuses were paid to our executive officers and other employees in the amount of $183,125. There has been no material change in our planned use of the balance of the net proceeds from the offering as described in the prospectus filed with the SEC pursuant to Rule 424(b) under the Securities Act other than as previously reported.

Item 6. ***Selected Financial Data***

Not applicable because we are a smaller reporting company.

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

The following discussion of our financial condition and results of operations should be read in conjunction with the audited financial statements and notes thereto for the year ended December 31, 2013 found in this report. In addition to historical information, the following discussion contains forward-looking statements that involve risks, uncertainties and assumptions. Where possible, we have tried to identify these forward looking statements by using words such as "anticipate," "believe," "intends," or similar expressions. Our actual results could differ materially from those anticipated by the forward-looking statements due to important factors and risks including, but not limited to, those set forth under "Risk Factors" in Part I, Item 1A of this Report.

OVERVIEW

We are a development stage biopharmaceutical company engaged in the development of novel allogeneic, "off-the-shelf" cellular therapeutic vaccines to combat a wide range of cancers and infectious diseases. Our proprietary *ImPACT*™ Immune Pan Antigen Cytotoxic Therapy is being designed to deliver live, genetically-modified, irradiated human cells which are reprogrammed to "pump out" a broad spectrum of cancer-associated antigens together with a potent immune adjuvant called "gp96" to educate and activate a cancer patient's immune system to recognize and kill cancerous cells. We intend for our *ImPACT* cells to secrete an antigen-adjuvant complex that generates anti-cancer immune responses in patients by mobilizing and activating cytotoxic "killer" T cells that target multiple cancer antigens, thus harnessing a patient's own immune system to fight cancer.

Unlike autologous or "personalized" therapeutic vaccine approaches which require extraction and processing of cancer or blood from each individual patient, our *ImPACT* therapeutic vaccine uses a master cell line containing a host of known and unknown tumor associated antigens to mass-produce a single vaccine product applicable to all patients with a particular cancer type. We believe our off-the-shelf, allogeneic immunotherapy offers logistical, manufacturing and cost benefits compared to autologous patient-specific approaches.

We commenced active operations in June 2008. Our operations to date have been primarily limited to organizing and staffing our company, business planning, raising capital, acquiring and developing our technology, identifying potential product candidates and undertaking preclinical and clinical studies of our most advanced product candidates. To date, we have not generated any revenues and have financed our operations with net proceeds from the private placement of our preferred stock and our initial public offering in which we received gross proceeds of $27 million. As of December 31, 2013, we had a deficit accumulated during the development stage of $12,346,630. We had net losses of $6,609,864 and $2,471,147 for the years ended December 31, 2013 and 2012, respectively. We expect to incur significant expenses and increasing operating losses for the foreseeable future. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development and initiate and conduct clinical trials of, and seek marketing approval 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 sales, marketing, manufacturing and distribution. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. Adequate additional financing may not be available to us on acceptable terms, or at all. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts. We expect our existing cash will enable us to fund our current operating plan and capital expenditure requirements for at least 12 months. This is based on our current estimates, and we could use our available capital resources sooner than we currently expect. We will need to generate significant revenues to achieve profitability, and we may never do so.

CRITICAL ACCOUNTING POLICIES AND SIGNIFICANT JUDGMENTS AND ESTIMATES

We believe that several accounting policies are important to understanding our historical and future performance. We refer to these policies as "critical" because these specific areas generally require us to make judgments and estimates about matters that are uncertain at the time we make the estimate, and different estimates—which also would have been reasonable—could have been used, which would have resulted in different financial results.

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of our consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates based on historical experience and make various assumptions, which management believes to be reasonable under the circumstances, which form the basis for judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

The Company has elected to follow the extended transition period guidance provided for in Securities Act Section 7(a)(2)(B) for complying with new or revised accounting standards. The Company will disclose the date on which adoption of such standards is required for non-emerging growth companies and the date on which the Company will adopt the recently issued accounting standards.

The notes to our audited consolidated financial statements contain a summary of our significant accounting policies. We consider the following accounting policies critical to the understanding of the results of our operations:

- Revenue Recognition
- Stock-based compensation, and
- Research and development costs

Revenue Recognition

We recognize government grants when there is reasonable assurance that they will comply with the conditions attached to the grants and the grants will be received. The grants are recognized using an income approach and grant revenue is recognized as the related expenses are incurred.

Stock-Based Compensation

Calculating stock-based compensation expense requires the input of highly subjective assumptions. We apply the Black-Scholes-Merton option pricing model to determine the fair value of our stock options. Inherent in this model are assumptions related to expected stock-price volatility, option life, risk-free interest rate and dividend yield. We estimate the volatility of our common stock at the date of grant based on historical volatility. We estimate the expected life of our option using the contractual term of the option. The risk-free interest rate is based on the U.S. Treasury zero-coupon yield curve on the grant date for a maturity similar to the expected life of the options. The dividend rate is based on our historical rate, which we anticipate to remain at zero. The assumptions used in calculating the fair value of stock options represent our best estimates, however these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and different assumptions are used, the stock-based compensation expense could be materially different in the future. In addition, we are required to estimate the expected forfeiture rate and only recognize expense for those stock options expected to vest over the service period.

Research and Development Costs

We expense research and development costs associated with developmental products not yet approved by the FDA to research and development expense as incurred. Research and development costs consist primarily of license fees (including upfront payments), milestone payments, manufacturing costs, salaries, stock-based compensation and related personnel costs, fees paid to consultants and outside service providers for laboratory development, legal expenses resulting from intellectual property prosecution and other expenses relating to the design, development, testing and enhancement of our product candidates.

RESULTS OF OPERATIONS

Year Ended December 31, 2013 and 2012

Revenues

Our revenues are entirely comprised of grant awards. There were no grant awards in 2013 and $3,110 in grant awards in 2012. We will continue our efforts to secure future grant funding to subsidize ongoing research and developments costs.

Operating Expenses

Total operating expenses for the year ended December 31, 2013 (the "2013 Period") increased approximately 180% to approximately $6,564,641 compared to $2,345,787 for the year ended December 31, 2012 (the "2012 Period"). Operating expenses are primarily comprised of research and development, clinical and regulatory and general and administrative expenses. For the 2013 Period, research and development expenses were $2,737,688, clinical and regulatory expenses were $1,397,157 and general and administrative expenses were $2,429,796 as compared to research and development expenses of $902,938, clinical and regulatory expenses of $253,189 and general and administrative expenses of $1,189,660 for the 2012 Period. For the year ended December 31, 2013, research and development expenses represented approximately 42% of operating expenses, clinical trials and regulatory represented approximately 21% of operating expenses, and general and administrative expenses represented approximately 37% of operating expenses. For the year ended December 31, 2012, research and development expenses represented approximately 38% of operating expenses, clinical trials and regulatory represented approximately 11% of operating expenses, and general and administrative expenses represented approximately 51% of operating expenses.

Research and development expense.

Research and development expense for the 2013 Period increased 203% to $2,737,688 compared to $902,938 for the the 2012 Period. The $1,834,750 increase from the 2012 Period to the 2013 Period is primarily related to an increase of $1,530,000 in pre-manufacturing costs associated with preparing to produce vaccines for use in our clinical trials. Personnel costs, including outside consultants, increased by $187,000 primarily due to increased stock compensation expense. Patent costs also increased by $118,000 as we continued our efforts to expand our patent portfolio.

Clinical and regulatory expense.

Clinical and regulatory expense for the 2013 Period increased 452% to $1,397,157 compared to $253,189 for the 2012 Period. The $1,143,968 increase from the 2012 Period to the 2013 Period resulted from an increase of $698,000 in manufacturing and other clinical trial expenditures incurred in preparation for the initiation of the clinical trials. Consulting related to clinical trials increased by $293,000 from the 2012 Period to the 2013 Period. Personnel costs for our clinical and research staff also increased by $153,000 as we moved closer to launching clinical trials.

General and administrative expense.

General and administrative expense for the 2013 Period increased 104% to $2,429,796 compared to $1,189,660 for the 2012 Period. The $1,240,136 increase from the 2012 Period to the 2013 Period resulted from an increase of $743,000 in personnel costs, including consultants, of which $321,000 was non-cash stock based compensation. The remainder was primarily attributable to the hiring of a Director of Finance and Chief Financial Officer and related employee benefits associated with these positions. Insurance expense increased by $184,000 related primarily to directors and officers insurance that increased when the company went public. Marketing expense increased by $129,000 due to an increase in expenses such as the website enhancement and the initial public offering road show. Travel expense increased by $93,000 primarily related to fund-raising activities. The Company incurred $86,000 in additional costs associated with being a public company during the 2013 Period.

Interest expense

Interest expense decreased to $79,119 for the 2013 Period from $101,086 for the 2012 Period as the majority of the Company's debt was extinguished in the 2013.

BALANCE SHEET AS OF DECEMBER 31, 2013 AND 2012

Prepaid expenses.

Prepaid expenses were $1,066,638 as of December 31, 2013 compared to $58,436 as of December 31, 2012. The increase of $1,008,202 was due primarily to prepayments for contract research, which increased by $643,000, as the Company prepared for clinical trials. Prepayments related to insurance, which increased due to the company becoming public in 2013, increased by $214,000 from the 2012 Period to the 2013 Period. The Company also had prepayments for software enhancements, brokers and other entities in the amount of $151,000 that did not exist at the end of the 2012 Period.

Accounts Payable.

Accounts payable was $651,917 as of December 31, 2013 compared to $505,471 as of December 31, 2012. This increase of $146,446 was primarily related to an increase of volume in payments as the company increased activity related to clinical trials.

LIQUIDITY AND CAPITAL RESOURCES

Sources of liquidity

To date, we have not generated any revenues. Since our inception in June, 2008, we have financed our operations principally through private placements and through our initial public offering, which we closed in July, 2013 and the closings of the partial exercises of the underwriter's over-allotment option, which we closed in August 2013 and September 2013. The total gross proceeds raised from the offering and over-allotment option were $27 million, before underwriting discounts and commissions and other offering expenses payable by the Company for net proceeds of approximately $24.3 million. We believe that the proceeds we received from the sale of the shares in our private placement and our initial public offering will provide us with sufficient working capital to fund our current operating plans and capital expenditure requirements for at least 12 months. Thereafter, we expect to require additional funds in the future to conduct additional clinical trials. As of December 31, 2013, we had $21,864,157 in cash and cash equivalents and short term investments.

Cash flows

Operating activities. The use of cash in all periods resulted primarily from our net losses adjusted for non-cash charges and unfavorable changes in the components of working capital. The significant increase in cash used in operating activities for the 2013 Period compared to the 2012 Period is due to an increase in operating expenses as we increased manufacturing costs for both research, development and clinical and regulatory as we prepare for clinical trials, as well as an increase in general and administrative costs primarily associated with our initial public offering and costs associated with being a public company.

Investing activities. The use of cash in the 2013 Period was primarily due to the purchase of short term investments which were purchased with the cash obtained from the initial public offering in July 2013.

Financing activities. Cash provided by financing activities during the 2013 Period of approximately $28.4 million resulted primarily from the initial public offering and partial exercises of the over-allotment option which resulted in gross proceeds to us of approximately $24.3 million after underwriting discounts and commissions and other offering expenses paid by the Company.

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 under Securities and Exchange Commission rules.

Current and Future Financing Needs

We have incurred an accumulated deficit of $12,346,630 through December 31, 2013. We have incurred negative cash flows from operations since we started our business. We have spent, and expect to continue to spend, substantial amounts in connection with implementing our business strategy, including our planned product development efforts, our clinical trials, and our research and discovery efforts.

Based on our current plans, we believe that our cash will be sufficient to enable us to meet our planned operating needs for at least the next 12 months.

However, the actual amount of funds we will need to operate is subject to many factors, some of which are beyond our control. These factors include the following:

- the progress of our research activities;
- the number and scope of our research programs;
- the progress of our preclinical and clinical development activities;
- the progress of the development efforts of parties with whom we have entered into research and development agreements;
- our ability to maintain current research and development licensing arrangements and to establish new research and development and licensing arrangements;
- our ability to achieve our milestones under licensing arrangements;
- the costs involved in prosecuting and enforcing patent claims and other intellectual property rights;
- the costs and timing of regulatory approvals; and
- profitability of our clinical laboratory diagnostic and microbiology services business.

We have based our estimate on assumptions that may prove to be wrong. We may need to obtain additional funds sooner or in greater amounts than we currently anticipate. Potential sources of financing include strategic relationships, public or private sales of our shares or debt and other sources. We may seek to access the public or private equity markets when conditions are favorable due to our long-term capital requirements. We do not have any committed sources of financing at this time, and it is uncertain whether additional funding will be available when we need it on terms that will be acceptable to us, or at all. If we raise funds by selling additional shares of common stock or other securities convertible into common stock, the ownership interest of our existing stockholders will be diluted. If we are not able to obtain financing when needed, we may be unable to carry out our business plan. As a result, we may have to significantly limit our operations and our business, financial condition and results of operations would be materially harmed.

License and Contractual Agreement Obligations

Below is a table of our contractual obligations for the years 2014 through 2018 as of December 31, 2013 *(in thousands)*.

	Year ended December 31,					
	2014	2015	2016	2017	2018	Total
License Agreements	$ 30,000	$ 30,000	$ 30,000	$ 280,000	$ 30,000	$ 400,000
Lease Agreements(1)	82,353	183,137	188,631	194,290	200,119	848,530
Total	$ 112,353	$ 213,137	$ 218,631	$ 474,290	$ 230,119	$ 1,248,530

(1) We anticipate moving to new office space in April 2014. The numbers set forth above for lease agreements include lease payments for the new office space for a portion of 2014 and lease payments for new office space for the full years of 2015, 2016, 2017 and 2018.

Additional In-Licensed Programs

We may enter into additional license agreements relating to new product candidates.

Item 7A. ***Quantitative and Qualitative Disclosures About Market Risk***

Not applicable because we are a smaller reporting company.

Item 8. ***Financial Statements and Supplemental Data***

See pages F-1 through F-27.

Item 9. ***Changes In and Discussions with Accountants on Accounting and Financial Disclosures***

None

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Disclosure Controls and Procedures

Our management has adopted and maintains disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in the reports filed under the Exchange Act, such as this Form 10-K, is collected, recorded, processed, summarized and reported within the time periods specified in the rules of the SEC. Our disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to management to allow timely decisions regarding required disclosure. As required under Exchange Act Rule 13a-15, our management, including the Chief Executive Officer and Chief Financial Officer, has conducted an evaluation of the effectiveness of disclosure controls and procedures as of the end of the period covered by this report. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures are not effective at the reasonable assurance level due to the material weaknesses discussed in ITEM 1A. Risk Factors to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Exchange Act Rule 13a-15. Our internal control over financial reporting is designed to provide reasonable assurance to our management and Board of Directors regarding the preparation and fair presentation of published financial statements. Management conducted an assessment of our internal control over financial reporting based on the framework and criteria established by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (1992). Based on the assessment, management concluded that, as of December 31, 2013, our internal controls over financial reporting were not effective based on those criteria. Prior to the closing of our initial public offering in July 2013, we operated as a private company and the number and qualifications of our finance and accounting staff have not been consistent with those of a public company. We have identified material weaknesses in our internal controls with respect to our financial statement closing process of our consolidated financial statements for the year ended December 31, 2013. Our management discovered certain conditions that we deemed to be material weaknesses and significant deficiencies in our internal controls, as follows:

- A lack of accounting and finance resources as well as effective oversight by those in charge of governance resulted in insufficient controls over timely financial statement preparation and review as well as the preparation and review around accounting for certain complex transactions.

- The design of monitoring controls used to assess the design and operating effectiveness of our internal controls is inadequate. We also do not have an adequate internal process to report deficiencies in internal control to management on a timely basis.

We have begun to take actions that we believe will substantially remediate the material weaknesses identified. In response to the identification of our material weaknesses, we: (i) have retained a part-time Chief Financial Officer to segregate the duties of Chief Executive Officer and Chief Financial Officer; (ii) are in the process of establishing a review process for key aspects of our financial reporting process, including the accounting for complex transactions; and (iii) will seek to establish better operating controls and involve our board of directors in our internal controls process, which will involve establishing formal procedures to communicate deficiencies in internal controls on a timely basis, and encourage our board of directors to more actively participate in guiding management as it relates to internal controls matters. However, we cannot assure you that our internal control over financial reporting, as modified, will enable us to identify or avoid material weaknesses in the future. We will be required to expend time and resources to further improve our internal controls over financial reporting, including by expanding our finance and accounting staff.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures and our internal control processes will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of error or fraud, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that the breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and may not be detected. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that occurred during our fiscal quarter ended December 31, 2013 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

This Annual Report on Form 10-K does not include an attestation report of the Company's registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the Company's registered public accounting firm pursuant to rules of the SEC that permit the Company to provide only management's report in this Annual Report on Form 10-K.

Item 9B. ***Other Information***

None.

PART III

Item 10. ***Directors, Executive Officers and Corporate Governance***

Below is certain information regarding our directors and executive officers.

Name	Age	Position	Served as an Officer or Director Since
Jeffrey Wolf	50	Chairman, Chief Executive Officer and Director	2008
Matthew E. Czajkowski	64	Chief Financial Officer	2013
Melissa Price Ph.D.	40	Vice President of Clinical and Regulatory Affairs	2013
Anil K. Goyal Ph.D.	50	Vice President of Business Development	2013
Vadim Deyev, MD, Ph.D.	49	Director of Applied Research	2011
Taylor Schreiber	34	Vice President of Research and Development	2014
John Monahan, Ph.D.	67	Director	2009
Paul Belsky, MD	57	Director	2009
Michael Kharitonov, Ph.D.	50	Director	2009
Edward B. Smith	38	Director	2009
Louis C. Bock	49	Director	2013

All of the officers listed above are full-time employees of the Company other than Mr. Czajkowski, who works on a part-time basis.

Jeffrey Wolf, ***Chairman and Chief Executive Officer***

Mr. Wolf founded Heat Biologics in August, 2008. Prior to founding Heat, from June 1997 to March 2011, Mr. Wolf has served as managing director at Seed-One Ventures, LLC a venture firm focused on launching and growing exceptional healthcare companies from the ground up. Since founding Seed-One, Mr. Wolf has founded and run several medical companies. Mr. Wolf's start-ups include Avigen, a San Francisco-based gene therapy company where he was a co-founder and director; TyRx Pharma, a Princeton-based company focused on the development of bio-compatible polymers where he was a co-founder and Chairman; EluSys Therapeutics, a New Jersey company focused on the development of a novel technology to remove blood-borne pathogens where he was a co-founder, Chairman and Chief Executive Officer; and GenerationOne, a Miami-based company focused on mobile-based collaborative care, where he was the founder, Chairman and Chief Executive Officer. Mr. Wolf received his M.B.A. from Stanford Business School, his J.D. from New York University School of Law and his B.A. from the University of Chicago, where he graduated with honors in Economics. Mr. Wolf serves as a director of several Seed-One portfolio companies and serves as a director of Synthetic Biologics, Inc., a biotechnology company focused on the development of novel anti-infective biologic and drug candidates targeting specific pathogens that cause serious infections and other diseases.

We selected Mr. Wolf to serve on our Board as our chairman because he brings to the board extensive knowledge of the pharmaceutical and biotechnology industries. Having served in senior corporate positions in several biomedical companies, he has a vast knowledge of the industry and brings to the board significant executive leadership and operational experience. His business experience provides him with a broad understanding of the operational, financial and strategic issues facing public companies and his service on other public company boards provides him with extensive corporate governance knowledge.

Matthew Czajkowski, ***Chief Financial Officer***

Mr. Czajkowski joined Heat Biologics in May 2013 as its Chief Financial Officer. Prior to joining Heat Biologics, Mr. Czajkowski worked from 2011-2012 as the Chief Executive Officer of NextRay, Inc., a company developing x-ray imaging technology. From 2007 -2010, he served as an independent advisor to various mid stage software and biotech companies where his responsibilities included fundraising. Prior thereto, from 2004-2006, he served as the Chief Financial and Administrative Officer of AAI Pharma Inc. and was part of the work out team for its Chapter 11 filing and from 2000-2004 served as the Chief Financial Officer of Pozen Inc., a publically traded biotechnology company. Prior to this, Mr. Czajkowski was at Goldman, Sachs & Co. where he founded and ran their Asia/Pacific mergers and acquisitions business. Mr. Czajkowski received his MBA from Harvard University in 1983 and his BA from Harvard University in 1977.

Melissa Price, Ph.D., *Vice President of Clinical and Regulatory Affairs*

Dr. Price is responsible for coordinating the clinical development and operational efforts at Heat Biologics. Prior to joining Heat Biologics, Inc., Dr. Price served in various positions at INC Research including Vice President of Global FSP Solutions at INC Research from February 2012 until October 2013 and Executive Director, Strategic Alliance Management from January 2010 until February 2012. From June 2009 until January 2010, Dr. Price served as the Senior Director, Drug Development Partnerships at Novaquest, a Quintiles Company. Prior thereto, from 2006 until 2009 she served in various positions at INC Research. Dr. Price received her Ph.D. in Organic Chemistry from Yale University.

Anil Goyal, Ph.D., Vice President of Business Development

Dr Goyal joined Heat Biologics in December 2013 as Vice President of Business Development of the Company. Prior to joining Heat Biologics, Dr. Goyal served as President and Chief Executive Officer of Qualiber, Inc., a company which he co-founded, from April 2010 until December 2013 and Managing Director of OpenDoors Group, LLC, a company he founded, from August 2008 until December 2013. From January 2009 until January 2010, Dr. Goyal served as the Vice President of Business Development at Optherion, Inc. and from January 2003 until January 2008 he served as Vice President of Business Development of Serenex, Inc. Prior thereto, he served in various key management and development positions at Millennium Pharmaceuticals, Genome Therapeutics Corporation and Merck & Co.

Vadim V. Deyev, M.D., Ph.D., *Director of Applied Research*

Dr. Deyev joined Heat Biologics in January 2009 as Director of Applied Research. Prior to joining Heat Biologics, Dr. Deyev worked from 2006-2008 as Associate Scientist of Microbiology and Immunology and Hybridoma and Fusion Protein Core Director at the University of Miami School of Medicine. Working with Dr. Eckhard Podack, Heat Biologics' Scientific Advisor and Chairman of its Scientific Advisory Board, Dr. Deyev has made major contributions to the development of technologies later licensed by the Company. Since 2001, Dr. Deyev has authored numerous publications on immunology and oncology based upon his work with Dr. Podack at the University of Miami. Dr. Deyev joined the team at University of Miami in 1996 until present, after leading the Immunopharmacology Group at the Cancer Research Center in Moscow, Russia Dr. Deyev received his Ph.D. in Immunology/Oncology from Cancer Research Center in Moscow, Russia and his M.D. from Russian State Medical University.

Taylor H. Schreiber Ph.D., *Vice President of Research and Development*

Dr. Schreiber joined Heat Biologics in March 2014 as Vice President of Research and Development. Dr. Schreiber is the co-inventor of significant elements of the Company's *ImPACT* Technology platform and has been intimately involved in the progression of gp96 heat shock protein immunotherapy both as a Ph.D. researcher and as a post-doctoral fellow in the laboratory of Eckhard Podack, M.D., Ph.D., the inventor of Heat's *ImPACT* Technology platform. Dr. Schreiber joins the Company after completing the M.D. / Ph.D. program at the University of Miami Miller School of Medicine, which he attended from 2004 until February 2014. In 2010, Dr. Schreiber received his Ph.D. degree from the Sheila and David Fuente Program in Cancer Biology at the University of Miami Miller School of Medicine after completing the four year Ph.D. program. Following his degree, Dr. Schreiber completed a post-doctoral fellowship with Dr. Eckhard Podack, M.D., Ph.D. studying the immunobiology of TNFRSF25 from 2010-2012. Dr. Schreiber received the best overall research award at the National Student Research Forum in 2008 and was nominated as a Future Leader in Cancer Research by the American Association for Cancer Research in 2011. Dr. Schreiber is an emerging expert in the field of tumor immunology and TNFRSF25 biology.

John Monahan, Ph.D., *Director*

Dr. Monahan is currently the Chief Technology Officer of Synthetic Biologics, Inc., a biotechnology company focused on the development of synthetic DNA-based therapeutics and innovative disease-modifying medicines for serious illnesses. Dr. Monahan Co-Founded Avigen Inc. (NASDAQ:AVGN) in 1992, a company which has become a leader in its sector for the development of novel pharmaceutical products for the treatment of serious human diseases. Over a 12 year period as CEO of Avigen he raised over $235M in several private and public financings including its IPO. From 1989-1992, he was VP of R&D at Somatix Therapy Corp., Alameda, CA and from 1985-1989 he was Director of Molecular & Cell Biology at Triton Biosciences Inc., Alameda, CA. Prior to that from 1982-1985, he was Research Group Chief, Department of Molecular Genetics, Hoffmann-LaRoche, Inc. Nutley, NJ, and from 1975 to 1977 he was an Instructor at Baylor College of Medicine, Houston TX. He received his Ph.D. in Biochemistry in 1974 from McMaster University, Canada and his B.Sc. from University College Dublin, Ireland in 1969. Dr. Monahan is a board member of Tacere Therapeutics, CA. He is also a board member of a number of Irish biotech companies including Genable, Cellix, Luxcel, Identigen, Pharmatrin and GK Technologies.

We selected Dr. Monahan to serve on our Board because he brings to the board extensive knowledge of the pharmaceutical and biologics industry. Having served in senior corporate positions in many medical companies he has a vast knowledge of the industry.

Paul Belsky, M.D., *Director*

Dr. Belsky has served on our Board since November 2009. Dr. Belsky is currently a medical and scientific advisor at Seed-One Ventures and has been a partner at Concorde Medical Group, LLC since June of 1998. Dr. Belsky served as a scientific advisor to Elusys Therapeutics, Sensatex, GenerationOne and TyRx Pharma. Dr. Belsky has extensive expertise in the clinical practice of internal medicine and cardiovascular diseases, and was formerly on the clinical academic faculty at Weill College of Medicine, Cornell University. He is a fellow of the American College of Cardiology and the American College of Chest Physicians, is a member of the American College of Physicians, and a Clinical Assistant Professor of Medicine at New York University School of Medicine. Dr. Belsky received his MD from the University of California at San Francisco, and his AB in Biology from Brown University, where he was elected Phi Beta Kappa.

We selected Dr. Belsky to serve on our Board because he brings to the board extensive knowledge of the medical industry. His medical background aids in the understanding of the detailed science behind our intellectual property.

Michael Kharitonov, Ph.D., *Director*

Dr. Kharitonov has been the Chief Executive Officer of Voleon Capital Management, an investment management firm, since July 2007 until present. He is a high technology entrepreneur and computer scientist whose areas of expertise include advanced computer and communication technologies and quantitative finance. Dr. Kharitonov is a founder and CEO of Voleon Capital Management LLC. Dr. Kharitonov was a co-founder and former Chairman and CEO of Netli, Inc., a successful Silicon Valley startup that pioneered the development of Application Delivery Networks. Under Dr. Kharitonov's leadership Netli raised over $20 million in venture financing from a number of Silicon Valley's best known venture capital firms. In 2007 Netli was acquired by Akamai Technologies (NASDAQ: AKAM). Dr. Kharitonov also served as a Vice President of D. E. Shaw and Co., an international investment firm known as one of the most quantitatively advanced and computerized securities trading firms in the world. Dr. Kharitonov holds a Ph.D. degree from the Department of Computer Science at Stanford University. At Stanford he was awarded a Hertz Fellowship and was a winner of several scholarly awards. He also holds a B.A. in Computer Science and Mathematics with highest honors from University of California at Berkeley.

We selected Dr. Kharitonov to serve on our Board because he brings a strong start-up and finance background to the Company, and adds significant strategic, business and financial experience. His prior successful management experience and fundraisings provides him with a broad understanding issues faced by growing companies and of the financial markets and the financing opportunities available to us.

Edward B. Smith, *Director*

Since April 2005, Mr. Smith has been the Managing Partner of Brightline Capital Management, LLC ("BCM"), a New York-based investment firm founded in 2005. BCM is the investment manager of Brightline Ventures I, LLC, Brightline Ventures II, LLC, Brightline Ventures III, LLC and Brightline Capital Partners, LP. Prior to founding BCM, Mr. Smith worked at Gracie Capital from 2004-2005, GTCR Golder Rauner from 1999-2001 and Credit Suisse First Boston from 1997-1999. Mr. Smith holds a Bachelor of Arts in Social Studies from Harvard College and a Masters in Business Administration from Harvard Business School. He is currently a Director of Z Trim Holdings Inc. (OTC:ZTHO), a manufacturer of environmentally friendly agricultural functional ingredients.

We selected Mr. Smith to serve on our Board because he brings a strong business background to the Company, and adds significant strategic, business and financial experience. Mr. Smith's business background provides him with a broad understanding of the issues facing us, the financial markets and the financing opportunities available to us. His service on other public company boards provides him with extensive corporate governance knowledge and insight into issues faced by companies similar to ours.

Louis C Bock, *Director*

Louis C. Bock was a Managing Director of Scale Venture Partners, a venture capital firm, until 2012. Mr. Bock joined Scale Venture Partners in September 1997 from Gilead Sciences, Inc., a biopharmaceutical company where he worked from September 1989 to September 1997. Prior to Gilead, he was a research associate at Genentech, Inc. from November 1987 to September 1989. He currently serves as a director of the following publicly traded companies: Horizon Therapeutics, Inc., for which he also serves as a member of the audit and compensation committees, and Zogenix, Inc., for which he also serves as a member of the audit committee. In addition, Mr. Bock serves on the board of directors of the following privately-held companies: Ascenta Therapeutics, Inc., for which he also serves as a member of the audit committee, and Sonexa Therapeutics, Inc., and also serves on the board of directors of Arizona Technology Enterprises, LLC, a non-profit organization. Mr. Bock is responsible for Scale Venture Partners' investment in Somaxon Pharmaceuticals, Inc. In the past five years, Mr. Bock has also served as a member of the boards of directors of the following publicly traded companies: diaDexus Inc. and SGX Pharmaceuticals, Inc. Mr. Bock received his B.S. in Biology from California State University, Chico and an M.B.A. from California State University, San Francisco.

We selected Mr. Bock to serve on our Board because of his extensive clinical and leadership experience in the biotechnology and biopharmaceuticals industries, including experience in research, project management, business development and sales from his time at Gilead. His membership on other companies' boards of directors, including positions on other audit and nominating/corporate governance committees provides him with extensive corporate governance knowledge and insight into issues faced by companies similar to ours.

Scientific Advisory Board

In addition to our Board, we also have a scientific advisory board comprised of six individuals. The Scientific Advisory Board is responsible for providing scientific advice and for assessing the scientific progress of our research and development efforts. We have entered into written agreements and confidentiality agreements with all of our members of our Scientific Advisory Board. The members of our Scientific Advisory Board are compensated for their services. Drs. Allison, Stebbing and Nemunaitis are each entitled to receive $1,500 per board meeting in addition to a reimbursement for travel and related. In addition, Drs. Allison, Stebbing and Von Hoff each received options to purchase 15,000 shares of our common stock, which options vest over a four year period. Dr. Von Hoff is entitled to receive $4,000 per onsite advisory board meeting, $2,000 per telephonic meeting and an hourly rate of $500 per hour for consultative discussions with management. Dr. Podack receives consulting fees equal to $3,125 per month subject to increase to $4,167 per month.

Eckhard Podack, M.D., Ph.D., *Scientific Advisor and Chairman, Scientific Advisory Board*

Dr. Podack, the inventor of the Company's technology, serves as Chairman of its Scientific Advisory Board. Dr. Podack received his medical degree from the Johan Wolfgang Goethe University in Frankfurt in 1968 and his Medical License in 1970. Following service in the German Army as Captain and Battalion Physician, he completed his Ph.D. in the field of Biochemistry at the Georg August University in Gottingen. From 1974-1984 he studied Immunology at the Scripps Clinic and Research Foundation in La Jolla CA where he received an Established Investigatorship from the American Heart Association. Dr. Podack is the discoverer of Perforin and well recognized as the "Father" of the field of core forming proteins. Dr. Podack is the Sylvester Distinguished Professor of Microbiology & Immunology and Medicine and Chairman of the Department of Microbiology at the University of Miami, Miller School of Medicine.

James Allison, Ph.D., *Scientific Advisor*

Dr. Allison is a leader in the field of immunology, particularly in developing ways to help the immune system recognize and destroy cancer cells. His research is focused on the mechanisms that regulate the immunological response of T lymphocytes, especially strategies to manipulate those responses in clinically relevant areas, including autoimmunity, allergies, vaccinations, and tumor therapy. Dr. Allison is Chairman Department of Immunology at the MD Anderson Cancer Center and was formerly Chairman of the Immunology Program, Director of the Ludwig Center for Cancer Immunotherapy, Attending Immunologist, and David H. Koch Chair in Immunologic Studies at Memorial Sloan-Kettering Cancer Center in New York City. He is a member of the National Academy of Sciences and the Institute of Medicine as well as a fellow of the American Academy of Microbiology and the American Association for the Advancement of Science. He also is an investigator of the Howard Hughes Medical Institute.

Sol Barer, Ph.D., *Scientific Advisor*

Dr. Barer is the former Chairman and Chief Executive Officer of Celgene Corp., a global biopharmaceutical company engaged in the discovery, development, and commercialization of novel therapies for the treatment of cancer and inflammatory diseases. Dr. Barer has spent the last 20 years with Celgene and its predecessor, Celanese Research Company, serving as President, COO, CEO, Senior Vice President of Science and Technology, and Vice President/General Manager of the Chiral Products Division. Dr. Barer received his B.S. from Brooklyn College and his Ph.D. in organic chemistry from Rutgers University.

John Nemunaitis, M.D., *Scientific Advisor*

Dr. Nemunaitis is an oncologist and Executive Medical Director of the Mary Crowley Cancer Research Centers (MCCRC) and has been exploring novel targeted therapies for treating cancer patients for over 20 years. Dr. Nemunaitis received his B.A. and M.D. degrees from Case Western Reserve University. He completed his residency at Boston City Hospital and then performed his Hematology and Oncology fellowship at the University of Washington and the Fred Hutchinson Cancer Research Center in Seattle from 1988 to 1993. Dr. Nemunaitis came to Dallas in 1993 to establish the clinical research program for Texas Oncology Physicians Association (TOPA). He later established a not-for-profit translational research program (the MCCRC). He is a committee member of the Western Institutional Review Board (WIRB) and recently co-founded a molecular therapeutic/vaccine biotechnology company with GMP manufacturing capacity called Gradalis, Inc. Dr. Nemunaitis has authored over 250 peer-reviewed publications and 36 book chapters. He has instituted study establishment of over 350 trials, overseen FDA sponsored experimental treatment of nearly 4,000 cancer patients at MCCRC, and has carried out 14 government regulatory (FDA, RAC) presentations for biotechnology product development. He is also developer and holder of 8 new molecular and vaccine Investigational New Drug Applications (IND's). His research focus is clinical in orientation and involves determination of molecular signals in order to optimize targeted therapy, development of RNAi based therapeutics, and cancer vaccine approaches.

Justin Stebbing, M.D., MA, FRCP, FRCPath, Ph.D., *Scientific Advisor and Clinical Advisor*

Dr. Stebbing is a member of the Royal College of Physicians, American Board of Internal Medicine and a Fellow of the Royal College of Pathologists. Originally, Justin trained in medicine at Trinity College Oxford, obtaining a triple first class degree. After completion of junior doctor posts in Oxford, he undertook a residency (junior doctor) training at The Johns Hopkins Hospital in the US, before returning to London to continue his training in oncology at The Royal Marsden. Justin then undertook a PhD, funded by the Medical Research Council, investigating the interplay between the immune system and cancer. Specifically, the role of heat shock proteins in viral infections and tumorigenesis were examined helping in the development of vaccines that are currently in clinical trials. Dr. Stebbing has published over 300 peer-reviewed papers in journals such as the Lancet, New England Journal, Blood, PNAS, The Journal of Clinical Oncology and Annals of Internal Medicine, the majority as first or last author, as well as over 100 book chapters. His publications mainly focus on early and late stage trials of new drugs, mechanisms of disease, and prognostic indicators. He is on the scientific advisory board of a number of biotechnology companies and the editorial board of a number of world-leading journals such as the Journal of Clinical Oncology. He is now a senior lecturer at Imperial College, London.

Daniel D. Von Hoff, M.D., *Scientific Advisor*

Daniel D. Von Hoff, M.D., is currently Physician in Chief and Director of Translational Research at TGen (Translational Genomics Research Institute) in Phoenix, Arizona. He is also Chief Scientific Officer for Scottsdale Healthcare's Clinical Research Institute and Scientific Medical Officer for US Oncology. He holds an appointment as Clinical Professor of Medicine, University of Arizona, College of Medicine. Dr. Von Hoff's major interest is in the development of new anti-cancer agents, both in the clinic and in the laboratory. He and his colleagues were involved in the beginning of the development of many of the agents that are now used routinely, including: mitoxantrone, fludarabine, paclitaxel, docetaxel, gemcitabine, irinotecan, nelarabine, capecitabine, lapatinib and others. At present, he and his colleagues are concentrating on the development of molecularly targeted therapies particularly for patients with advanced pancreatic cancer. Dr. Von Hoff has published more than 559 papers, 134 book chapters and over 1,000 abstracts.

Dr. Von Hoff served as an appointee to President Bush's National Cancer Advisory Board from June 2004 to March 2010. Dr. Von Hoff is the past President of the American Association for Cancer Research (the world's largest cancer research organization), a Fellow of the American College of Physicians, and a member and past board member of the American Society of Clinical Oncology. He is a founder of ILEX™ Oncology, Inc. (acquired by Genzyme after Ilex had 2 agents, alemtuzumab and clofarabine approved for patients with leukemia). He is founder and the Editor Emeritus of Investigational New Drugs – The Journal of New Anticancer Agents; and, Editor-in-Chief of Molecular Cancer Therapeutics. He is also proud to have been a mentor and teacher for multiple medical students, medical oncology fellows, graduate students, and post-doctoral fellows. He is a co-founder of the AACR/ASCO Methods in Clinical Cancer Research Workshop. Dr. Von Hoff currently serves as Physician in Chief for the Translational Genomics Research Institute (TGen) in Phoenix, Arizona and Chief Scientific Officer of Scottsdale Healthcare and US Oncology. Dr. Von Hoff received his MD degree from Columbia University.

Clinical Advisory Board

In addition to our Board and Scientific Advisory Board we also have a Clinical Advisory Board comprised of five individuals, Dr Stebbing who is also a member of our Scientific Advisory Board, Dr. Gary Action, Dr. Roger Cohen, Dr Llew Keltner and Dr. Mark Schoenberg. The clinical advisory board will work with our clinical team to design and guide our clinical trials. We have entered into written agreements and confidentiality agreements with all of our members of our Clinical Advisory Board. The members of our Scientific Advisory Board are compensated for their services.

Justin Stebbing, M.D., Ph.D., *Scientific Advisor and Clinical Advisor*

See above bio.

Gary Acton, M.D., *Clinical Advisor*

Dr. Acton is a London-based clinician providing oncology drug development advice, predominantly to US and European biotechnology companies. Twenty years of pharmaceutical experience have left him with wide ranging clinical, commercial and corporate capabilities. He has expertise in all stages of drug development and through into the marketplace. This includes successful US NDA and European MAA approvals. Dr. Acton has been involved in drug development programs for most solid and hematological malignant indications. He has worked in North American, European, and Japanese pharmaceutical companies. Dr. Acton has served at Board level in both private and publicly traded entities. He originally studied medicine at Oxford and London Universities. Prior to moving into the pharmaceutical industry, Dr. Acton obtained a number of post-graduate qualifications while undergoing general medical and oncology training at a variety of London teaching hospitals.

Roger Cohen, M.D., *Clinical Advisor*

Dr. Cohen is Professor of Medicine at the University of Pennsylvania and Associate Director for Clinical Research for the Abramson Cancer Center. He is a graduate of Harvard Medical School and completed internal medicine and hematology training at Mount Sinai Hospital (NY) followed by research fellowships at the Memorial Sloan-Kettering Cancer Center and National Institutes of Health and a medical oncology fellowship at the National Cancer Institute. He was a medical officer at the FDA Center for Biologics from 1989-1994 where he was Deputy Director, Division of Monoclonal Antibodies. Prior to his arrival at Penn, Dr. Cohen was Director of the Clinical Trials Office at the University of Virginia Cancer Center in Charlottesville and then Director of the Phase 1 Program at the Fox Chase Cancer Center where he also served as interim Medical Oncology Department Chair for more than 2 years. He is an active investigator on a number of first-in-humans clinical trials with research interests that focus on evaluation of novel therapies, including monoclonal antibodies, immune therapies, and small molecule cell-signaling pathway inhibitors. He primarily sees patients with lung and head and neck cancer.

Llew Keltner, M.D., Ph.D., *Clinical Advisor*

Dr. Keltner has been the Chief Executive Officer of AgonOx, a biotech company developing OX40 agonists for use in cancer therapy. Dr. Keltner was the President of Novici Biotech, a privately-held gene and protein optimization firm. He is also Chief Executive Officer of EPISTAT, an international healthcare technology transfer, corporate risk management, and healthcare strategy company that he founded in 1972. Dr. Keltner was Chief Executive Officer and President of Light Sciences Oncology, a privately-held biotechnology company developing a late stage, light-activated therapy for hepatocellular cancer and other solid tumors from 2001 to 2010. From 1997 to 2004, Dr. Keltner was Chief Executive Officer of Metastat, a development-stage biotech company focused on cancer metastasis. He is currently a member of the American Society of Clinical Oncology, American Medical Association, International Association of Tumor Marker Oncology, American Association of Clinical Chemistry, and Drug Information Association. Dr. Keltner received an M.S. in Epidemiology and Biostatistics, a Ph.D. in Biomedical Informatics, and an M.D. from Case Western Reserve University in Cleveland, Ohio. Dr. Keltner has also authored several research publications.

Mark Schoenberg, M.D., *Clinical Advisor*

Dr. Schoenberg is the Bernard L. Schwartz Distinguished Professor of Urologic Oncology at The Johns Hopkins University. His clinical practice is centered on the care of patients with invasive bladder cancer. It has been announced that in April 2014, Dr. Schoenberg will assume the position of Chairman of the Department of Urology at Montefiore Medical Center and Albert Einstein College of Medicine of Yeshiva University, Bronx, New York. Dr. Schoenberg's research program has focused on the translational validation of urinary markers for the early detection of cancer, the development of regenerative medicine solutions to the challenges of lower urinary tract reconstruction, and minimally invasive therapies for urologic malignancies. He is the past chair of the Medical Advisory Board of the Bladder Cancer Advocacy Network, author of *The Guide to Living with Bladder Cancer*, co-editor of *The Textbook of Bladder Cancer*, a contributor to *Campbell's Urology*, and former seminars editor of the journal Urologic Oncology. Dr. Schoenberg has served as principal investigator and co-investigator on numerous clinical trials and from 2005-2009 served as the national principal investigator for the Early Detection Research Network (EDRN/NCI) validation trial of microsatellite analysis for bladder cancer detection. He received his M.D. from the University of Texas Health Science Center and completed residency at the Hospital of the University of Pennsylvania and a basic research and clinical urologic oncology fellowship at Johns Hopkins.

Committees of the Board of Directors

Our common stock is listed on the NASDAQ Capital Market. Under the rules of NASDAQ, independent directors must comprise a majority of a listed company's board of directors and all members our audit, compensation and nominating and corporate governance committees be independent. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act. Under the rules of The NASDAQ Stock Market, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In order to be considered to be independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: (1) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or (2) be an affiliated person of the listed company or any of its subsidiaries.

Our Board undertook a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our Board has determined that Dr. Belsky, Dr. Kharitonov, Dr. Monahan, Mr. Smith and Mr. Bock, representing five of our six directors, do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of The NASDAQ Stock Market. In making this determination, our Board considered the relationships that each non-employee director has with us and all other facts and circumstances our Board deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. We intend to comply with the other independence requirements for committees within the time periods specified above.

We currently have: (i) an audit committee comprised of Dr. Monahan, Mr. Smith, and Mr. Bock, each all of whom are deemed to be independent in accordance with the NASDAQ definition of independence as well as qualify as "audit committee financial experts" as that term is used in Section 407 of Regulation S-K; (ii) a compensation committee comprised of Dr. Belsky, Dr. Monahan and Dr. Kharitonov, each of whom is deemed to be independent in accordance with the NASDAQ definition of independence; and (iii) a nominating and corporate governance committee comprised of Dr. Belsky, Dr. Kharitonov and Mr. Smith.

Leadership Structure

Our Chief Executive Officer also serves as our Chairman of the Board. Our Board does not have a lead independent director. Our board of directors has determined its leadership structure was appropriate and effective for us given our stage of development.

2013 Director Compensation

Compensation of Directors

The following table sets forth information for the fiscal year ended December 31, 2013 regarding the compensation of our directors who at December 31, 2013 were not also named executive officers.

Name	Fees Earned or Paid in Cash	Option Awards(1)	Other Compensation	Total
Paul Belsky, MD	$ 10,870	$ 39,423(2)	$ —	$ 50,293
Michael Kharitonov, Ph.D.	$ 10,870	$ 39,423(2)	$ —	$ 50,293
John Monahan, Ph.D.	$ 10,870	$ 39,423(2)	$ —	$ 50,293
Edward Smith	$ 10,870	$ 39,423(2)	$ —	$ 50,293
Louis Bock	$ 5,000	$ 238,162(3)	$ —	$ 243,162

(1) The amounts in the "Option Awards" column reflect the dollar amounts recognized as compensation expense for the financial statement reporting purposes for stock options for the fiscal year ended December 31, 2013 in accordance with SFAS 123(R). The fair value of the options was determined using the Black-Scholes-Merton model.

(2) Represents 5,435 options granted on April 29, 2013 to each individual director with vesting of 1/16th on the grant on the last day of each calendar quarter following the vesting commencement date, subject to remaining on the Board of Directors.
(3) Represents 21,740 options granted on September 19, 2013 with vesting of 1/16th of the grant on the last day of each calendar quarter following the vesting commencement date, subject to remaining on the Board of Directors.

As of December 31, 2013 the following table sets forth the number of aggregate outstanding option awards held by each of our directors who were not also named executive officers:

Name	Aggregate Number of Option Awards
Paul Belsky, MD	$ 26,958
Michael Kharitonov, Ph.D.	$ 34,567
John Monahan, Ph.D.	$ 34,567
Edward Smith	$ 26,958
Louis Bock	$ 21,740

Following our successful initial public offering and in light of the additional responsibilities being undertaken by our board members due to our transition to a public company, our Compensation Committee conducted an evaluation of the compensation of the members of our board of directors. In order to aid its decision- making, the Compensation Committee considered the compensation practices and the competitive market for directors at companies with which we compete for personnel and an independent compensation advisor was retained to conduct a study of our peer group compensation. Based substantially upon the results of the study, commencing January 2014, directors who are not employees receive an annual cash fee of $25,000 as well as a cash fee of $5,000 for each committee on which they serve and the Chairman of the Audit and Compensation Committees receive an additional $2,000. Upon election to the Board, each non-employee director receives a grant of stock options exercisable for 21,740 shares of common stock vesting over four years having an exercise price equal to the fair market value of the common stock on the date of the grant. Each nonemployee director also receives an annual option grant on the date of the Annual Meeting of Stockholders having a value of $25,000 on such date.

Item 11. ***Executive Compensation***

Set forth below is the compensation that was paid to all executive officers during the years ended December 31, 2013 and December 31, 2012 that exceeded $100,000.

Summary Compensation Table

Name and Principal Position	Year	Salary	Bonus	Options	Other(1)	Total
Jeffrey Wolf	2013	$ 250,000	$ 125,000(3)	$ —	$ 11,472	$ 386,472
Chairman & CEO	2012	$ 250,000	$ 58,333(2)	$ 11,492	$ 11,156	$ 330,981
Matt Czajkowski (4)	2013	$ 65,645	$ 13,125(3)	$ 277,970	$ —	$ 356,740
Chief Financial Officer	2012	—	—	—	—	—
Melissa Price (5)	2013	$ 52,500	$ 10,000(3)	$ 538,400	$ —	$ 600,900
Vice President of Clinical and Regulatory Affairs	2012	—	—	—	—	—
Jennifer Harris (6)	2013	$ 109,857	$ —	$ 64,816	$ —	$ 174,673
Former Vice President of Clinical and Regulatory Affairs	2012	$ 142,904	$ —	$ —	$ —	$ 142,904

(1) Represents payment for health insurance.
(2) This bonus was accrued in 2012 and paid in 2013.
(3) This bonus was accrued in 2013 but paid in 2014.
(4) Mr. Czajkowski was appointed at the Company's Chief Financial Officer in May 2013.
(5) Ms. Price was appointed as the Company's Vice President of Clinical and Regulatory Affairs in October 2013.
(6) The Company and Jennifer Harris terminated their relationship on September 4, 2013.

Outstanding Equity Awards At Fiscal Year-End (December 31, 2013)

Name and Principal Position	Number of securities underlying unexercised options/ exercisable	Number of securities underlying unexercised options/un-exercisable	Option exercise price	Option expiration date
Jeffrey Wolf	10,965(1)	—	$ 2.30	12/18/2019
Chairman of the Board, Chief Executive Officer	108,696(1)	—	$ 0.71	4/7/2016
Matthew Czajkowski	7,458(2)	30,906	$ 8.81	5/15/2023
Chief Financial Officer				
Melissa Price	3,125(3)	46,875	$ 12.57	10/1/2023
Vice President of Clinical and Regulatory Affairs	9,509	12,231	$ 0.64	9/4/2013
Jennifer Harris (4)	905	7,771	$ 8.81	9/4/2013
Former Vice President of Clinical and Regulatory Affairs				

(1) All shares are fully vested as of December 31, 2013.
(2) Mr. Czajkowski's shares vest monthly over a 36 month period. These shares will be fully vested in May 2017.
(3) Mrs. Price's shares vest monthly over a 48 month period. These shares will be fully vested in October 2017.
(4) The Company and Jennifer Harris terminated their relationship on September 4, 2013. Mrs. Harris exercised 9,509 shares in November 2013.

Employment Agreements

Following our successful initial public offering and in light of the additional responsibilities being undertaken by our management due to our transition to a public company, our Compensation Committee conducted an evaluation of the compensation of certain members of our management. In order to aid its decision-making, the Compensation Committee considered the compensation practices and the competitive market for executives at companies with which we compete for personnel and an independent compensation advisor was retained to conduct a study of our peer group compensation.

On December 18, 2009, we entered into an employment agreement with Jeffrey Wolf to act as our Chief Executive Officer, which was amended on November 22, 2011 and further amended on January 20, 2014. Mr. Wolf receives an annual base salary of $395,000 per year. He also may receive, at the sole discretion of the board, additional performance-based bonuses equal to up to 50% of this then outstanding base salary at the end of each year. Upon execution of the agreement, Mr. Wolf was issued options exercisable for 119,661 shares of our common stock. In addition, he is to receive certain options to purchase 2% of our fully diluted equity at an exercise price equal to the then current market price if our stock is traded on a nationally recognized exchange or NASDAQ and our market capitalization is at least $250 million for at least 5 days. In January 2014, in accordance with the terms of his amended employment agreement, Mr. Wolf was also granted options exercisable for 100,000 shares of common stock, vesting annually *pro rata* over a two-year period of time, subject to approval of the shareholders of the 2014 Equity Incentive Plan. The decision to amend Mr. Wolf's Employment Agreement to effect an upward adjustment in his compensation was substantially based on the Compensation Committee's review of competitive market information, including the study conducted by the compensation advisor. The competitive market information and peer group study results indicated that the overall compensation of our CEO was below market, in fact it was below the 25th percentile of the peer group, and that following the upward adjustment it remains below but closer to the 25th percentile of the peer group.

If Mr. Wolf's employment contract is terminated for death or disability (as defined in the agreement), he (or his estate in the event of death) will receive six months severance. If Mr. Wolf's employment is terminated by us other than for cause, he will receive twelve months severance. In addition, if Mr. Wolf's employment is terminated by us other than for cause all Restricted Shares, common stock and options to purchase common stock that would have vested shall immediately vest. Mr. Wolf will not be entitled to any additional severance in the event he is terminated for cause or voluntarily resigns. Under his employment agreement, Mr. Wolf has also agreed to non-competition provisions.

On May 15, 2013, we entered into an employment agreement with Matthew E. Czajkowski to act as our Chief Financial Officer, which was amended on January 20, 2014. Mr. Czajkowski receives an annual base salary of $135,000 per year for his provision of services to us for fifty-percent of his professional time. In addition, Mr. Czajkowski may receive, at the sole discretion of the board, additional performance-based bonuses equal to up to 50% of this then outstanding base salary at the end of each year. Upon execution of the agreement, Mr. Czajkowski was issued options exercisable for 38,364 shares of our common stock, which options are exercisable over a ten year period and vest monthly over three years at an exercise price of $8.81 per share. Upon reaching full-time employment status, he will be entitled to all benefits to which our other executive officers are entitled. If Mr. Czajkowski's employment contract is terminated by the board of directors not for cause (as defined in the agreement) he (or his estate in the event of death) will receive three month's severance. If Mr. Czajkowski's employment contract is terminated for death or disability (as defined in the agreement), he (or his estate in the event of death) will be entitled to receive all unpaid compensation up to such date of termination and such number of options that would have vested upon the date of termination will immediately vest. Under his employment agreement, Mr. Czajkowski has also agreed to customary non-competition provisions.

Effective December 16, 2013, we appointed Anil K. Goyal, Ph.D. as our Vice President of Business Development. In connection with his appointment, Dr. Goyal entered into a four-year employment agreement with us (the "Goyal Employment Agreement"). Pursuant to the Goyal Employment Agreement, Dr. Goyal will be entitled to an annual base salary of $220,000 and will be eligible for discretionary performance bonus payments. Additionally, Dr. Goyal was granted an option to purchase 40,000 shares of our common stock with an exercise price equal to the Company's per share market price on the date of issue. These options vest *pro rata*, on a monthly basis, over forty-eight months. Dr. Goyal is also eligible to receive, on the one year anniversary of his employment, an option to purchase 10,000 shares of our common stock if certain milestones, which are yet to be agreed to, are met by such date. The Goyal Employment Agreement also includes confidentiality obligations and inventions assignments by Dr. Goyal. If Dr. Goyal's employment is terminated for any reason, he or his estate as the case may be, will be entitled to receive the accrued base salary, vacation pay, expense reimbursement and any other entitlements accrued by him to the extent not previously paid (the "Accrued Obligations"); provided, however, that if his employment is terminated (1) by us without Just Cause (as defined in the Goyal Employment Agreement) or (2) by Dr. Goyal for Good Reason (as defined in the Goyal Employment Agreement) then in addition to paying the Accrued Obligations: (x) we shall continue to pay his then current base salary for a period of four months; (y) he shall receive a pro-rated amount of the annual bonus which he would have received during the year without the occurrence of such termination; and (z) he will have the right to exercise any vested options and any options that would have vested in the next four months until the earlier of the expiration of the severance or the expiration of the term of the option.

Effective October 1, 2013, we appointed Melissa Price, Ph.D. as our Vice President of Clinical and Regulatory Affairs, which was amended on January 20, 2014. In connection with her appointment, Dr. Price entered into a four-year employment agreement with us (the "Price Employment Agreement"). Pursuant to the Price Employment Agreement, Dr. Price receives an annual base salary of $210,000 and will be eligible for discretionary performance bonus payments. Additionally, Dr. Price was granted an option to purchase 50,000 shares of our common stock with an exercise price equal to our per share market price on the date of issue. These options vest pro rata, on a monthly basis, over forty-eight months. Dr. Price is also eligible to receive, an option to purchase 10,000 shares of our common stock if at any time prior to December 31, 2014, certain agreed to milestones are attained. The Price Employment Agreement also includes confidentiality obligations and inventions assignments by Dr. Price. If Dr. Price's employment is terminated for any reason, she or her estate as the case may be, will be entitled to receive the Accrued Obligations accrued by her to the extent not previously paid; provided, however, that if her employment is terminated (1) by us without Just Cause (as defined in the Price Employment Agreement) or by Dr. Price for Good Reason (as defined in the Price Employment Agreement) then in addition to paying the Accrued Obligations, (x) we shall continue to pay her then current base salary for a period of four months; (y) she shall receive a pro-rated amount of the annual bonus which she would have received during the year without the occurrence of such termination and (z) she will have the right to exercise any vested options and any options that would have vested in the next four months until the earlier of the expiration of the severance or the expiration of the term of the option.

Effective March 3, 2014, we appointed Taylor Schreiber, M.D., Ph.D., as our Vice President of Research and Development. In connection with his appointment, Dr. Schreiber entered into a four-year employment agreement with us. Pursuant to the employment agreement, Dr. Schreiber receives an annual base salary of $210,000 and will be eligible for discretionary performance bonus payments. Additionally, on the date that the Company's shareholders approve a new stock incentive plan, we have agreed to grant Dr. Schreiber an option to purchase 50,000 shares of our common stock with an exercise price equal to our per share market price on the date of issue. These options will vest pro rata, on a monthly basis, over forty-eight months, with a certain percentage vesting immediately upon grant. Dr. Schreiber is also eligible to receive, on the one year anniversary of his employment, an option to purchase 10,000 shares of our common stock if certain milestones, which are yet to be agreed to, are met by such date. The employment agreement also includes confidentiality obligations and inventions assignments by Dr. Schreiber.

If Dr. Schreiber's employment is terminated for any reason, he or his estate as the case may be, will be entitled to receive the Accrued Obligations accrued by him to the extent not previously paid (the "Accrued Obligations"); provided, however, that if his employment is terminated (1) by the Company without Just Cause (as defined in the Employment Agreement) or by Dr. Schreiber for Good Reason (as defined in the Employment Agreement) then in addition to paying the Accrued Obligations, (x) the Company shall continue to pay his then current base salary for a period of four months; (y) he shall receive a pro-rated amount of the annual bonus which he would have received during the year without the occurrence of such termination and (z) he will have the right to exercise any vested options until the earlier of the expiration of the severance or the expiration of the term of the option.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934 requires our executive officers, directors and persons who beneficially own more than 10 percent of a registered class of the Heat Biologics' equity securities, to file with the SEC initial reports of ownership and reports of changes in ownership of our common stock. Such officers, directors and persons are required by SEC regulation to furnish us with copies of all Section 16(a) forms that they file with the SEC.

Based solely on a review of the copies of such forms that were received by us, or written representations from certain reporting persons that no Form 5s were required for those persons, we are not aware of any failures to file reports or report transactions in a timely manner during the year ended December 31, 2013 other than Sandra Silberman who did not file a Form 4 after receiving an option grant.

Code of Ethics

We have long maintained a Code of Conduct which is applicable to all of our directors, officers and employees. In addition, we have adopted a Code of Ethics for Financial Management which applies to our Chief Executive Officer, Chief Financial Officer, Treasurer and Controller. We undertake to provide a printed copy of these codes free of charge to any person who requests. Any such request should be sent to our principal executive offices attention: Corporate Secretary.

Item 12. ***Security Ownership of Certain Beneficial Owners***

The following table sets forth information, as of March 31, 2014, or as otherwise set forth below, with respect to the beneficial ownership of our common stock (i) all persons know to us to be the beneficial owners of more than 5% of the outstanding shares of our common stock, (ii) each of our directors and our executive officer named in the Summary Compensation Table, and (iii) all of our directors and our executive officer as a group. As of March 31, 2014 we had 6,452,341 shares of common stock outstanding.

Principal Stockholders Table

Unless otherwise indicated the mailing address of each of the stockholders below is c/o Heat Biologics, Inc., 100 Europa Drive, Chapel Hill, North Carolina 27517. Except as otherwise indicated, and subject to applicable community property laws, except to the extent authority is shared by both spouses under applicable law, the Company believes the persons named in the table have sole voting and investment power with respect to all shares of common stock held by them.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage Ownership
Executive Officers & Directors (1)		
Paul Belsky, M.D. (Director)(2)	59,183	*
Louis Bock (Director) (3)	4,075	*
Matthew E. Czajkowski (CFO)(4)	12,786	*
Vadim Deyev, MD, Ph.D.(5)	10,870	*
Anil Goyal, Ph.D.(6)	5,833	*
Michael Kharitonov, Ph.D. (Director)(7)	68,527	1.1%
John Monahan, Ph.D. (Director)(8)	19,778	*
Melissa Price, Ph.D.(9)	8,333	*
Taylor Schreiber (10)	21,740	*
Edward Smith (Director)(11)	711,796	11.0%
Jeffrey Wolf (Director, CEO, Treasurer & Secretary)(12)	1,353,387	20.6%
		*
All Executive Officers & Directors, as a group (11 persons)	2,276,308	34.0%
5% Stockholders(1)		
Brightline Ventures III, LLC(13)	697,303	10.8%
Orion Holdings V, LLC (14)	695,653	10.8%
Seed-One Holdings VI, LLC(14)	536,862	8.3%
FW Heat Biologics, LLC(15)	453,673	7.0%
Franklin Resources, Inc. (16)	657,800	10.2%

*less than 1%

(1) Unless otherwise set forth below, the mailing address of Executive Officers, Directors and 5% or greater holders is c/o the Company, 100 Europa Drive, Chapel Hill, NC 27517.

(2) Dr. Belsky has been issued options exercisable for 26,958 shares of common stock, of which 12,341 shares are vested as of March 31, 2014 and 2,152 shares will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Dr. Belsky.

(3) Mr. Bock has been issued options exercisable for 21,740 shares of common stock, of which 2,717 shares are vested as of March 31, 2014 and 1,358 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Mr. Bock and are included in the number of shares beneficially owned by Mr. Bock.

(4) Mr. Czajkowski has been issued options exercisable for 38,364 shares of common stock, of which 10,655 shares are vested as of March 31, 2014 and 5,328 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Mr. Czajkowski.

(5) Dr. Deyev has been issued options exercisable for 10,870 shares of common stock, of which 10,870 shares are vested as of March 31, 2014 and included in the number of shares beneficially owned by Mr. Deyev.

(6) Dr. Goyal has been issued options exercisable for 40,000 shares of common stock, of which 1,667 shares are vested as of March 31, 2014 and 4,166 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Dr. Goyal.

(7) Includes 49,960 shares of common stock held by Dr. Kharitonov. Dr. Kharitonov disclaims beneficial ownership of these shares except to the extent of any pecuniary interest (as defined in Rule 16a – 1(a)(2) promulgated under the Exchange Act) that he may have in the Sunrise Equity, LLC. Dr. Kharitonov has been issued options exercisable for 34,567 shares of common stock, of which 18,114 shares are vested as of March 31, 2014 and 2,492 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Dr. Kharitonov.

(8) Dr. Monahan has been issued options exercisable for 34,567 shares of common stock, of which 18,114 shares are vested as of March 31, 2014 and 2,492 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Dr. Monahan. Includes 1,211 shares of common stock held by Dr. Monahan.

(9) Dr. Price has been issued options exercisable for 50,000 shares of common stock, of which 6,250 shares are vested as of March 31, 2014 and 5,208 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Dr. Price.

(10) Dr. Schreiber and an entity controlled by Dr. Schreiber have been issued an aggregate of 39,092 shares of common stock that are included in the number of shares beneficially owned by Dr. Schreiber. Does not include options exercisable for 50,000 shares of common stock that we have agreed to issue to Mr. Schreiber upon approval by our shareholders of our 2014 Stock Incentive Plan.

(11) Mr. Smith has been issued options exercisable for 26,958 shares of common stock, of which 14,040 shares are vested as of March 31, 2014 and 2,152 will vest within 60 days of March 31, 2014 and are included in the number of shares beneficially owned by Mr. Smith. Includes 697,303 shares of common stock owned by Brightline Ventures III, LLC, of which Mr. Smith disclaims beneficial ownership except to the extent of any pecuniary interest.

(12) Includes 695,653 shares of common stock held by Orion Holdings V, LLC and 536,862 shares of common stock held by Seed-One Holdings VI, LLC, entities for which Mr. Wolf serves as the managing member. Mr. Wolf is deemed to beneficially own the shares held by such entities as in his role as the managing member he has the control over the voting and disposition of any shares held by these entities. Does not include 86,957 shares of common stock beneficially owned by Mr. Wolf's children's trust which Mr. Wolf is not the trustee of Mr. Wolf disclaims beneficial ownership of these shares except to the extent of any pecuniary interest (as defined in Rule 16a – 1(a)(2) promulgated under the Exchange Act) that he may have in such entities. In addition, if our Company is traded on a recognized national exchange or NASDAQ while Mr. Wolf is employed by us and the market capitalization of our Company is in excess of $250 million for at least five consecutive trading days, then Mr. Wolf will be entitled to receive an additional stock option equal to 2% of the then outstanding shares of our common stock, at an exercise price equal to the then current market price as determined in good faith by the board. Mr. Wolf has been issued options exercisable for 219,661 shares of common stock, of which 119,661 shares are vested and exercisable within 60 days of March 15, 2014 and are included in the beneficial ownership of Mr. Wolf and the remaining 100,000 are subject to forfeiture if our 2014 Stock Incentive Plan is not approved by our shareholders.

(13) Mr. Smith disclaims beneficial ownership of these shares except to the extent of any pecuniary interest (as defined in Rule 16a – 1(a)(2) promulgated under the Exchange Act) that he may have in such entities.

(14) Mr. Wolf serves as the managing member of such entity. Mr. Wolf is deemed to beneficially own the shares held by such entity as in his role as the managing member he has the control over the voting and disposition of any shares held by this entity. Mr. Wolf disclaims beneficial ownership of these shares except to the extent of any pecuniary interest (as defined in Rule 16a – 1(a)(2) promulgated under the Exchange Act) that he may have in such entity.

(15) Information obtained from a Form 3 filed by FW Heat Investors L.P on July 23, 2013. Includes 447,937 shares of common stock FW Heat Genpar, LLC is the sole general partner of FW Heat Investors L.P. GenPar's voting and disposition is decisions are further controlled by its sole member RMB Holdings, LLC ("Holdings"), Holdings' member Live Oak UAD 3/25/2010 (the "Trust") and the Trusts' trustees, Robert M. Bass and Anne T. Bass. The above conversion amount reflects the reverse stock split effected on May 29, 2013. Each of GenPar, Holdings, the Trust and each of the trustees disclaims his, her or its beneficial ownership except to the extent of his, her or its pecuniary interest. The mailing address of FW Heat Investors L.P is 201 Main Street, Fort Worth, Texas 76102.

(16) Information obtained from a Schedule 13G filed with the Securities and Exchange Commission on November 12, 2013. Charles B. Johnson and Rupert H. Johnson, Jr. (the "Principal Shareholders") each own in excess of 10% of the outstanding common stock of Franklin Resources, Inc. ("FRI") and are the principal stockholders of FRI. Franklin Advisor, Inc. a management subsidiary of FRI is also deemed to be a beneficial owner of the common stock owned by FRI. The address of Franklin Resources, Inc. is One Franklin Parkway, San Mateo, California 94403-1906.

Item 13. ***Certain Relationships and Related Transactions, and Director Independence***

Pursuant to our charter, our Audit Committee shall review on an on-going basis for potential conflicts of interest, and approve if appropriate, all our "Related Party Transactions" as required by of NASDAQ Rule 4350(h). For purposes of the Audit Committee Charter, "Related Party Transactions" shall mean those transactions required to be disclosed pursuant to SEC Regulation S-K, Item 404.

The following is a summary of transactions since January 1, 2013 to which we have been a party in which the amount involved exceeded the lesser of $120,000 or one percent of the average of our total assets at the end of the most recent completed fiscal year and in which any of our executive officers, directors or beneficial holders of more than five percent of our capital stock had or will have a direct or indirect material interest, other than compensation arrangements which are described under the section of this Annual Report on Form 10-K entitled "Management—Non-Employee Director Compensation" and "Management — Executive Compensation."

Pursuant to our funding agreement with the University of Miami, the University has been issued shares of Heat Biologics I, Inc. representing 7.5% of the outstanding shares of Heat Biologics I, Inc.

In March 2013, Dr. Belsky, Dr. Monahan and Mr. Wolf each purchased 2,622 shares of the Company's Series B-1 Preferred Stock at a per share price of $2.67 in its private placement that consummated in March 2013 which converted into 1,160 shares of our common stock upon consummation of our initial public offering. In addition, each of Dr. Belsky, Dr. Monahan and Mr. Wolf were issued 51 shares of our common stock upon consummation of our initial public offering in in lieu of Series B-2 Preferred Stock that they had committed to purchase upon our receipt of certain grant funding and the shares underlying the warrants to be issued at such time.

Upon consummation of our initial public offering we issued to Michael Kharitonov 49,960 shares of our common stock upon the automatic conversion of shares of Series 1 Preferred Stock.

Upon consummation of our initial public offering we issued to Brightline Ventures III, LLC 697,303 shares of our common stock upon the automatic conversion of shares of Series A Preferred Stock.

Item 14. ***Principal Accountant Fees and Services***

Independent Registered Public Accounting Firm Fees and Services

The following table sets forth the aggregate fees including expenses billed to us for the years ended December 31, 2013 and 2012 by BDO USA, LLP.

	December 31, 2013	December 31, 2012
Audit Fees and Expenses (1)	$ 180,349	$ 112,730

(1) Audit fees and expenses were for professional services rendered for the audit and reviews of the consolidated financial statements of the Company, professional services rendered for issuance of consents and assistance with review of documents filed with the SEC.

The Audit Committee has adopted procedures for pre-approving all audit and non-audit services provided by the independent registered public accounting firm, including the fees and terms of such services. These procedures include reviewing detailed back-up documentation for audit and permitted non-audit services. The documentation includes a description of, and a budgeted amount for, particular categories of non-audit services that are recurring in nature and therefore anticipated at the time that the budget is submitted. Audit Committee approval is required to exceed the pre-approved amount for a particular category of non-audit services and to engage the independent registered public accounting firm for any non-audit services not included in those pre-approved amounts. For both types of pre-approval, the Audit Committee considers whether such services are consistent with the rules on auditor independence promulgated by the SEC and the PCAOB. The Audit Committee also considers whether the independent registered public accounting firm is best positioned to provide the most effective and efficient service, based on such reasons as the auditor's familiarity with our business, people, culture, accounting systems, risk profile, and whether the services enhance our ability to manage or control risks and improve audit quality. The Audit Committee may form and delegate pre-approval authority to subcommittees consisting of one or more members of the Audit Committee, and such subcommittees must report any pre-approval decisions to the Audit Committee at its next scheduled meeting. All of the services provided by the independent registered public accounting firm were pre-approved by the Audit Committee.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a)(1) The following financial statements are included in this Annual Report on Form 10-K for the fiscal years ended December 31, 2013 and 2012.

1. Independent Registered Public Accounting Firm
2. Consolidated Balance Sheets as of December 31, 2013 and 2012
3. Consolidated Statements of Operations for the years ended December 31, 2013 and 2012
4. Consolidated Statements of changes in Stockholders' Equity for the years ended December 31, 2013 and 2012
5. Consolidated Statements of Cash Flows for the years ended December 31, 2013 and 2012
6. Notes to Consolidated Financial Statements

(a)(2) All financial statement schedules have been omitted as the required information is either inapplicable or included in the Consolidated Financial Statements or related notes.

(a)(3) The following exhibits are either filed as part of this report or are incorporated herein by reference:

Exhibit No.	Description
1.1	Form of Underwriting Agreement between Heat Biologics, Inc. and Aegis Capital Corp., as representative of the several underwriters (1)
3.1	Certificate of Incorporation filed on June 10, 2008(2)
3.2	Amended and Restated Bylaws, as currently in effect(2)
3.3	Amended and Restated Certificate of Incorporation filed on October 16, 2009(2)
3.4	Second Amended and Restated Certificate of Incorporation filed on December 16, 2011(2)
3.5	Third Amended and Restated Certificate of Incorporation, as currently in effect(2)
3.6	Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation filed on May 29, 2013(1)
4.1	2009 Stock Incentive Plan(2)##
4.2	First Amendment of the 2009 Stock Incentive Plan(2)##
4.3	Second Amendment of the 2009 Stock Incentive Plan(2)##
4.4	Third Amendment of the 2009 Stock Incentive Plan(2)##
4.5	Fourth Amendment of the 2009 Stock Incentive Plan(2)##
4.6	Warrant issued to Square 1 Bank(2)
4.7	Warrant issued to North Carolina Biotechnology Center(1)
4.8	Specimen Common Stock Certificate of Heat Biologics, Inc.(2)
4.9	Form of Stock Purchase Agreement by and among Heat Biologics, Inc. and the Series B investors (Portions of the exhibit have been omitted pursuant to a request for confidential treatment. The omitted portions have been filed with the Commission)(2)##
4.10	Form of Representative's Warrant (1)
4.11	Amendment to Stock Warrant with North Carolina Biotechnology Center(1)
10.1	License Agreement (UMJ110) between the University of Miami and Heat Biologics, Inc. effective February 18, 2011 (2)##
10.2	License Agreement (97-14) between the University of Miami and its School of Medicine and Heat Biologics, Inc. effective July 11, 2008(2)
10.3	License Agreement (143) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective February 11, 2011(2)
10.4	License Agreement (D-107) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective February 18, 2011(2)
10.5	License Agreement (SS114A) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective February 18, 2011 (2)
10.6	Promissory Note with North Carolina Biotechnology Center dated December 14, 2011(2)
10.7	Loan Agreement with North Carolina Biotechnology Center dated December 14, 2011(2)

10.8	Common Stock Subscription Agreement between the University of Miami and Heat Biologics I, Inc. dated July 7, 2009(2)
10.9	Employment Agreement with Jeffrey Wolf dated December 18, 2009(2)##
10.10	Amendment to Employment Agreement with Jeffrey Wolf dated as of January 1, 2011(2)##
10.11	Lease with Europa Center dated as of November 18, 2011(2)
10.12	Non-Exclusive Evaluation and Biological Material License Agreement with American Type Culture Collection effective April 12, 2011(2) ##
10.13	Manufacturing Services Agreement with Lonza Walkersville, Inc. dated as of October 20, 2011(2)
10.14	Assignment and Assumption Agreement dated June 26, 2009(2)
10.15	Termination Agreement UM97-114 dated June 26, 2009(2)
10.16	Loan and Security Agreement with Square 1 Bank dated August 7, 2012(2)
10.17	Employment Agreement with Jennifer Harris dated November 3, 2011 and amendment thereto dated May 1, 2013(1)##
10.18	Amendment to License Agreement (UM97-14) dated April 29, 2009(2)
10.19	First Amendment to Loan and Security Agreement with Square 1 Bank dated November 30, 2012(2)
10.20	Second Amendment to License Agreement (UMSS-114) dated August 11, 2009(2)
10.21	Exclusive License between Heat Biologics, Inc. and the University of Michigan dated July 22, 2011(2)
10.22	1st Lease Modification Agreement dated December 19, 2012(2)
10.23	Form of Co Sale and First Refusal Agreement by and among Heat Biologics, Inc. and the Series B investors(2)
10.24	Form of Voting Agreement by and among Heat Biologics, Inc. and the Series B investors(2)
10.25	Form of Investor's Rights Agreement by and among Heat Biologics, Inc. and the Series B investors(2)
10.26	Second Amendment to Loan and Security Agreement with Square 1 Bank dated January 14, 2013(2)
10.27	Third Amendment to Loan and Security Agreement with Square 1 Bank dated February 28, 2013(2)
10.28	Fourth Amendment to Loan and Security Agreement with Square 1 Bank dated March 19, 2013(2)
10.29	Option Contract for Exclusive License between Heat Biologics, Inc. and the University of Miami dated April 1, 2013(2)
10.30	Fifth Amendment to the Loan and Security Agreement with Square 1 Bank dated April 18, 2013(2)
10.31	Employment Agreement with Matthew Czajkowski dated May 15, 2013(1)##
10.32	Form of Lock-up Agreement(1)
10.33	Form of Agreement with Series B Preferred Stockholders to amend Stock Purchase Agreement(1)
10.34	Employment Agreement, dated as of October 1, 2013, by and between Melissa Price and the Company(2)##
10.34	Employment Agreement, dated as of December 16, 2013, by and between Anil K. Goyal and the Company(4)##
10.35	Amendment to Employment Agreement, dated as of January20 , 2014 between the Company and Jeffrey Wolf(5)##
10.36	Amendment to Employment Agreement, dated as of January20, 2014 between the Company and Melissa Price(5)##
10.37	Amendment to Employment Agreement, dated as of January20, 2014 between the Company and Matthew Czajkowski(5)##
10.38	Employment Agreement, dated as of March 3, 2014 between the Company and Taylor Schreiber (6)##
10.39	Lease Agreement dated January 24, 2014*
10.40	License Agreement (UMK-161) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective March 4, 2014* ***
21.1	List of Subsidiaries*
23.1	Consent of Independent Registered Public Accounting Firm (BDO USA, LLP) *
31.1	Certification of Jeffrey Wolf, Chief Executive Officer, pursuant to Rule 13a-14(a)/15d-14(a) *
31.2	Certification of Matthew Czajkowski, Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) *
32.1	Certification of Jeffrey Wolf, Chief Executive Officer pursuant to Section 1350 of the Sarbanes-Oxley Act of 2002 *
32.2	Certification Matthew Czajkowski, Chief Financial Officer pursuant to Section 1350 of the Sarbanes-Oxley Act of 2002 *
101.INS	XBRL Instance Document **
101.SCH	XBRL Taxonomy Extension Schema Document **
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document **
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document **
101.LAB	XBRL Taxonomy Extension Label Linkbase Document **
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document **

(1) Previously filed on Form S-1 with the Securities and Exchange Commission on May 6, 2013.
(2) Previously filed on Form S-1 with the Securities and Exchange Commission on May 30, 2013.
(3) Previously filed on Form 8-K with the Securities and Exchange Commission on October 1, 2013.

(4) Previously filed on Form 8-K with the Securities and Exchange Commission on December 19, 2013.
(5) Previously filed on Form 8-K with the Securities and Exchange Commission on January 21, 2014.
(6) Previously filed on Form 8-K with the Securities and Exchange Commission on March 5, 2014.
* Filed herewith.
Management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a)(3) of this report.
** As provided in Rule 406T of Regulation S-T, this information is deemed furnished and not filed for purposes of Sections 11 and 12 of the Securities Act of 1933, as amended, and Section 18 of the Securities Exchange Act of 1934, as amended.
*** Confidential treatment has been requested as to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

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.

HEAT BIOLOGICS, INC.
By: /s/ Jeffrey Wolf
Jeffrey Wolf
Chief Executive Officer and Director
(Principal Executive Officer)
Date: March 31, 2014

By: /s/ Matthew Czajkowski
Matthew Czajkowski
Chief Financial Officer
(Principal Financial and Principal Accounting Officer)
Date: March 31, 2014

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

Signature	Title	Date
/s/ Jeffrey Wolf Jeffrey Wolf	Chief Executive Officer, President and Chairman (Principal Executive Officer)	March 31, 2014
/s/ John Monahan, Ph.D. John Monahan, Ph.D.	Director	March 31, 2014
/s/ Michael Kharitonov, Ph.D. Michael Kharitonov, Ph.D.	Director	March 31, 2014
/s/ Louis C. Bock Louis C. Bock	Director	March 31, 2014
/s/ Paul Belsky, MD Paul Belsky, MD	Director	March 31, 2014
/s/ Edward B. Smith Edward B. Smith	Director	March 31, 2014

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Heat Biologics, Inc.
(A Development Stage Company)
Chapel Hill, North Carolina

We have audited the accompanying consolidated balance sheets of Heat Biologics, Inc. (the "Company") (a development stage company) as of December 31, 2013 and 2012 and the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for each of the two years in the period ended December 31, 2013, and for the period from June 30, 2008 (inception) to December 31, 2013. 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 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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also 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, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Heat Biologics, Inc. at December 31, 2013 and 2012, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2013 and the period from June 10, 2008 (inception) to December 31, 2013**,** in conformity with accounting principles generally accepted in the United States of America.

/s/ BDO USA, LLP
BDO USA, LLP

Raleigh, North Carolina
March 31, 2013

HEAT BIOLOGICS, INC.
(A development stage company)
Consolidated Balance Sheets

	December 31, 2013	December 31, 2012
Assets		
Current Assets		
Cash and cash equivalents	$ 4,566,992	$ 5,030
Short term investments	17,297,165	—
Related party receivable	24,946	9,571
Prepaid expenses and other current assets	1,066,638	58,436
Total Current Assets	22,955,741	73,037
Property and Equipment, net	53,753	10,782
Other Assets		
Restricted cash	1,252	26,214
Debt issuance costs, net	—	28,229
Deposits	9,320	9,320
Total Other Assets	10,572	63,763
Total Assets	$ 23,020,066	$ 147,582
Liabilities and Stockholders' Equity (Deficit)		
Current Liabilities		
Accounts payable	$ 651,917	$ 505,471
Accrued expenses and other payables	503,050	129,208
Accrued interest	25,364	13,763
Notes payable - current portion	—	66,806
Total Current Liabilities	1,180,331	715,248
Long Term Liabilities		
Notes payable - less current portion	—	658,194
Convertible notes payable	—	197,099
Stock warrants liability	122,590	92,150
Total Liabilities	1,302,921	1,662,691
Stockholders' Equity (Deficit)		
Series 1 preferred stock, $0.0001 par value; 112,500 shares authorized, 112,500 shares issued and outstanding at December 31, 2012 and 0 shares issued and outstanding at December 31, 2013	—	11
Series A preferred stock, $0.0001 par value; 2,000,000 shares authorized, 1,863,128 shares issued and outstanding at December 31, 2012 and 0 shares issued and outstanding at December 31, 2013	—	186
Common stock, $.0002 par value; 50,000,000 shares authorized, 6,375,426 and 2,144,542 shares issued and 6,375,426 and 1,858,971 shares outstanding at December 31, 2013 and 2012, respectively	961	405
Additional paid in capital	34,337,591	4,495,832
Deficit accumulated during the development stage	(12,346,630)	(5,935,282)
Total Stockholders' Equity (Deficit)	21,991,922	(1,438,848)
Non-Controlling Interest	(274,777)	(76,261)
Total Stockholders' Equity (Deficit) – Heat Biologics, Inc.	21,717,145	(1,515,109)
Total Liabilities and Stockholders' Equity (Deficit)	$ 23,020,066	$ 147,582

See Notes to Consolidated Financial Statements

HEAT BIOLOGICS, INC.
(A development stage company)
Consolidated Statements of Operations

	Year ended, December 31,		Period from June 10, 2008 (inception) to December 31,
	2013	2012	2013
Grant awards	$ —	$ 3,110	$ 585,589
Operating expenses:			
Research and development	2,737,688	902,938	6,095,170
Clinical and regulatory	1,397,157	253,189	1,825,000
General and administrative	2,429,796	1,189,660	4,725,322
Total operating expenses	6,564,641	2,345,787	12,645,492
Loss from operations	(6,564,641)	(2,342,677)	(12,059,903)
Interest income	10,068	2	10,755
Other income (expense)	23,828	(7,257)	15,045
Interest expense	(79,119)	(101,086)	(298,580)
Total non-operating expenses	(45,223)	(108,341)	(272,780)
Loss from continuing operations	(6,609,864)	(2,451,018)	(12,332,683)
Loss from discontinued operations	—	(20,129)	(288,724)
Net loss	(6,609,864)	(2,471,147)	(12,621,407)
Net loss - non-controlling interest	(198,516)	(50,947)	(274,777)
Beneficial conversion charge	(2,300,000)	—	(2,300,000)
Preferred stock dividend	(361,668)	—	(361,668)
Net loss attributable to common stockholders	$ (9,073,016)	$ (2,420,200)	$ (15,008,298)
Net loss per share attributable to common stockholders—basic and diluted	$ (2.42)	$ (1.32)	
Weighted-average number of common shares used in net loss per share attributable to common stockholders—basic and diluted	3,747,357	1,831,769	

See Notes to Consolidated Financial Statements

HEAT BIOLOGICS INC.
(A development stage company)
Consolidated Statements of Stockholders' Equity (Deficit)

	Preferred Stock			Common				
	Series 1	Series A	Series B	Stock	APIC	Accumulated Deficit	Non-Controlling Interest	Total Stockholders
Common Stock Issued:								
June 10, 2008, 1,395,559 shares	$ —	$ —	$ —	$ 321	$ —	$ —	$ —	$ 321
July 11, 2008, 260,870 shares	—	—	—	60	—	—	—	60
July 11, 2008, 184,048 shares	—	—	—	42	—	—	—	42
Non-cash consideration for rent	—	—	—	—	4,104	—	—	4,104
Net loss	—	—	—	—	—	(281,971)	—	(281,971)
Balance December 31, 2008	—	—	—	423	4,104	(281,971)	—	(277,444)
Common Stock Issued:								
January 1, 2009, 60,871 shares	—	—	—	14	—	—	—	14
April 20, 2009, 21,835 shares	—	—	—	5	—	—	—	5
April 20, 2009, 98,626 shares	—	—	—	23	—	—	—	23
Common Stock Cancelled:								
June 26, 2009, (282,672) shares	—	—	—	(65)	65	—	—	—
Preferred Stock Issued:								
November 3, 2009, 112,500 shares at $2.22 per share	—	11	—	—	249,989	—	—	250,000
Non-cash consideration for rent	—	—	—	—	5,760	—	—	5,760
Stock based compensation	—	—	—	—	13,364	—	—	13,364
Net loss	—	—	—	—	—	(416,789)	(6,650)	(423,439)
Balance December 31, 2009	—	11	—	400	273,282	(698,760)	(6,650)	(431,717)
Non-cash consideration for rent	—	—	—	—	5,760	—	—	5,760
Stock based compensation	—	—	—	—	30,791	—	—	30,791
Stock issuance costs	—	—	—	—	(7,584)	—	—	(7,584)

Net loss	—	—	—	—	—	(711,438)	(10,406)	(721,844)
Balance December 31, 2010	—	11	—	400	302,249	(1,410,198)	(17,056)	(1,124,594)
Notes Payable Converted to Preferred Stock:								
September 30, 2011, 1,273,800 shares at $2.10 per share	—	127	—	—	2,674,853	—	—	2,674,980
Preferred Stock Issued:								
December 20, 2011, 73,455 shares at $2.10 per share	—	7	—	—	154,248	—	—	154,255
Preferred Series A Converted to Preferred Series 1, December 16, 2011, 112,500 shares at $2.22 per share	11	(11)	—	—	—	—	—	—
Stock based compensation	—	—	—	—	91,984	—	—	91,984
Stock issuance costs	—	—	—	—	(17,581)	—	—	(17,581)
Net loss	—	—	—	—	—	(2,104,884)	(8,258)	(2,113,142)
Balance December 31, 2011	$ 11	$ 134	$ —	$ 400	$ 3,205,753	$ (3,515,082)	$ (25,314)	$ (334,098)

See Notes to Consolidated Financial Statements

HEAT BIOLOGICS INC.
(A development stage company)
Consolidated Statements of Stockholders' Equity (Deficit) (Continued)

	Preferred Stock			Common		Accumulated	Non-Controlling	Total
	Series 1	Series A	Series B	Stock	APIC	Deficit	Interest	Stockholders
Balance December 31, 2011	$ 11	$ 134	$ —	$ 400	$ 3,205,753	$ (3,515,082)	$ (25,314)	$ (334,098)
Preferred Stock Issued:								
March 7, 2012, 47,619 shares at $2.10 per share	—	5	—	—	99,995	—	—	100,000
April 3, 2012, 39,683 shares at $2.10 per share	—	4	—	—	83,330	—	—	83,334
April 27, 2012, 428,571 shares at $2.10 per share	—	43	—	—	899,957	—	—	900,000
Common Stock Issued:								
December 27, 2012, 1,087 shares	—	—	—	—	825	—	—	825
December 31, 2012, 21,740 shares	—	—	—	5	10,495	—	—	10,500
Vesting of restricted stock, 97,007 shares	—	—	—	—	—	—	—	—
Stock based compensation	—	—	—	—	217,896	—	—	217,896
Stock issuance costs	—	—	—	—	(22,419)	—	—	(22,419)
Net loss	—	—	—	—	—	(2,420,200)	(50,947)	(2,471,147)
Balance at December 31, 2012	11	186	—	405	4,495,832	(5,935,282)	(76,261)	(1,515,109)
Preferred Stock Issued:								
March 25, 2013, 1,891,419 shares at $2.67 per share	—	—	189	—	5,049,901	—	—	5,050,090
Common Stock Issued:								
Preferred Series 1 Converted to Common Stock, July 29, 2013, 49,960	(11)	—	—	—	11	—	—	—
Preferred Series A Converted to Common Stock, July 29, 2013, 810,057	—	(186)	—	—	186	—	—	—
Preferred								

Series B Converted to Common Stock, July 29, 2013, 836,666	—	—	(189)	—	189	—	—	—
Common Stock Issued:								
Initial public offering, 2,700,000 shares, net of underwriting discounts	—	—	—	540	25,110,000	—	—	25,110,540
Exercise of stock options, 80,706 shares	—	—	—	16	54,026	—	—	54,042
Vesting of restricted stock, 2,899 shares	—	—	—	—	—	—	—	—
Preferred Stock Dividend, July 29, 2013, 36,167 shares	—	—	—	—	—	—	—	—
Stock based compensation	—	—	—	—	571,924	—	—	571,924
Stock issuance costs	—	—	—	—	(944,478)	—	—	(944,478)
Net loss	—	—	—	—	—	(6,411,348)	(198,516)	(6,609,864)
Balance at December 31, 2013	$ —	$ —	$ —	$ 961	$ 34,337,591	$ (12,346,630)	$ (274,777)	$ 21,717,145

See Notes to Consolidated Financial Statements

HEAT BIOLOGICS, INC.
(A development stage company)
Consolidated Statements of Cash Flows

	For the year ended December 31,		June 10, 2008 (Inception) to December 31,
	2013	2012	2013
Cash Flows from Operating Activities			
Net loss	$ (6,609,864)	(2,471,147)	(12,621,407)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	6,348	2,587	9,559
Amortization of debt issuance costs	28,229	58,458	126,742
Amortization of bond premium	50,781	—	50,781
Re-measurement of fair value of stock warrants liability	30,440	3,540	35,020
Non-cash consideration for rent	—	—	15,624
Stock based compensation	571,924	217,896	925,959
Increase (decrease) in cash arising from changes in assets and liabilities:			
Related party receivable	(15,375)	(9,571)	(24,946)
Prepaid expenses and other current assets	(1,008,202)	(52,843)	(1,066,638)
Restricted cash	24,962	(24,502)	(1,252)
Deposits	—	200	(9,320)
Accounts payable	146,446	85,323	651,917
Accrued expenses and other payables	373,842	103,307	503,050
Accrued interest	11,601	13,077	76,635
Net Cash Used by Operating Activities	(6,388,868)	(2,073,675)	(11,328,276)
Cash Flows from Investing Activities			
Purchases of short term investments	(17,347,946)	—	(17,347,946)
Purchase of property and equipment	(49,319)	(1,780)	(63,312)
Net Cash Used in Investing Activities	(17,397,265)	(1,780)	(17,411,258)
Cash Flows from Financing Activities			
Proceeds from initial public offering, net of underwriting discounts	25,110,000	—	25,110,000
Related party payable	—	(12,500)	—
Borrowings on notes payable	200,000	950,000	1,150,000
Borrowings on line of credit	—	—	273,427
Payments on notes payable	(925,000)	(225,000)	(1,150,000)
Payments on line of credit	—	—	(273,427)
Issuance of convertible notes payable, net of issuance costs	—	197,099	2,781,636
Payments on convertible notes payable	(197,099)	—	(197,099)
Issuance of common stock	540	11,325	12,330
Exercise of stock options	54,042	—	54,042
Issuance of series A preferred stock	—	1,083,334	1,487,589
Issuance of series B-1 preferred stock	5,050,090	—	5,050,090
Stock issuance costs	(944,478)	(22,419)	(992,062)
Net Cash Provided by Financing Activities	28,348,095	1,981,839	33,306,526
Net Increase in Cash and Cash Equivalents	4,561,962	(93,616)	4,566,992
Cash and Cash Equivalents – Beginning of Period	5,030	98,646	—
Cash and Cash Equivalents – End of Period	$ 4,566,992	$ 5,030	$ 4,566,992

See Notes to Consolidated Financial Statements

HEAT BIOLOGICS, INC.
(A development stage company)
Consolidated Statements of Cash Flows (Continued)

	The year ended December 31,		June 10, 2008 (Inception) to December 31,
	2013	2012	2013
Supplemental Disclosure for Cash Flow Information			
Interest paid	$ 60,922	$ 29,049	$ 135,606
Supplemental Schedule of Noncash Investing and Financing Activities			
Beneficial conversion charge	$ 2,300,000	$ —	$ 2,300,000
Issuance of preferred stock warrants and debt issuance costs	$ —	$ 31,680	$ 87,570
Cancellation of common stock	$ —	$ —	$ 65
Non-cash consideration for rent	$ —	$ —	$ 15,624
Non-cash conversion of preferred stock into common stock	$ 386	$ —	$ 386
Preferred stock dividend	$ 361,668	$ —	$ 361,668

See Notes to Consolidated Financial Statements

1. Organization

Heat Biologics, Inc. ("Heat" or "the Company"), was incorporated in 2008 pursuant to the laws of the state of Delaware. Heat Biologics, Inc. is a development stage company focused on the development and commercialization of *ImPact* Therapy, a platform technology that offers a novel approach to treating cancer and other diseases by using live, modified cell lines to activate the immune system against specific defined targets. Heat is currently in Phase II clinical trials with its first drug for patients with advanced non-small cell lung cancer. During 2010 and part of 2011, Heat was headquartered in Miami Beach, Florida. In July 2011, Heat moved its headquarters to Chapel Hill, North Carolina.

Heat has owned 92.5% interests in two subsidiaries, Heat Biologics I, Inc. and Heat Biologics II, Inc. since their incorporation in the state of Delaware and commencement of operations on April 28, 2009. In April of 2012, the Board of Directors approved the sale of Heat's entire 92.5% interest in Heat II. An independent appraisal report, issued on April 18, 2012, was concurrently approved by the Board as an accurate assessment of Heat II's fair value of $0.0025 per share. On June 25, 2012 a stock purchase agreement was executed for the purchase of 3,700,000 shares of Heat II common stock by a related party. The operations of Heat II during fiscal year 2012 through June 25, 2012, and inception to date, are presented in the accompanying consolidated statements of operations as a loss from discontinued operations. At December 31, 2013 and 2012, there were no assets or liabilities on the consolidated balance sheets related to the discontinued operations of Heat II.

On May 30, 2012, Heat formed two-wholly owned subsidiaries, Heat Biologics III, Inc. ("Heat III") and Heat Biologics, IV, Inc. ("Heat IV"). Heat also formed Heat Biologics GmbH (Heat GmbH), a wholly-owned limited liability company, organized in Germany on September 11, 2012.

Heat's product candidates require clinical trials and approvals from regulatory agencies, as well as acceptance in the marketplace. Part of Heat's strategy is to develop and commercialize some of its product candidates by continuing existing arrangements with academic and corporate collaborators and licensees and by entering into new collaborations.

2. Summary of Significant Accounting Policies

Basis of Accounting

The accompanying consolidated financial statements have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Activities during the development stage include developing the business plan, raising capital, and developing the Company's platform technology.

Principles of Consolidation

The consolidated financial statements include the accounts of Heat Biologics, Inc. and its subsidiaries, Heat Biologics I, Inc. ("Heat I") and Heat Biologics II, Inc. ("Heat II"), Heat Biologics III, Inc. ("Heat III"), Heat Biologics IV, Inc. ("Heat IV") and Heat Biologics GmbH. All significant intercompany accounts and transactions have been eliminated in consolidation. At December 31, 2013 and 2012, Heat held a 92.5% controlling interest in Heat I and accounts for its less than 100% interest in the consolidated financial statements in accordance with U.S. GAAP. Accordingly, the Company presents non-controlling interests as a component of stockholders' equity (deficit) on its consolidated balance sheets and reports non-controlling interest net loss under the heading "net loss – non-controlling interest" in the consolidated statements of operations. In June 2012, the Company sold its entire 92.5% interest in Heat II. The operations of Heat II through June 25, 2012, and inception to date, are presented in the accompanying consolidated statements of operations as a loss from discontinued operations.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Estimates are used for, but not limited to, useful lives of fixed assets, income taxes and stock-based compensation. Actual results may differ from those estimates.

Cash and Cash Equivalents and Restricted Cash

The Company considers all cash and other highly liquid investments with initial maturities from the date of purchase of three months or less to be cash and cash equivalents. The Company had a restricted cash balance of $1,252 and $26,214 at December 31, 2013 and 2012, respectively. The United States Patent and Trade Office ("USPTO") requires the Company to maintain an account with a minimum of $1,000 to be used to pay fees associated with new trademarks of the Company and one of the Company's lenders required a minimum $25,000 cash balance to be maintained with the lending bank during 2012.

Concentration of Credit Risk

At times, cash balances may exceed the Federal Deposit Insurance Corporation ("FDIC") insurable limits. The Company has never experienced any losses related to these balances. All of the Company's cash balances were fully insured at December 31, 2012. As of December 31, 2013, cash amounts in excess of $250,000 were not fully insured. The uninsured cash balance as of December 31, 2013 was $4,046,451. The Company does not believe it is exposed to significant credit risk on cash and cash equivalents.

Debt Issuance Costs, net

Debt issuance costs include the costs incurred to obtain financing, including the fair value of preferred stock warrants at the date of their issuance, and are amortized using the straight-line method, which approximates the effective interest method, over the life of the related debt. Debt issuance costs are included in the accompanying consolidated balance sheets net of amortization.

Property and Equipment

Property and equipment are stated at cost and are capitalized if the cost exceeds $500. Depreciation is calculated using the straight-line method and is based on estimated useful lives of 3 years for computer equipment and seven years for furniture and fixtures.

Stock Warrants Liability

In December 2011 and August 2012, the Company entered into a promissory note with each of two lenders and issued preferred stock warrants to each lender as consideration. The Company has accounted for these freestanding warrants as liabilities at their fair value on the accompanying consolidated balance sheets. The warrants are subject to re-measurement at each balance sheet date, and the change in fair value, if any, is recognized as other income (expense). The warrants converted from preferred stock warrants into warrants to purchase common stock upon the completion of the initial public offering in July 2013 and the number of shares were adjusted for the 1-for-2.3 reverse stock split. However, since the warrants still have an anti-dilution provision, they remain liabilities and are subject to re-measurement at each balance sheet date. The warrants are valued using a Monte Carlo simulation which is a generally accepted statistical method used to generate a defined number of stock price paths in order to develop a reasonable estimate of the range of the Company's future expected stock prices and minimizes standard error.

Significant assumptions used in the valuation of the stock warrants liability were as follows:

	December 31, 2013	December 31, 2012
Exercise price	$ 4.83	$ 4.83
Risk-free interest rate	2.75%	1.78%
Expected volatility	71.6-71.9%	75.6-76.3%
Expected life (years)	7.96-8.6	10
Expected dividend yield	0%	0%

Beneficial Conversion Feature

When the Company issues an equity security that is convertible into common stock at a discount from the fair value of the common stock at the date the equity security counterparty is legally committed to purchase such a security (Commitment Date), a beneficial conversion charge is measured and recorded on the Commitment Date for the difference between the fair value of the Company's common stock and the effective conversion price of the equity security. If the intrinsic value of the beneficial conversion feature is greater than the proceeds allocated to the equity security, the amount of the discount assigned to the beneficial conversion feature is limited to the amount of the proceeds allocated to the equity.

The amount allocated to the beneficial conversion feature is presented as an immediate charge to earnings available to common shareholders for convertible preferred stock instruments that are convertible by the shareholders at any time. In connection with the Company's issuance of Series B-1 Preferred Stock during fiscal year 2013, the Company recorded a beneficial conversion charge of $2.3 million representing the difference between the effective conversion price of $6.14 and the fair value of the Company's common stock as of the Commitment Date of $8.81.

Net Loss per Share

Basic net loss per share is computed by dividing net loss by the weighted average number of common shares outstanding during each year. Fully diluted net loss per share is computed using the weighted average number of common shares and dilutive securities outstanding during each year. Dilutive securities having an anti-dilutive effect on diluted loss per share are excluded from the calculation.

Fair Value of Financial Instruments

The carrying amount of certain of the Company's financial instruments, including cash and cash equivalents, prepaid expenses and other current assets, deposits, accounts payable and accrued expenses and other payables approximate fair value due to their short maturities. The carrying value of the Company's notes payable and convertible notes payable at December 31, 2012 approximated fair value because the interest rates under those obligations approximated market rates of interest available to the Company for similar instruments.

As a basis for determining the fair value of certain of the Company's financial instruments, the Company utilizes a three-tier value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level I – Observable inputs such as quoted prices in active markets for identical assets or liabilities.

Level II – Observable inputs, other than Level I prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level III – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

This hierarchy requires the Company to use observable market data, when available, and to minimize the use of unobservable inputs when determining fair value. The Company's financial instruments that are measured at fair value on a recurring basis consist only of the stock warrants liability. The Company's stock warrants liability was classified within Level III of the fair value hierarchy and as of December 31, 2013 and 2012.

The change in the fair value of the Level III warrants liability is summarized below:

Fair value at December 31, 2012	$ 92,150
Issuances	—
Change in fair value during the period	30,440
Fair value at December 31, 2013	$ 122,590

The change in the fair value of the Level III stock warrants liability is summarized below:

	December 31, 2013			
Description	Identical Assets (Level 1)	Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total December 31, 2013
Liabilities measured at fair value				
Stock Warrant Liability	$ —	$ —	$ (122,590)	$ (122,590)
Total Liabilities measured at fair value	$ —	$ —	$ (122,590)	$ (122,590)

	December 31, 2012			
Description	Identical Assets (Level 1)	Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total December 31, 2012
Liabilities measured at fair value				
Stock Warrant Liability	$ —	$ —	$ (92,150)	$ (92,150)
Total Liabilities measured at fair value	$ —	$ —	$ (92,150)	$ (92,150)

Marketing

Marketing costs are expensed as incurred. Marketing expense totaled $135,366 and $5,921 for the years ended December 31, 2013 and 2012, respectively. Marketing expenses from inception through December 31, 2013 totaled $183,274.

Income Tax

Income taxes are accounted for using the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to temporary differences between the financial statements carrying amounts of assets and liabilities and their respective tax bases, operating loss carryforwards, and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

In accordance with FASB ASC 740, *Accounting for Income Taxes*, the Company reflects in the financial statements the benefit of positions taken in a previously filed tax return or expected to be taken in a future tax return only when it is considered 'more-likely-than-not' that the position taken will be sustained by a taxing authority. As of December 31, 2013 and 2012, the Company had no unrecognized income tax benefits and correspondingly there is no impact on the Company's effective income tax rate associated with these items. The Company's policy for recording interest and penalties relating to uncertain income tax positions is to record them as a component of income tax expense in the accompanying consolidated statements of operations, As of December 31, 2013 and 2012, the Company had no such accruals.

Stock-Based Compensation

The Company accounts for stock-based compensation arrangements with employees and non-employee directors using a fair value method which requires the recognition of compensation expense for costs related to all stock-based payments, including stock options. The fair value method requires the Company to estimate the fair value of stock-based payment awards on the date of grant using an option pricing model.

Stock-based compensation costs are based on the fair value of the underlying option calculated using the Black-Scholes-Merton option pricing model on the date of grant for stock options and recognized as expense on a straight-line basis over the requisite service period, which is the vesting period. Determining the appropriate fair value model and related assumptions requires judgment, including estimating stock price volatility, forfeiture rates and expected term. The expected volatility rates are estimated based on the actual volatility of comparable public companies over the expected term. The expected term for the years ended December 31, 2013 and 2012 represents the average time that options are expected to be outstanding based on the mid-point between the vesting date and the end of the contractual term of the award. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The Company has not paid dividends and does not anticipate paying a cash dividend in the foreseeable future and, accordingly, uses an expected dividend yield of zero. The risk-free interest rate is based on the rate of U.S. Treasury securities with maturities consistent with the estimated expected term of the awards. The measurement of nonemployee share-based compensation is subject to periodic adjustments as the underlying equity instruments vest and is recognized as an expense over the period over which services are received.

Net loss attributable to non-controlling interests

Net loss attributable to non-controlling interests is the result of the Company's consolidation of subsidiaries of which it does not own 100%. The Company's net loss attributable to non-controlling interests relates to the University's ownership in Heat I, and its ownership interest in Heat II before the divestiture of Heat II on June 25, 2012.

Revenue Recognition

The Company recognizes government grants when there is reasonable assurance that they will comply with the conditions attached to the grants and the grants will be received. The grants are recognized using an income approach and grant revenue is recognized as the related expenses are incurred.

Research and Development

Research and development costs are expensed as incurred. The Company has acquired exclusive licensing rights to intellectual property to further its research and development. These costs are expensed as incurred. The Company also incurs legal costs relating to the filing and application fees for patents which are owned by the universities with which the Company has license agreements. These costs are also expensed as research and development expense as incurred.

3. Discontinued Operations

In April of 2012, the Company's board approved a plan to sell its 92.5% interest in Heat II to a related party entity. On June 25, 2012, the Company sold all of its interest in Heat II to the related party in exchange for $9,250 in cash and a receivable from the related party of $296,244. The receivable is due in full approximately seven years from the date of the transaction with interest accruing at a rate of 6% per annum. The Company performed a fair value analysis of the receivable from the related party and determined that due to the uncertainty surrounding the collectibility of the receivable, the fair value was $0. The Company's estimate of the fair value of the receivable is based upon several factors including the long-term maturity of the receivable, an analysis of the related party's ability and willingness to pay the receivable given the current financial position, and that fact that Heat II is likely years away from generating product revenues.

The $9,250 in cash was recorded as a reduction to the loss from discontinued operations in the consolidated statement of operations for the year ended December 31, 2012. The operations of Heat II through June 25, 2012, and inception to date, are presented in the accompanying consolidated statements of operations as a loss from discontinued operations.

4. Investments

Investments - Investments in certain securities may be classified into three categories:

- *Held-to-maturity* - Debt securities that the Company has the positive intent and ability to hold to maturity are reported at amortized cost.
- *Trading securities* - Debt and equity securities that are bought and held principally for the purpose of selling in the near term are reported at fair value with unrealized gains and losses included in earnings.
- *Available-for-sale* - Debt and equity securities not classified as either securities held-to-maturity or trading securities are reported at fair value with unrealized gains or losses excluded from earnings and reported as a separate component of stockholders' equity.

The Company reassesses the appropriateness of the classification of its investments at the end of each reporting period. The Company has determined that its debt securities should be classified as held-to-maturity as of December 31, 2013. The Company held no investments at December 31, 2012. This classification was based upon management's determination that it has the positive intent and ability to hold the securities until their maturity dates, as the underlying cash invested in these securities is not required for current operations. Investments consist of short-term FDIC insured certificates of deposit, commercial paper rated A1/P1 or above and corporate notes and bonds rated A and above carried at amortized cost using the effective interest method.

The following table summarizes information about short term investments at December 31, 2013:

	Amortized Cost	Gross Unrealized Losses	Estimated Fair Value
Certificates of deposit, commercial paper	$17,297,165	$ 16,493	$17,280,672

As of December 31, 2013, the estimated fair value of the investments was less than the amortized cost. Because management intends to hold the investments until their maturity dates, these unrealized losses were not recorded in the consolidated financial statements.

The maturities of held-to-maturity investments at December 31, 2013 were as follows:

	Less than 1 Year	Total
Certificates of deposit, commercial paper	$17,297,165	$17,297,165

5. Property and Equipment

Property and equipment are recorded at cost and depreciated using the straight-line method, over estimated useful lives, ranging generally from five to seven years. Expenditures for maintenance and repairs are charged to expense as incurred.

Property and equipment consisted of the following:

	December 31, 2013	December 31, 2012
Furniture and fixtures	$ 10,780	$ 10,780
Computers	13,175	3,213
Lab equipment	39,357	—
Total	63,312	13,993
Accumulated depreciation	(9,559)	(3,211)
Property and equipment, net	$ 53,753	$ 10,782

Depreciation expense totaled $6,348 and $2,587 for the years ended December 31, 2013 and 2012, respectively.

6. Accrued Expenses

Accrued expenses consist of the following:

	December 31, 2013	December 31, 2012
Compensation and related benefits	$ 356,588	$ 105,927
Accrued patent fees	40,000	20,000
Miscellaneous expenses	106,462	3,281
	$ 503,050	$ 129,208

7. Debt Issuance Costs

In December 2011, the Company recorded $55,890 of debt issuance costs related to the issuance of warrants to purchase Series A Preferred Stock to a lender. The warrants were issued in conjunction with a promissory note issued to the lender. In December 2011, the Company began amortizing the debt issuance costs over the three year term of the promissory note resulting in $883 of interest expense for the year ended December 31, 2011. The note payable associated with the preferred stock warrants was paid in full and terminated during 2012. The remaining balance of $55,007 was amortized and written off during 2012.

In August 2012, the Company recorded $31,680 of debt issuance costs related to the issuance of warrants to purchase Series A Preferred Stock to a lender. The warrants were issued in conjunction with a promissory note issued to the lender. At this time, the Company began amortizing the debt issuance costs over the four year term of the promissory note resulting in $3,451 of interest expense for the year ended December 31, 2012.

Total amortization expense for the debt issuance costs was $28,229 and $58,548 during fiscal year 2013 and 2012, respectively.

8. Convertible Notes Payable

On October 20, 2011, the Company entered into a convertible note agreement with a vendor for an amount up to $950,000. The note accrues 12% simple interest per annum beginning on the day of the first advance. The note is convertible into common or Series A preferred stock at the latest valuation. The type of security converted will depend on whether common or Series A preferred stock is issued as part of a successful future equity raise of at least $7.5 million at the qualified offering price. Unless earlier converted into equity, the note will be payable upon demand after the eighth anniversary of the execution date of the vendor agreement which occurs in October 2019. The agreement allows the vendor to treat unpaid invoices as advances of principal under the promissory note. As of December 31, 2012, the outstanding balance on the note was $197,099. The note payable was terminated and paid off in July 2013.

Accrued interest on outstanding debt obligations was $0 and $13,763 at December 31, 2013 and 2012, respectively.

9. Notes Payable

On December 14, 2011, the Company entered into a loan agreement with the North Carolina Biotechnology Center (the “Center”) for an amount up to $250,000 to be used by the Company to develop certain of its proprietary technology and processes as defined by the loan agreement during a one year period ended December 14, 2012. The principal of the loan, plus accrued interest, was due in full on December 14, 2014, with annual installments of 5% of the outstanding balance due on December 14, 2012 and 2013. The loan agreement accrues interest at 4.25% per annum beginning on the day of the first advance. As of December 31, 2011, the outstanding balance was $0 and no draw downs occurred during fiscal year 2011. During the year ended December 31, 2012, the Company drew down $225,000 of the loan and then repaid the principal balance, including accrued interest, in full in August 2012. The loan agreement was canceled upon the repayment.

In conjunction with this loan agreement, the Company issued warrants to purchase 29,762 shares of Series A Preferred Stock with an exercise price of $4.83 per share and an expiration date of December 13, 2021. Per the terms of the warrant agreement, the exercise price of $4.83 per share is subject to adjustment if at any time subsequent to the date of the warrant agreement, Preferred Series A shares are issued at a price less than $4.83 per share. The warrants converted from preferred stock warrants into warrants to purchase common stock upon the completion of the initial public offering in July 2013 and the number of shares were adjusted for the 1-for-2.3 reverse stock split. However, since the warrants still have an anti-dilution provision, they remain liabilities and are subject to re-measurement at each balance sheet date. The total number of warrants post the 1-for-2.3 reverse stock split is 12,940.

On August 7, 2012, the Company entered into a loan and security agreement ("the Loan and Security Agreement") with a bank. The terms of the agreement provide for a $1,000,000 term loan ("Tranche A") to be available to the Company as of the date of the Loan and Security Agreement. The Tranche A term loan may be increased to $2,775,000 upon the Company receiving grant funding totaling at least $16,000,000. The Tranche A term loan accrues interest monthly at an interest rate of 3% plus Prime or 6% per annum, whichever is greater. The Tranche A term loan principal balance, along with any accrued interest, is to be paid in thirty-six equal monthly installments beginning September 7, 2013 and ending August 7, 2016. As of December 31, 2012, the Company's outstanding principal balance on the Tranche A term loan was $500,000.

Additionally, the Loan and Security Agreement provides for a term loan in an aggregate principal amount not to exceed $225,000 ("Term Loan B"). Payments of 5% of the outstanding principal balance, plus accrued interest are each due on August 2013 and 2014, with the remaining principal balance, plus all accrued interest, due December 14, 2014. The term loan accrues interest monthly at 4.25% per annum. Proceeds from the $225,000 Term Loan B were used to pay in full the principal balance of the loan with the Center as noted above. On August 27, 2013, the Company repaid the entire outstanding balance on the Tranche A term loan and the Term Loan B with the bank, in the amount of $725,000 and the loan agreement was terminated.

On January 10, 2013, the Company signed a Second Amendment to its Loan and Security Agreement which granted an extension of credit in the form of a Non-Formula Revolving Line ("the Non-Formula Line") for an amount up to $200,000. This increase in credit was through a limited guaranty by an investor who secured the additional obligation by maintaining as collateral a money market account of a minimum of $200,000 with the bank. This guarantee was only for the amounts arising from the Line. It was the intention of both the investor and the Company that the Line was to be repaid within a reasonable time period after the successful raise of capital but no later than January 9, 2014, the maturity date of the Line. The payoff of the Line would release the investor of its obligation to the bank. The Company borrowed $200,000 on the Line in January 2013, and the entire balance was paid in April 2013.

In conjunction with the Loan and Security Agreement, the Company issued warrants to the bank to purchase 17,500 shares of Heat's Series A Preferred Stock. The warrants were issued on August 7, 2012 with an initial exercise price of $4.83 per share and expire on August 7, 2022. The warrants converted from preferred stock warrants into warrants to purchase common stock upon the completion of the initial public offering in July 2013 and the number of shares were adjusted for the 1-for-2.3 reverse stock split. However, since the warrants still have an anti-dilution provision, they remain liabilities and are subject to re-measurement at each balance sheet date. The total number of warrants post the 1-for-2.3 reverse stock split is 7,609.

10. License Agreements

On July 11, 2008, Heat entered into two agreements with The University of Miami (the "University") to license, from the University, certain technology and processes in various stages of patent pursuit on an exclusive basis for use in its research and development and commercial activities ("License Agreement 03-31, 05-39" and "License Agreement 97-14", or collectively "License Agreements"). Heat has the right to grant sublicenses under the License Agreements.

Heat is also responsible for all patent costs, past and future, associated with the preparation, filing, prosecution, issuance, and maintenance of United States patent applications. Heat is also required to make minimum royalty payments to the University under the terms of the License Agreements.

In connection with the License Agreements, Heat agreed to issue to the University 10% of all issued and outstanding common stock in each class and series on a fully-diluted basis together with rights to participate in future stock offerings.

In April 2009, Heat and the University agreed to amend the original License Agreements of July 11, 2008 to extend the terms of payments. For the additional consideration of $12,500 and additional stock of 2.5% of fully-dilutable shares issued and outstanding for each License Agreement, a revised extension date of August 11, 2009 was granted for all past due license fees and patent costs. Furthermore, the 10% original stock holdings were given assurance of anti-dilution protection until a "Qualified Investment" pursuant to this agreement. This anti-dilution protection has been distinguished with the subsequent agreement described below.

On June 26, 2009, Heat assigned all rights and obligations of License Agreement 03-31, 05-39 and License Agreement 97-14 to its subsidiaries, Heat II and Heat I, respectively. All previous stock ownership and rights of the University to participate in future stock offerings by Heat were mutually terminated. Heat I and Heat II agreed to issue the University 5% of each subsidiary's issued and outstanding common stock in each class and series on a fully-diluted basis, together with fully-dilutable common shares equal to 2.5% of the total number of shares in each class and series issued outstanding. As a result, the University owns 7.5% of Heat I and Heat II's issued and outstanding common stock. For each agreement, the Company agreed to make minimum royalty payments of $10,000 for three years beginning 2010 due on the anniversary date of the agreements. Beginning in 2013, and thereafter for the life of the agreements, the minimum royalty payments shall be $20,000 due on the same date. A milestone payment is due to the University from the Company no later than March 2022 of $400,000 for License Agreement 03-31, 05-39. Another milestone payment is due no later than May 2017 of $250,000 for License Agreement 97-14.

In August 2009, Heat II and the University entered into a second amendment ("Amendment 2") to License Agreement 03-31, 05-39 to extend the foregoing payment due dates for all past due license fees and patent costs.

In August 2009, Heat I and the University entered into a second amendment ("Amendment 2") to License Agreement 97-14 to extend the foregoing payment due dates for all past due license fees and patent costs.

In February 2010, Heat II and the University entered into a third amendment ("Amendment 4") to License Agreement 03-31, 05-39 to grant back to the University a certain non-exclusive license. In all other respects, the original agreement remained the same.

On August 30, 2010, Heat entered into an option agreement with the University of Michigan ("University II") to acquire the right to negotiate an exclusive license for certain materials which includes cancer bladder cells and all unmodified derivatives of these cells. An option fee of $2,000 was paid on September 8, 2010 to grant a period of nine months for this consideration. In July 2011, the Company exercised the option to acquire the license for $10,000.

In October 2010, Heat II and the University entered into a fourth amendment ("Amendment 5") to License Agreement 03-31, 05-39 to grant to the licensor a non-exclusive license right for certain technology as research reagents and research tools.

On December 12, 2010, Heat II entered into another license agreement ("I-176") with the University for one component of complimentary technology to the July 11, 2008 agreement. Heat II agreed to pay the University a license fee of $50,000 and a reimbursement of $15,797 for past patent fees. Heat II also agreed to make a minimum royalty payment of $10,000 during 2012.

On February 18, 2011, Heat I entered into a license agreement ("SS114A") with the University to obtain additional technology related to License Agreement 97-14. Heat I agreed to reimburse the University for all past patent costs of $37,381. As partial consideration for the license, Heat II agreed to grant back certain exclusive rights to the University.

On February 18, 2011, Heat I entered into a license agreement ("143") with the University to obtain additional technology related to License Agreement 97-14. In consideration for the license, Heat I agreed to pay the University a fee of $50,000 and reimburse them for past patent costs of $14,158.

On February 18, 2011, Heat I entered into a license agreement ("J110") with the University to obtain additional technology related to License Agreement 97-14. In consideration for the license, Heat I agreed to pay the University a fee of $10,000 and reimburse them for past patent costs of $1,055.

On February 18, 2011, Heat I entered into a license agreement ("D-107") with the University to obtain additional technology related to License Agreement 97-14.

On April 12, 2011, Heat entered into a non-exclusive evaluation and biological material license agreement with a not-for-profit corporation for evaluation and production of vaccines. In consideration for the evaluation and commercial use license, Heat agreed to pay the not-for-profit corporation a fee of $5,000 and $50,000, respectively. Heat has the option to renew the license once the original term has expired. Milestone payments are due upon certain events agreed upon by Heat and the not-for-profit corporation.

At December 31, 2011, Heat owed the University $160,000 in unpaid license fees. At December 19, 2012, Heat I owed the University $102,784 in unpaid license fees. Heat entered into a payment agreement on December 19, 2012 to extend the payment due of Heat I obligations until the earlier of the closing of a Series B financing round or June 1, 2013. As consideration for the extension of payment Heat I made an additional payment to the University equal to 18% annual interest of the outstanding balance on or before the due date or at the University's option convert into shares of preferred stock according to the terms stipulated in the agreement.

Future minimum royalty payments as of December 31, 2013 are as follows:

Year ended December 31,	
2014	$ 30,000
2015	30,000
2016	30,000
2017	280,000
2018	30,000
Thereafter	120,000
Total	$ 520,000

11. Stock Warrants Liability

The summary of stock warrants liability activity for the years ended December 31, 2013 and 2012 is as follows:

	Number of Warrants	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2011	12,940	$ 4.83	9.9	$ 1.91
Granted	7,609	$ 4.83	9.9	$ 1.81
Exercised	—	—	—	—
Expired/cancelled	—	—	—	—
Outstanding at December 31, 2012	20,549	$ 4.83	8.9	$ 1.64
Granted	—	—	—	—
Exercised	—	—	—	—
Expired/cancelled	—	—	—	—
Outstanding at December 31, 2013	20,549	$ 4.83	8.20	$ 5.95

The aggregate intrinsic value of the stock warrants in the table above is $46,646 and $0 at December 31, 2013 and 2012, respectively. The aggregate intrinsic value is before applicable income taxes and is calculated based on the difference between the exercise price of the warrants and the estimated fair market value of the Company's common stock as of the respective dates.

12. Stockholders' Equity (Deficit)

Authorized Capital

Heat has authorized 112,500 shares of Series 1 Preferred Stock (par value $0.0001) as of December 31, 2013 and 2012. Of the Series 1 Preferred Stock, 112,500 were issued and outstanding as of December 31, 2012. No Series 1 Preferred Stock was outstanding at December 31, 2013. Heat has authorized 2,000,000 shares of Series A Preferred Stock (par value $0.0001) as of December 31, 2013 and 2012. Of the Series A Preferred Stock, 1,863,128 shares were issued and outstanding as of December 31, 2012. No Series A Preferred Stock was outstanding at December 31, 2013. In 2013, Heat authorized 4,100,000 shares of Series B Preferred Stock (par value $0.0002). In March 2013, the Company sold an aggregate of 1,891,419 shares of the Company's Series B-1 Preferred Stock for gross proceeds of approximately $5.0 million in our Series B Preferred Stock private placement. All shares of the Series B Preferred Stock, together with accrued dividends, automatically converted into shares of the Company's common stock upon the consummation of the Company's initial public offering on July 29, 2013.

Heat had 50,000,000 shares of common stock (par value $0.0002) authorized as of December 31, 2013 and 2012. Of the 50,000,000 common stock shares, 6,375,426 and 2,144,542 were issued and 6,375,426 and 1,858,971 were outstanding as December 31, 2013 and 2012, respectively.

Preferred Stock

Series 1, Series A, Series B-1, and Series B-2

Automatic Conversion

Each share of Preferred Stock automatically converts to common stock upon the earlier to occur of (i) on the date of consummation of a sale of common stock in a firm commitment underwritten public offering resulting in aggregate net cash proceeds to the Company (after deducting applicable underwriting discounts and commissions) of at least $15 million net proceeds; (ii) with respect to the Series A Preferred Stock, if 2/3 of the Series A Preferred Stock holders (including one of the larger investors so long as they hold 40% of the Series A Preferred Stock) vote in favor of a conversion then the Series A will automatically convert to common stock; (iii) with respect to the Series 1 Preferred Stock, if 2/3 of the Series 1 Preferred Stock holders vote in favor of a conversion then the Series 1 will automatically convert to common stock; and (iv) with respect to the Series B Preferred Stock if 2/3 of the Series B Preferred Stock holders vote in favor of a conversion then the Series B will automatically convert to common stock. As a result of the IPO, all outstanding shares of preferred stock were automatically converted to common stock.

Optional Conversion

The preferred stock is convertible into common stock at the option of the holder at any time. The conversion ratio for each share of the Series 1 Preferred Stock and the Series A Preferred Stock was its Original Issue Price ($2.35 and $2.10 for each share of the Series 1 Preferred Stock and Series A Preferred Stock, respectively) divided by its Conversion Price, as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like, which Conversion Price initially was the Original Issue Price. The conversion ratio for each share of the Series B-1 Preferred Stock and the Series B-2 Preferred Stock was its Original Issue Price ($2.67 and $5.00 for each share of the Series B-1 Preferred Stock and Series B-2 Preferred Stock, respectively) plus accrued but unpaid dividends thereon divided by its conversion price, as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like, which conversion price initially was the Original Issue Price. As a result of the 1-for-2.3 reverse stock split, the conversion ratio for the Preferred Stock was 0.4348.

In the event the Company at any time or from time to time after the Initial Series B Issuance Date shall issue additional shares of common stock without consideration or for consideration per share less than the Series 1 Conversion Price, Series A Conversion Price, Series B-1 Conversion Price, or Series B-2 Conversion Price, in effect on the date of and immediately prior to such issue, then the Series 1 Conversion Price, Series A Conversion Price, the Series B-1 Conversion Price, Series B-2 Conversion Price, shall be reduced, to a price determined by multiplying the Series 1 Conversion Price, Series A Conversion Price, the Series B-1 Conversion Price, or the Series B-2 Conversion Price in effect by a fraction, (A) the numerator of which shall be the number of shares of common stock outstanding immediately prior to such issuance, on a fully-diluted basis, plus the number of shares of common stock which the aggregate consideration received by the Company for the total number of Additional Shares of Common Stock so issued would purchase at the Series 1 Conversion Price, Series A Conversion Price, the Series B-1 Conversion Price, or the Series B-2 Conversion Price, as in effect immediately prior to such issuance, and (B) the denominator of which shall be the number of shares of common stock outstanding immediately prior to such issuance, on a fully-diluted basis, plus the number of such Additional Shares of common stock so issued. As a result of the IPO, all outstanding shares of preferred stock were automatically converted to common stock.

The preferred stock was determined to have characteristics more akin to equity than debt. Particularly, the preferred stock had no mandatory redemption provision nor was it redeemable at the option of the holder. As a result, the conversion option was determined to be clearly and closely related to the preferred stock and therefore did not need to be bifurcated and classified as a liability.

Dividends

The Series B Preferred Stock has a priority with respect to dividend distributions and distributions upon liquidation. The Series B Preferred Stock receive dividends when and as and if declared by the Board at a rate of 5% of their original issue price of such shares which is $6.14 per share for the Series B-1 Preferred Stock and $11.50 per share for the Series B-2 Preferred Stock. If the Company declares or pays a dividend upon the common stock, they must also pay to the holders of the Series A, 1 and B Preferred Stock the dividends that would have been declared with respect to common stock issuable upon conversion of the Series A, 1 and B Preferred Stock; provided, however that the Company cannot declare or pay a dividend unless and until all accrued dividends on the Series B Preferred Stock have been paid.

Liquidation

In the event of a liquidation, the holders of the Series B-1 and B-2 Preferred Stock are entitled to receive before any payment to any other Preferred Stockholder or common stock holder and pari passu with the holders of the Series 1 Preferred Stock an amount per share equal to the greater of $6.14 for the Series B-1 Preferred Stock and $11.50 for the Series B-2 Preferred Stock plus any dividends accrued and unpaid whether or not declared. After payment in full of the Series B Preferred Stockholders the holders of the Series A Preferred Stock are entitled to receive before any payment to the common stock holder and pari passu with the holders of the Series 1 Preferred Stock an amount per share equal to $4.83 plus any dividends declared but unpaid. In the event of a liquidation, the holders of the Series 1 Preferred Stock are entitled to receive before any payment to the common stock holder and pari passu with any distribution to the Series A Preferred Stock an amount per share equal to $5.41 plus any dividends declared but unpaid. After the payment in full of the amounts set forth above, the Company's assets will be distributed ratably to all holders of common stock and Series B Preferred Stock on an as converted basis except that the Series B Preferred Stockholders shall not continue to share in such distribution after each has received 3 times its Original Issue Price.

Voting Rights

Each holder of Preferred Stock is entitled to vote on all matters stockholders are entitled to vote and to cast the number of votes as shall equal the whole number of shares of common stock into which their shares of Preferred Stock are convertible.

Preferred Stock Dividend

In March 2013, the Company sold an aggregate of 1,891,419 shares of the Company's Series B-1 Preferred Stock for gross proceeds of approximately $5.0 million in our Series B Preferred Stock private placement. All shares of the Series B Preferred Stock, together with accrued dividends, automatically converted into shares of the Company's common stock upon the consummation of the Company's initial public offering on July 29, 2013. In addition, the investors in the Series B-1 Preferred Stock were issued shares of the Company's common stock having a value based upon the initial public offering price of $361,668 and the Company's obligation to issue, and the investors, obligation to purchase, Series B-2 Preferred Stock and warrants upon fulfillment of certain conditions specified in the Company's stock purchase agreement dated as of March 25, 2013 entered into in connection with such private placement (the "Stock Purchase Agreement") terminated. The issuance of common stock to the Series B-1 Preferred stockholders totaling $361,668 has been accounted for as a preferred stock dividend, and as a result, has been included as an expense attributable to common stockholders in the Company's condensed consolidated statements of operations.

Initial Public Offering

On July 29, 2013, the Company sold 2,500,000 shares of common stock at a public offering price of $10.00 per share upon the closing of the Company's initial public offering ("IPO") with gross proceeds of $25 million and net proceeds of $22.4 million. On August 15, 2013, the Company sold an additional 100,000 shares of common stock at a public offering price of $10.00 per share pursuant to the partial exercise of the over-allotment option granted to the underwriters resulting in additional gross proceeds to the Company of $1,000,000 and additional net proceeds of $930,000. On September 6, 2013, the Company sold an additional 100,000 shares of common stock at a public offering price of $10.00 per share pursuant to the partial exercise of the over-allotment option granted to the underwriters resulting in additional gross proceeds to the Company of $1,000,000 and additional net proceeds of $930,000. The total gross proceeds raised from the offering and over-allotment option were $27,000,000, before underwriting discounts, commissions and other offering expenses payable by the Company. The total net proceeds from the offering were approximately $24.3 million. Upon the closing of the IPO, all shares of the Company's then-outstanding preferred stock automatically converted into an aggregate of 1,696,683 shares of common stock. In addition, upon the closing of the IPO, the Company issued an additional 36,167 shares of common stock to the Series B Preferred Stockholders as a Preferred Stock dividend. This transaction is discussed above under "Preferred Stock Dividend". At that time, the Company's obligation to issue, and the Series B Preferred Stockholders' obligation to purchase Series B-2 Preferred Stock under the Stock Purchase Agreement terminated.

Restricted Stock

A summary of the Company's unvested restricted stock activity as of December 31, 2013 is as follows:

	Shares	Weighted-Average Fair Value
Unvested at December 31, 2012	2,899	$ 2.23
Vested	(2,899)	$ 8.81
Unvested at December 31, 2013	—	$ —

As of December 31, 2013, all restricted stock has vested and accordingly all stock-based compensation expense related to vested restricted stock has been recognized.

Common Stock Warrants

There are 20,549 warrants outstanding that are convertible into common stock that have an exercise price of $4.83 per share and expire 10 years from the date of issuance. These warrants were issued to lenders and were originally exercisable into Series A Preferred stock. The warrants converted from preferred stock warrants into warrants to purchase common stock upon the completion of the initial public offering in July 2013. However, since the warrants still have an anti-dilution provision, they remain liabilities and are subject to re-measurement at each balance sheet date. Refer to Footnote 11.

On March 10, 2011, the Company issued warrants to purchase 32,610 shares of common stock to non-employee placement agents in consideration for a private equity placement transaction. The warrants have an exercise price of $0.48 per share and expire 10 years from the issuance date. These warrants do not meet the criteria required to be classified as liability awards and therefore they are treated as equity awards.

In connection with our initial public offering, the Company issued warrants to the underwriters for 125,000 shares of common stock issuable at $12.50 per share upon exercise. The warrants have a ten-year life and expire on July 29, 2023. These warrants do not meet the criteria required to be classified as liability awards and therefore they are treated as equity awards.

The following table summarizes the activity of the Company's common stock warrants, retro actively adjusted for the 1-for-2.3 reverse stock split.

	Common Stock Warrants
Outstanding, January 1, 2012	45,550
Granted	7,609
Exercised	—
Expired	—
Outstanding, December 31, 2012	53,159
Granted to underwriters	125,000
Exercised	—
Expired	—
Outstanding, December 31, 2013	178,159

Equity Compensation Plan

2009 Stock Incentive Plan

In 2009, the Company adopted the 2009 Stock Option Plan of Heat Biologics, Inc. (the "2009 Plan"), under which stock options to acquire 500,000 common shares could be granted to key employees, directors, and independent contractors. Under the 2009 Plan, both incentive and non-qualified stock options could be granted under terms and conditions established by the Board of Directors. The exercise price for incentive stock options was the fair market value of the related common stock on the date the stock option was granted. Stock options granted under the 2009 Plan generally have terms of 10 years and have various vesting schedules.

The Company amended the 2009 Stock Option Plan and all related addendum agreements in April 2011. This second amendment increased the number of shares available for issuance from 500,000 to 1,500,000. As of December 31, 2013 and 2012, there were 633,482 and 590,047 and stock options outstanding under the 2009 Plan, respectively.

The following table summarizes the components of the Company's stock-based compensation included in net loss:

	December 31,	
	2013	2012
Employee stock options	$ 131,178	$ 60,956
Non-employee stock options	415,212	128,157
Restricted stock awards	25,534	28,783
	$ 571,924	$ 217,896

Stock Options

The fair value of each stock option is estimated on the date of grant using the Black-Scholes-Merton option pricing model with the following assumptions for stock options granted during the years ended December 31, 2013 and 2012:

	December 31,	
	2013	2012
Dividend yield	0.0%	0.0%
Expected volatility	90-112%	80-90%
Risk-free interest rate	1.39-2.26%	0.72-0.97%
Expected lives (years)	5.75-6.5	5-6.25

The risk-free interest rate is based on U.S. Treasury interest rates at the time of the grant whose term is consistent with the expected life of the stock options. The Company used an average historical stock price volatility based on an analysis of reported data for a peer group of comparable companies that have issued stock options with substantially similar terms, as the Company did not have any trading history for its common stock. Expected term represents the period that the Company's stock option grants are expected to be outstanding. The Company elected to utilize the "simplified" method to value stock option grants. Under this approach, the weighted-average expected life is presumed to be the average of the vesting term and the contractual term of the option.

Expected dividend yield was considered to be 0% in the option pricing formula since the Company had not paid any dividends and had no plans to do so in the future. The forfeiture rate was considered to be none insofar as the historical experience of the Company is very limited. As required by ASC 718, the Company will adjust the estimated forfeiture rate based upon actual experience.

The Company recognized $571,924 and $217,896 in stock-based compensation expense for the years ended December 31, 2013 and 2012, respectively for the Company's stock option awards.

The following tables summarize the stock option activity for the years ended December 31, 2012 and 2013:

	Shares	Weighted Average Exercise Price
Outstanding, January 1, 2012	471,905	$ 0.64
Granted	178,742	$ 0.76
Exercised	(22,827)	$ 0.51
Expired/Cancelled	(37,773)	$ 0.02
Outstanding, December 31, 2012	590,047	$ 0.71
Granted	186,736	$ 10.07
Exercised	(80,706)	$ 0.67
Expired/Cancelled	(62,595)	$ 1.96
Outstanding, December 31, 2013	633,482	$ 3.36

The weighted average grant-date fair value of stock options granted during the years ended December 31, 2013 and 2012 was $8.51 and $1.31, respectively.

The total fair value of stock options that vested during the year ended December 31, 2013 was approximately $440,820.

The following table summarizes information about stock options outstanding at December 31, 2013:

Options Outstanding			Options Exercisable			Options Vested or Expected to Vest		
Balance as of 12/31/2013	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Balance as of 12/312013	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Balance as of 12/31/2013	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price
633,482	7.27	$3.36	426,423	6.31	$1.23	426,423	6.31	$1.23

As of December 31, 2013, the unrecognized stock-based compensation expense related to unvested stock options was approximately $1,604,200 that is expected to be recognized over a weighted average period of approximately 14 months.

A summary of the activity of the Company's unvested stock options is as follows:

	Shares	Weighted Average Exercise Price
Balance, January 1, 2012	248,439	$ 0.64
Granted	178,742	$ 0.76
Vested	(257,510)	$ 0.51
Forfeited	(11,594)	$ 0.02
Outstanding, December 31, 2012	158,077	$ 0.71
Granted	186,736	$ 10.07
Vested	(91,020)	$ 0.67
Forfeited	(46,734)	$ 1.96
Outstanding, December 31, 2013	207,059	$ 3.36

13. Income Tax

The components of income tax expense (benefit) attributable to continuing operations are as follows:

	Year ended December 31,	
	2013	2012
Current expense:		
Federal	$ —	$ —
State	—	—
Deferred expense (benefit):		
Federal	$ —	$ —
State	—	—
Total	$ —	$ —

The differences between the Company's consolidated income tax expense attributable to continuing operations and the expense computed at the 34% United States statutory income tax rate were as follows:

	Year ended December 31,	
	2013	2012
Federal income tax expense at statutory rate	$ (2,247,353)	$ (840,190)
State and local income taxes, net of federal benefit	(186,475)	(105,170)
Non-deductible expenses	4,985	54,991
Prior-period true-up	162,061	(152,306)
Research & development credit	(180,687)	(57,293)
Change in tax rate	32,774	—
Increase in valuation allowance	2,414,695	1,099,968
	$ —	$ —

The income tax effects of temporary differences from continuing operations that give rise to significant portions of deferred income tax assets (liabilities) are presented below:

	December 31,	
	2013	2012
Deferred tax assets:		
Net operating loss carryforward	$ 4,167,785	$ 2,186,432
Research & development credit	424,739	189,350
Other	247,966	50,013
Valuation allowance	(4,840,490)	(2,425,795)
Deferred income taxes	$ —	$ —

During 2013, the Company's valuation allowance increased by $2,414,695. This increase was primarily due to the generation of additional net operating loss carryforwards and income tax credits.

The Company has approximately $20,999,761 of federal and state operating loss carryforwards which begin to expire in 2023.

In accordance with FASB ASC 740, *Accounting for Income Taxes*, the Company reflects in the financial statements the benefit of positions taken in a previously filed tax return or expected to be taken in a future tax return only when it is considered 'more-likely-than-not' that the position taken will be sustained by a taxing authority. As of December 31, 2013, the Company had no unrecognized income tax benefits and correspondingly there is no impact on the Company's effective income tax rate associated with these items. The Company's policy for recording interest and penalties relating to uncertain income tax positions is to record them as a component of income tax expense in the accompanying statements of income. As of December 31, 2013 and 2012, the Company had no such accruals.

The Company files income tax returns in the United States and various state jurisdictions. The Company is subject to examination by taxing authorities for the tax years ended December 31, 2008 through 2012.

14. Commitments and Contingencies

In November 2011, the Company entered into a thirteen-month lease agreement for office space commencing on January 1, 2012. The monthly base rent is $3,870, which commenced February 1, 2012. On December 19, 2012, we entered into a lease modification agreement that extended the lease term and increased the monthly rent to $4,046. The Company will remain in the office space on a month to month basis until new office space is available.

In connection with the convertible note agreement entered into on October 20, 2011 with a vendor for an amount up to $950,000, the Company is required to use the vendor exclusively for the manufacture and supply of the material for the Company's Phase III clinical trials and commercialization efforts. This note is no longer outstanding as of December 31, 2013.

15. Related Party

The Chairman of the Company's Scientific Advisory Board was paid $0, $18,750 and $140,625 in consulting fees for the years ended December 31, 2013 and 2012 and the period from inception through December 31, 2013, respectively.

A member of the Company's Scientific Advisory Board was paid $0 for the years ended December 31, 2013 and 2012, respectively. The consulting fees paid since inception was $50,000.

A member of the Company's management was paid $34,480, $30,910, and $70,910 in consulting fees for the years ended December 31, 2013 and 2012 and the period from inception through December 31, 2013, respectively.

The Company paid three members of the Clinical Advisory Board for consulting during 2013. These members received $45,000, $16,590 and $14,700 for their services during the year ended December 31, 2013. These members were not paid prior to 2013.

The Company compensates its board members. Board members received between $5,000 and $10,870 for services rendered during 2013. Board members were not compensated prior to the Company's initial public offering in 2013.

The Company had a related party payable balance of $13,000 and $0 as of December 31, 2013 and 2012, respectively.

In June 2012, the Company sold its 92.5% ownership interest in Heat II to a related party in exchange for $9,250 in cash and a receivable of $296,224 to be paid in full in seven years from the date of the purchase. Interest accrues on the receivable at a rate of 6% per annum. At December 31, 2012, the Company also has a related party receivable from this entity for $9,571 related to invoices received by the Company pertaining to expenses of Heat II incurred subsequent to the sale of Heat II.

16. Net Loss Per Share

Basic net loss per common share is computed by dividing net loss applicable to common stockholders by the weighted-average number of common shares outstanding during the periods. Fully diluted net loss per common share is computed using the weighted average number of common and dilutive common equivalent shares outstanding during the periods. Common equivalent shares consist of stock options that are computed using the treasury stock method.

For the years ended December 31, 2013 and 2012, all of the Company's common stock options and warrants, preferred stock, and preferred stock warrants are anti-dilutive and therefore have been excluded from the diluted calculation.

The following table reconciles net loss to net loss applicable to common shareholders:

	For the year ended December 31,	
	2013	2012
Net loss	$ (6,609,864)	$ (2,471,147)
Net loss: Non-controlling interest	(198,516)	(50,947)
Beneficial conversion charge	(2,300,000)	—
Preferred Stock Dividend	(361,668)	—
Net loss applicable to common stockholders	$ (9,073,016)	$ (2,420,200)
Weighted-average number of common shares used in net loss per share applicable to common stockholders —basic and diluted	3,747,357	1,831,769
Net loss per share applicable to common stockholders—basic and diluted	$ (2.42)	$ (1.32)

The following potentially dilutive securities were excluded from the calculation of diluted net loss per share due to their anti-dilutive effect):

	For the year ended December 31,	
	2013	2012
Preferred stock (on an as converted basis)	—	860,017
Preferred stock warrants	—	20,549
Outstanding stock options	633,482	590,047
Unvested restricted stock	—	2,899
Common stock warrants	53,159	32,610

Reverse Stock Split

In May 2013, the Company's board of directors and stockholders approved a 1-for-2.3 reverse stock split of the Company's common stock. The reverse stock split became effective on May 29, 2013. All share and per share amounts in the financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the increase in par value to additional paid-in capital.

17. Subsequent Events

In the first quarter of 2014, the Company entered into a lease agreement to lease a new office facility. The new lease commences on or around May 1, 2014 and includes escalating rent payments and a sixty-month term. Rent expense will be recorded on a straight-line basis over the lease term.

Future minimum lease payments are as follows:

2014	$ 82,353
2015	183,137
2016	188,631
2017	194,290
2018	200,119
Total	$ 848,530

Total rent expense for the years ended December 31, 2013 and 2012 was $48,377 and $43,341, respectively.

In March 2014, the subsidiary, Heat Biologics I, Inc. entered into an additional exclusive license agreement with the University of Miami. No annual payments are required under this license agreement. The Company is obligated to make milestone payments under this license agreement as follows: $50,000 upon completion of a phase I clinical trial, $100,000 upon completion of a phase II trial, $100,000 upon completion of a phase III trial, and $100,000 upon acceptance of a BLA by the FDA or its foreign equivalent.

EXHIBIT 10.39

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "**Lease**") is made this 24th day of January, 2014, between **ARE-100/800/801 CAPITOLA, LLC**, a Delaware limited liability company ("**Landlord**"), and **HEAT BIOLOGICS, INC.**, a Delaware corporation ("**Tenant**").

Building: 801 Capitola Drive, Durham, North Carolina

Premises: That portion of the Building located in Bay 12 containing approximately 5,303 rentable square feet, as shown on **Exhibit A**.

Project: The real property on which the Building is located, together with all improvements thereon and appurtenances thereto as described on **Exhibit B**.

Base Rent: $22.40 per rentable square foot per annum, subject to adjustment as provided for in Section 4 below.

Security Deposit: $9,898.93

Rentable Area of Premises: 5,303 sq. ft.

Rentable Area of Building: 60,519 sq. ft.

Rentable Area of Project: 185,030 sq. ft. **Building's Share of Project:** 32.70%

Tenant's Share of Operating Expenses of Building: 8.76%

Target Commencement Date: March 15, 2014

Rent Adjustment Percentage: 3%

Base Term: Beginning on the Commencement Date and ending 60 months from the first day of the first full month following the Rent Commencement Date (as defined in Section 2).

Permitted Use: Research and development laboratory, related office and other related uses consistent with the character of the Project and otherwise in compliance with the provisions of Section 7 hereof.

Address for Rent Payment:
P.O. Box 975383
Dallas, TX 75397-5383

Landlord's Notice Address:
385 E. Colorado Boulevard, Suite 299
Pasadena, CA 91101
Attention: Corporate Secretary

Tenant's Notice Address:
801 Capitola Drive
Bay 12
Durham, North Carolina 27713
Attention: Lease Administrator

The following Exhibits and Addenda are attached hereto and incorporated herein by this reference:

[X] EXHIBIT A - PREMISES DESCRIPTION
[X] EXHIBIT B - DESCRIPTION OF PROJECT
[X] EXHIBIT C - WORK LETTER
[X] EXHIBIT D - COMMENCEMENT DATE
[X] EXHIBIT E - RULES AND REGULATIONS
[X] EXHIBIT F - TENANT'S PERSONAL PROPERTY

[X] EXHIBIT G - EXPANSION SPACE

1. **Lease of Premises**. Upon and subject to all of the terms and conditions hereof, Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord. The portions of the Project which are for the non-exclusive use of tenants of the Project are collectively referred to herein as the "**Common Areas**." Landlord reserves the right to modify Common Areas, provided that such modifications do not, other than on a temporary basis, (i) materially adversely affect Tenant's use of the Premises for the Permitted Use or materially adversely affect Tenant's access to the Premises, or (ii) subject to the terms of Section 10 hereof, reduce the number of parking spaces which Tenant is entitled to use pursuant to Section 10.

2. **Delivery; Acceptance of Premises; Commencement Date**. Landlord shall use reasonable efforts to deliver the Premises to Tenant on or before the Target Commencement Date, with Landlord's Work Substantially Completed and in broom clean condition ("**Delivery**" or "**Deliver**"). If Landlord fails to timely Deliver the Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and this Lease shall not be void or voidable except as provided herein. Notwithstanding the foregoing, if Landlord has not Delivered the Premises to Tenant on or before the date that is 60 days after the Target Commencement Date (as may be extended by Force Majeure delays and Tenant Delays), then Tenant shall receive a day-for-day abatement of the monthly Base Rent first coming due under this Lease for every 1 full day that Landlord has not delivered possession of the Premises to Tenant beyond such 60-day period. If Landlord does not Deliver the Premises within 90 days of the Target Commencement Date for any reason other than Force Majeure delays and Tenant Delays, this Lease may be terminated by Tenant by written notice to Landlord, and if so terminated by Tenant: (a) the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant, and (b) neither Landlord nor Tenant shall have any further rights, duties or obligations under this Lease, except with respect to provisions which expressly survive termination of this Lease. As used herein, the terms "**Landlord's Work**," "**Tenant Delays**" and "**Substantially Completed**" shall have the meanings set forth for such terms in the Work Letter. If Tenant does not elect to void this Lease within 5 business days of the lapse of such 90 day period, such right to void this Lease shall be waived and this Lease shall remain in full force and effect.

The "**Commencement Date**" shall be the earlier of: (i) the date Landlord Delivers the Premises to Tenant; and (ii) the date Landlord could have Delivered the Premises but for Tenant Delays. The "**Rent Commencement Date**" shall be the date that is 5 months after the Commencement Date. Upon request of Landlord, Tenant shall execute and deliver a written acknowledgment of the Commencement Date, the Rent Commencement Date and the expiration date of the Term when such are established in the form of the "Acknowledgement of Commencement Date" attached to this Lease as **Exhibit D**; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder. The "**Term**" of this Lease shall be the Base Term, as defined above on the first page of this Lease and any Extension Term which Tenant may elect pursuant to Section 40 hereof.

Subject to the provisions of Section 6 of the Work Letter, Landlord shall permit Tenant access to the Premises for a period of 30 days prior to the Commencement Date for Tenant's installation and setup of furniture, fixtures and equipment ("**FF&E Installation**"), provided that such FF&E Installation is coordinated with Landlord, and Tenant complies with the Lease and all other reasonable restrictions and conditions Landlord may impose. All such access shall be during normal business hours. Any access to the Premises by Tenant before the Commencement Date shall be subject to all of the terms and conditions of this Lease, excluding the obligation to pay Base Rent or Operating Expenses.

For the period of 30 consecutive days after the Commencement Date, Landlord shall, at its sole cost and expense (which shall not constitute an Operating Expense), be responsible for any repairs that are required to be made to the Building or Building Systems (as defined in Section 13), unless Tenant or any Tenant Party was responsible for the cause of such repair, in which case Tenant shall pay the cost.

Except as set forth in the Work Letter: (i) Tenant shall accept the Premises in their condition as of the Commencement Date, subject to all applicable Legal Requirements (as defined in Section 7 hereof); (ii) Landlord shall have no obligation for any defects in the Premises; and (iii) Tenant's taking possession of the Premises shall be conclusive evidence that Tenant accepts the Premises and that the Premises were in good condition at the time possession was taken.

Tenant agrees and acknowledges that, except as otherwise expressly provided in this Lease, neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Premises or the Project, and/or the suitability of the Premises or the Project for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises or the Project are suitable for the Permitted Use. This Lease constitutes the complete agreement of Landlord and Tenant with respect to the subject matter hereof and supersedes any and all prior representations, inducements, promises, agreements, understandings and negotiations which are not contained herein. Landlord in executing this Lease does so in reliance upon Tenant's representations, warranties, acknowledgments and agreements contained herein.

3. **Rent**.

(a) **Base Rent**. Base Rent for the month in which the Rent Commencement Date occurs and the Security Deposit shall be due and payable on delivery of an executed copy of this Lease to Landlord. Tenant shall pay to Landlord in advance, without demand, abatement, deduction or set-off, equal monthly installments of Base Rent on or before the first day of each calendar month during the Term hereof after the Rent Commencement Date, in lawful money of the United States of America, at the office of Landlord for payment of Rent set forth above, or to such other person or at such other place as Landlord may from time to time designate in writing. Payments of Base Rent for any fractional calendar month shall be prorated. The obligation of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any Rent (as defined in Section 5) due hereunder except for any abatement as may be expressly provided in this Lease.

(b) **Additional Rent**. In addition to Base Rent, Tenant agrees to pay to Landlord as additional rent ("**Additional Rent**"): (i) commencing on the Commencement Date, Tenant's Share of "Operating Expenses" (as defined in Section 5), and (ii) any and all other amounts Tenant assumes or agrees to pay under the provisions of this Lease, including, without limitation, any and all other sums that may become due by reason of any default of Tenant or failure to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after any applicable notice and cure period.

4. **Base Rent Adjustments**. Base Rent shall be increased on each annual anniversary of the first day of the first full month during the Term of this Lease (each an "**Adjustment Date**") by multiplying the Base Rent payable immediately before such Adjustment Date by the Rent Adjustment Percentage and adding the resulting amount to the Base Rent payable immediately before such Adjustment Date. Base Rent, as so adjusted, shall thereafter be due as provided herein. Base Rent adjustments for any fractional calendar month shall be prorated.

5. **Operating Expense Payments**. Landlord shall deliver to Tenant a written estimate of Operating Expenses for each calendar year during the Term (the "**Annual Estimate**"), which may be revised by Landlord from time to time during such calendar year. Commencing on the Commencement Date and thereafter on or before the first day of each calendar month during the Term, Tenant shall pay Landlord an amount equal to 1/12th of Tenant's Share of the Annual Estimate. Payments for any fractional calendar month shall be prorated.

The term "**Operating Expenses**" means all costs and expenses of any kind or description whatsoever incurred or accrued each calendar year by Landlord with respect to the Building (including the Building's Share of all costs and expenses of any kind or description incurred or accrued by Landlord with respect to the Project which are not specific to the Building or any other building located in the Project)

(including, without duplication, (i) Taxes (as defined in Section 9), (ii) capital repairs and improvements amortized over the lesser of 10 years and the useful life of such capital items, and (iii) the costs of Landlord's third party property manager or, if there is no third party property manager, administration rent in the amount of 4.0% of Base Rent (or, prior to the Rent Commencement Date, 4.0% of the Base Rent that would have been payable during such period if Tenant has been required to pay Base Rent, which amount shall be equal to the Base Rent payable for the 6th month of the Base Term)), excluding only:

(a) the original construction costs of the Project and renovation prior to the date of the Lease and costs of correcting defects in such original construction or renovation;

(b) capital expenditures for expansion of the Project;

(c) interest, principal payments of Mortgage (as defined in Section 27) debts of Landlord, financing costs and amortization of funds borrowed by Landlord, whether secured or unsecured, and any penalties or late fees incurred due to Landlord's failure to pay any of the foregoing when due;

(d) depreciation of the Project (except for capital improvements, the cost of which are includable in Operating Expenses);

(e) advertising, legal and space planning expenses and leasing commissions and other costs and expenses incurred in procuring and leasing space to tenants for the Project, including any leasing office maintained in the Project (or any other offices of Landlord in the Project), free rent and construction allowances for tenants;

(f) legal and other expenses incurred in the negotiation or enforcement of leases;

(g) completing, fixturing, improving, renovating, painting, redecorating or other work, which Landlord pays for or performs for other tenants within their premises, and costs of correcting defects in such work;

(h) costs to be reimbursed by other tenants of the Project or Taxes to be paid directly by Tenant or other tenants of the Project, whether or not actually paid;

(i) salaries, wages, benefits and other compensation paid to officers and employees of Landlord who are not assigned in whole or in part to the operation, management, maintenance or repair of the Project;

(j) general organizational, administrative and overhead costs relating to maintaining Landlord's existence, either as a corporation, partnership, or other entity, including general corporate, legal and accounting expenses;

(k) costs (including attorneys' fees and costs of settlement, judgments and payments in lieu thereof) incurred in connection with disputes with tenants, other occupants, or prospective tenants, and costs and expenses, including legal fees, incurred in connection with negotiations or disputes with employees, consultants, management agents, leasing agents, purchasers or mortgagees of the Building;

(l) costs incurred by Landlord due to the violation by Landlord, its employees, agents or contractors or any tenant of the terms and conditions of any lease of space in the Project or any Legal Requirement (as defined in Section 7);

(m) penalties, fines or interest incurred as a result of Landlord's inability or failure to make payment of Taxes and/or to file any tax or informational returns when due, or from Landlord«'s failure to make any payment of Taxes required to be made by Landlord hereunder before delinquency;

(n) overhead and profit increment paid to Landlord or to subsidiaries or affiliates of Landlord for goods and/or services in or to the Project to the extent the same exceeds the costs of such goods and/or services rendered by unaffiliated third parties on a competitive basis;

(o) costs of Landlord's charitable or political contributions, or of fine art maintained at the Project;

(p) costs in connection with services (including electricity), items or other benefits of a type which are not standard for the Project and which are not available to Tenant without specific charges therefor, but which are provided to another tenant or occupant of the Project, whether or not such other tenant or occupant is specifically charged therefor by Landlord;

(q) costs incurred in the sale or refinancing of the Project;

(r) costs which are covered by and reimbursed under any contractor, manufacturer or supplier warranty;

(s) reserves for maintenance, repairs, replacements or any other purpose;

(t) net income taxes of Landlord or the owner of any interest in the Project, franchise, capital stock, gift, estate or inheritance taxes or any federal, state or local documentary taxes imposed against the Project or any portion thereof or interest therein;

(u) the cost of capital replacements incurred by Landlord during the first 24 months after the Commencement Date with respect to the HVAC system or the Emergency Generator (as defined in Section 11) serving the Premises; provided, however, that, following the expiration of such 24 month period Tenant shall be required to pay its pro rata share of the cost (which shall be amortized in accordance with the second paragraph of this Section 5) of any such capital replacements payable over the remaining balance of the Term; and

(v) any expenses otherwise includable within Operating Expenses to the extent actually reimbursed by persons other than tenants of the Project under leases for space in the Project.

Notwithstanding anything to the contrary contained herein, Tenant's pro rata share of routine maintenance and repairs with respect to the HVAC system serving the Premises shall not exceed $10,000 in the aggregate for the first 12 months of the Base Term following the Commencement Date.

Following the first year of the Base Term of the Lease, that part of Operating Expenses which is comprised of Controllable Operating Expenses (as defined below) shall be increased by no more than 5% per year. Such limitation of 5% per year on increases shall be cumulative year to year, so that if in any year the increase in cumulative Operating Expenses is more or less than 5%, then the difference between 5% and the actual percentage increase in that year may be carried forward to any future year, and may be applied in such future year to increase the actual percentage increase (even if more than 5% for such year) subject to the limitation that Controllable Operating Expenses shall not have increased by more than 5% compounded annually since the beginning of the Term. "**Controllable Operating Expenses**" shall mean those Project Operating Expenses for which increases are reasonably within the control of Landlord, and shall specifically not include, without limitation, Taxes, assessments, refuse and or trash removal, insurance, collectively bargained union wages, electricity and other utilities. There shall be no limitation on the amount of increase from year to year on Project Operating Expenses which are not Controllable Operating Expenses.

Within 90 days after the end of each calendar year (or such longer period as may be reasonably required), Landlord shall furnish to Tenant a statement (an "**Annual Statement**") showing in reasonable detail: (a) the total and Tenant's Share of actual Operating Expenses for the previous calendar year, and (b) the total of Tenant's payments in respect of Operating Expenses for such year. If Tenant's Share of

actual Operating Expenses for such year exceeds Tenant's payments of Operating Expenses for such year, the excess shall be due and payable by Tenant as Rent within 30 days after delivery of such Annual Statement to Tenant. If Tenant's payments of Operating Expenses for such year exceed Tenant's Share of actual Operating Expenses for such year Landlord shall pay the excess to Tenant within 30 days after delivery of such Annual Statement, except that after the expiration, or earlier termination of the Term or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord.

The Annual Statement shall be final and binding upon Tenant unless Tenant, within 90 days after Tenant's receipt thereof, shall contest any item therein by giving written notice to Landlord, specifying each item contested and the reason therefor. If, during such 90 day period, Tenant reasonably and in good faith questions or contests the accuracy of Landlord's statement of Tenant's Share of Operating Expenses, Landlord will provide Tenant with access to Landlord's books and records relating to the operation of the Project (which shall be made available for Tenant's review in Research Triangle Park, North Carolina, or, if not available in Research Triangle Park, another location reasonably acceptable to Landlord and Tenant), and such information as Landlord reasonably determines to be responsive to Tenant's questions (the "**Expense Information**"). If after Tenant's review of such Expense Information, Landlord and Tenant cannot agree upon the amount of Tenant's Share of Operating Expenses, then Tenant shall have the right to have an independent public accounting firm selected by Tenant from among the 4 largest in the United States, working pursuant to a fee arrangement other than a contingent fee (at Tenant's sole cost and expense) and approved by Landlord (which approval shall not be unreasonably withheld or delayed), audit and/or review the Expense Information for the year in question (the "**Independent Review**"). The results of any such Independent Review shall be binding on Landlord and Tenant. If the Independent Review shows that the payments actually made by Tenant with respect to Operating Expenses for the calendar year in question exceeded Tenant's Share of Operating Expenses for such calendar year, Landlord shall at Landlord's option either (i) credit the excess amount to the next succeeding installments of estimated Operating Expenses or (ii) pay the excess to Tenant within 30 days after delivery of such statement, except that after the expiration or earlier termination of this Lease or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. If the Independent Review shows that Tenant's payments with respect to Operating Expenses for such calendar year were less than Tenant's Share of Operating Expenses for the calendar year, Tenant shall pay the deficiency to Landlord within 30 days after delivery of such statement. If the Independent Review shows that Tenant has overpaid with respect to Operating Expenses by more than 5% then Landlord shall reimburse Tenant for all costs incurred by Tenant for the Independent Review. Operating Expenses for the calendar years in which Tenant's obligation to share therein begins and ends shall be prorated. Notwithstanding anything set forth herein to the contrary, if the Building is not at least 95% occupied on average during any year of the Term, Tenant's Share of Operating Expenses for such year shall be computed as though the Building had been 95% occupied on average during such year.

"**Tenant's Share**" shall be the percentage set forth on the first page of this Lease as Tenant's Share as reasonably adjusted by Landlord for changes in the physical size of the Premises or the Project occurring thereafter. Landlord may equitably increase Tenant's Share for any item of expense or cost reimbursable by Tenant that relates to a repair, replacement, or service that benefits only the Premises or only a portion of the Project that includes the Premises or that varies with occupancy or use. Base Rent, Tenant's Share of Operating Expenses and all other amounts payable by Tenant to Landlord hereunder are collectively referred to herein as "**Rent**."

6. **Security Deposit**. Tenant shall deposit with Landlord, upon delivery of an executed copy of this Lease to Landlord, a security deposit (the "**Security Deposit**") for the performance of all of Tenant's obligations hereunder in the amount set forth on page 1 of this Lease, which Security Deposit shall be in the form, at Tenant's option, of cash or an unconditional and irrevocable letter of credit (the "**Letter of Credit**"): (i) in form and substance satisfactory to Landlord, (ii) naming Landlord as beneficiary, (iii) expressly allowing Landlord to draw upon it at any time from time to time by delivering to the issuer notice that Landlord is entitled to draw thereunder, (iv) issued by an FDIC-insured financial institution satisfactory to Landlord, and (v) redeemable by presentation of a sight draft in the state of Landlord's

choice. If Tenant does not provide Landlord with a substitute Letter of Credit complying with all of the requirements hereof at least 10 days before the stated expiration date of any then current Letter of Credit, Landlord shall have the right to draw the full amount of the current Letter of Credit and hold the funds drawn in cash without obligation for interest thereon as the Security Deposit. The Security Deposit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of a Default (as defined in Section 20), Landlord may use all or any part of the Security Deposit to pay delinquent payments due under this Lease, future rent damages, and the cost of any damage, injury, expense or liability caused by such Default, without prejudice to any other remedy provided herein or provided by law. Landlord's right to use the Security Deposit under this Section 6 includes the right to use the Security Deposit to pay future rent damages following the termination of this Lease pursuant to Section 21(c) below. Upon any use of all or any portion of the Security Deposit, Tenant shall pay Landlord on demand the amount that will restore the Security Deposit to the amount set forth on Page 1 of this Lease. Tenant hereby waives the provisions of any law, now or hereafter in force, which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of Rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the act or omission of Tenant or any officer, employee, agent or invitee of Tenant. Upon 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 periods prior to the filing of such proceedings. If Tenant shall fully perform every provision of this Lease to be performed by Tenant, the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within 60 days after the expiration or earlier termination of this Lease.

If Landlord transfers its interest in the Project or this Lease, Landlord shall either (a) transfer any Security Deposit then held by Landlord to a person or entity assuming Landlord's obligations under this Section 6, or (b) return to Tenant any Security Deposit then held by Landlord and remaining after the deductions permitted herein. Upon such transfer to such transferee or the return of the Security Deposit to Tenant, Landlord shall have no further obligation with respect to the Security Deposit, and Tenant's right to the return of the Security Deposit shall apply solely against Landlord's transferee. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee, and no interest shall accrue thereon.

7. **Use**. The Premises shall be used solely for the Permitted Use set forth in the basic lease provisions on page 1 of this Lease, and in compliance with all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Premises, and to the use and occupancy thereof, including, without limitation, the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq. (together with the regulations promulgated pursuant thereto, "**ADA**") (collectively, "**Legal Requirements**" and each, a "**Legal Requirement**"). Tenant shall, upon 5 days' written notice from Landlord, discontinue any use of the Premises which is declared by any Governmental Authority (as defined in Section 9) having jurisdiction to be a violation of a Legal Requirement. Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance risk, or cause the disallowance of any sprinkler or other credits. Tenant shall not permit any part of the Premises to be used as a "place of public accommodation", as defined in the ADA or any similar legal requirement. Tenant shall reimburse Landlord promptly upon demand for any additional premium charged for any such insurance policy by reason of Tenant's failure to comply with the provisions of this Section or otherwise caused by Tenant's use and/or occupancy of the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit or permit waste, overload the floor or structure of the Premises, subject the Premises to use that would damage the Premises or obstruct or interfere with the rights of Landlord or other tenants or occupants of the Project, including conducting or giving notice of any auction, liquidation, or going out of business sale on the Premises, or using or allowing the Premises to be used

for any unlawful purpose. Tenant shall cause any equipment or machinery installed by it in the Premises so as to reasonably prevent sounds or vibrations from the Premises from extending into Common Areas, or other space in the Project. Tenant shall not place any machinery or equipment weighing 500 pounds or more in or upon the Premises or transport or move such items through the Common Areas of the Project or in the Project elevators without the prior written consent of Landlord. Except as may be provided under the Work Letter, Tenant shall not, without the prior written consent of Landlord, use the Premises in any manner which will require ventilation, air exchange, heating, gas, steam, electricity or water beyond the existing capacity of the Project as proportionately allocated to the Premises based upon Tenant's Share as usually furnished for the Permitted Use.

Landlord shall be responsible for the compliance of the Common Areas of the Project with the ADA as of the Commencement Date. Following the Commencement Date, Landlord shall, as an Operating Expense (to the extent such Legal Requirement is generally applicable to similar buildings in the area in which the Project is located) and at Tenant's expense (to the extent such Legal Requirement is triggered by reason of Tenant's, as compared to other tenants of the Project, use of the Premises or Tenant's Alterations) make any alterations or modifications to the Common Areas or the exterior of the Building that are required by Legal Requirements. Tenant, at its sole expense, shall make any alterations or modifications to the interior of the Premises that are required by Legal Requirements (including, without limitation, compliance of the Premises with the ADA) related to Tenant's use or occupancy of the Premises. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") arising out of or in connection with Legal Requirements related to Tenant's use or occupancy of the Premises or Tenant's Alterations, and Tenant shall indemnify, defend, hold and save Landlord harmless from and against any and all Claims arising out of or in connection with any failure of the Premises to comply with any Legal Requirement related to Tenant's use or occupancy of the Premises or Tenant's Alterations.

8. **Holding Over**. If, with Landlord's express written consent, Tenant retains possession of the Premises after the termination of the Term, (i) unless otherwise agreed in such written consent, such possession shall be subject to immediate termination by Landlord at any time, (ii) all of the other terms and provisions of this Lease (including, without limitation, the adjustment of Base Rent pursuant to Section 4 hereof) shall remain in full force and effect (excluding any expansion or renewal option or other similar right or option) during such holdover period, (iii) Tenant shall continue to pay Base Rent in the amount payable upon the date of the expiration or earlier termination of this Lease or such other amount as Landlord may indicate, in Landlord's sole and absolute discretion, in such written consent, and (iv) all other payments shall continue under the terms of this Lease. If Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without the express written consent of Landlord, (A) Tenant shall become a tenant at sufferance upon the terms of this Lease except that the monthly rental shall be equal to 150% of Rent in effect during the last 30 days of the Term, and (B) Tenant shall be responsible for all damages suffered by Landlord resulting from or occasioned by Tenant's holding over, including consequential damages; provided, however, that if Tenant delivers a written inquiry to Landlord within 30 days prior to the expiration or earlier termination of the Term, Landlord will notify Tenant whether the potential exists for consequential damages. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Section 8 shall not be construed as consent for Tenant to retain possession of the Premises. Acceptance by Landlord of Rent after the expiration of the Term or earlier termination of this Lease shall not result in a renewal or reinstatement of this Lease.

9. **Taxes**. Landlord shall pay, as part of Operating Expenses, all taxes, levies, fees, assessments and governmental charges of any kind, existing as of the Commencement Date or thereafter enacted (collectively referred to as "**Taxes**"), imposed by any federal, state, regional, municipal, local or other governmental authority or agency, including, without limitation, quasi-public agencies (collectively, "**Governmental Authority**") during the Term, including, without limitation, all Taxes: (i) imposed on or measured by or based, in whole or in part, on rent payable to (or gross receipts

received by) Landlord under this Lease and/or from the rental by Landlord of the Project or any portion thereof, or (ii) based on the square footage, assessed value or other measure or evaluation of any kind of the Premises or the Project, or (iii) assessed or imposed by or on the operation or maintenance of any portion of the Premises or the Project, including parking, or (iv) assessed or imposed by, or at the direction of, or resulting from Legal Requirements, or interpretations thereof, promulgated by any Governmental Authority, or (v) imposed as a license or other fee, charge, tax, or assessment on Landlord's business or occupation of leasing space in the Project. Landlord may contest by appropriate legal proceedings the amount, validity, or application of any Taxes or liens securing Taxes. Taxes shall not include any net income taxes imposed on Landlord except to the extent such net income taxes are in substitution for any Taxes payable hereunder. If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is increased by a value attributable to improvements in or alterations to the Premises, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. Landlord's determination of any excess assessed valuation shall be binding and conclusive, absent manifest error. The amount of any such payment by Landlord shall constitute Additional Rent due from Tenant to Landlord immediately upon demand.

10. **Parking**. Subject to all matters of record, Force Majeure, a Taking (as defined in Section 19 below) and the exercise by Landlord of its rights hereunder, Tenant shall have the right, in common with other tenants of the Project pro rata in accordance with the rentable area of the Premises and the rentable areas of the Project occupied by such other tenants, to park in those areas designated for non-reserved parking, subject in each case to Landlord's rules and regulations. As of the Commencement Date, Tenant's share pro rata share of parking is equal to 3 parking spaces per 1,000 rentable square feet of the Premises. Landlord may allocate parking spaces among Tenant and other tenants in the Project pro rata as described above if Landlord determines that such parking facilities are becoming crowded. Landlord shall not be responsible for enforcing Tenant's parking rights against any third parties, including other tenants of the Project.

11. **Utilities, Services**. Landlord shall provide, subject to the terms of this Section 11, water, electricity, HVAC, light, power, sewer, and other utilities (including gas and fire sprinklers to the extent the Project is plumbed for such services), and, with respect to the Common Areas, refuse and trash collection and janitorial services (collectively, "**Utilities**"). Landlord shall pay, as Operating Expenses or subject to Tenant's reimbursement obligation, for all Utilities used on the Premises, all maintenance charges for Utilities, and any storm sewer charges or other similar charges for Utilities imposed by any Governmental Authority or Utility provider, and any taxes, penalties, surcharges or similar charges thereon. Landlord may cause, at Tenant's expense, any Utilities to be separately metered or charged directly to Tenant by the provider. Tenant shall pay directly to the Utility provider, prior to delinquency, any separately metered Utilities and services which may be furnished to Tenant or the Premises during the Term. Tenant shall pay, as part of Operating Expenses, its share of all charges for jointly metered Utilities based upon consumption, as reasonably determined by Landlord. No interruption or failure of Utilities, from any cause whatsoever other than Landlord's gross negligence or willful misconduct, shall result in eviction or constructive eviction of Tenant, termination of this Lease or, except as provided in the immediately following paragraph, the abatement of Rent. Tenant agrees to limit use of water and sewer with respect to Common Areas to normal restroom use. Tenant shall be responsible for obtaining and paying for its own janitorial services for the Premises using contractors/providers reasonably acceptable to Landlord.

Notwithstanding anything to the contrary set forth herein, if (i) a stoppage of an Essential Service (as defined below) to the Premises shall occur and such stoppage is due solely to the gross negligence or willful misconduct of Landlord and not due in any part to any act or omission on the part of Tenant or any Tenant Party or any matter beyond Landlord's reasonable control (any such stoppage of an Essential

Service being hereinafter referred to as a "**Service Interruption**"), and (ii) such Service Interruption continues for more than 5 consecutive business days after Landlord shall have received written notice thereof from Tenant, and (iii) as a result of such Service Interruption, the conduct of Tenant's normal operations in the Premises are materially and adversely affected, then, to the extent that such Service Interruption is covered by rental interruption insurance carried by Landlord pursuant to this Lease, there shall be an abatement of one day's Base Rent for each day during which such Service Interruption continues after such 5 business day period; provided, however, that if any part of the Premises is reasonably useable for Tenant's normal business operations or if Tenant conducts all or any part of its operations in any portion of the Premises notwithstanding such Service Interruption, then the amount of each daily abatement of Base Rent shall only be proportionate to the nature and extent of the interruption of Tenant's normal operations or ability to use the Premises. The rights granted to Tenant under this paragraph shall be Tenant's sole and exclusive remedy resulting from a failure of Landlord to provide services, and Landlord shall not otherwise be liable for any loss or damage suffered or sustained by Tenant resulting from any failure or cessation of services. For purposes hereof, the term "**Essential Services**" shall mean the following services: access to the Premises, HVAC service, water, sewer and electricity, but in each case only to the extent that Landlord has an obligation to provide same to Tenant under this Lease. The provisions of this paragraph shall only apply as long as the original Tenant is the tenant occupying the Premises under this Lease and shall not apply to any assignee or sublessee.

Landlord's sole obligation for either providing emergency generators or providing emergency back-up power to Tenant shall be: (i) to provide an emergency generator ("**Emergency Generator**") with not less than the capacity of the emergency generator located in the Building as of the Commencement Date, and (ii) to contract with a third party to maintain the Emergency Generator as per the manufacturer's standard maintenance guidelines. Landlord shall have no obligation to provide Tenant with operational Emergency Generator or back-up power or to supervise, oversee or confirm that the third party maintaining the Emergency Generator is maintaining the Emergency Generator as per the manufacturer's standard guidelines or otherwise. Notwithstanding the foregoing, Landlord shall, at least once per month as part of the maintenance of the Building, run the Emergency Generator for a period reasonably determined by Landlord for the purpose of determining whether it operates when started. During any period of replacement, repair or maintenance of the Emergency Generator when the Emergency Generator is not operational, including any delays thereto due to the inability to obtain parts or replacement equipment, Landlord shall have no obligation to provide Tenant with an alternative back-up generator or generators or alternative sources of back-up power. Tenant expressly acknowledges and agrees that Landlord does not guaranty that such Emergency Generator will be operational at all times or that emergency power will be available to the Premises when needed.

Subject to Tenant complying with all of the provisions of this Lease including, without limitation, Section 12 hereof, and all applicable Legal Requirements and Landlord's rules and regulations, Tenant shall have the right, at Tenant's sole cost and expense, to install an emergency generator and related tanks and equipment as approved by applicable Governmental Authorities (collectively, "**Tenant Emergency Generator**") in a location, subject to applicable Legal Requirements, adjacent to the Premises and otherwise in a location reasonably acceptable to both Landlord and Tenant ("**Generator Area**"). All such improvements to the Generator Area shall be of a design and type and with screening acceptable to Landlord, in Landlord's reasonable discretion. Upon the expiration or earlier termination of the Term, Tenant shall deliver the Generator Area to Landlord free of any debris and trash and free of any Hazardous Materials. The number of parking spaces available to Tenant under this Lease may be reduced by the number of parking spaces impacted, if any, by the Tenant Emergency Generator. Tenant may remove the Tenant Emergency Generator upon the expiration or earlier termination of the Term; provided, however, that if Tenant elects to remove the Tenant Emergency Generator at the expiration or earlier termination of the Term, Tenant shall be required, at Tenant's cost, to fully restore the Generator Area to the condition such Generator Area was in prior to Tenant's installation of the Tenant Emergency Generator and restore the Building electrical system affected by the Tenant Emergency Generator such that it is fully functional following such removal including, without limitation, re-connecting all Building loads reallocated to the Tenant Emergency Generator back to their condition prior to the installation of the Tenant Emergency Generator. Landlord shall have no obligation to make any repairs or improvements to the Tenant Emergency Generator or the Generator Area and Tenant shall maintain the same, at Tenant's

sole cost and expense, in good repair and condition during the Term as though the same were part of the Premises.

12. **Alterations and Tenant's Property**. Any alterations, additions, or improvements made to the Premises (excepting the Tenant Improvements (as defined in the Work Letter)) by or on behalf of Tenant, including the installation of additional locks or bolts of any kind or nature upon any doors or windows in the Premises, but excluding installation, removal or realignment of furniture systems (other than removal of furniture systems owned or paid for by Landlord) not involving any modifications to the structure or connections (other than by ordinary plugs or jacks) to Building Systems (as defined in Section 13)("**Alterations**") shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any such Alteration affects the structure or Building Systems and shall not be otherwise unreasonably withheld. If Landlord approves any Alterations, Landlord may impose such conditions on Tenant in connection with the commencement, performance and completion of such Alterations as Landlord may deem appropriate in Landlord's reasonable discretion. Any request for approval shall be in writing, delivered not less than 15 business days in advance of any proposed construction, and accompanied by plans, specifications, bid proposals, work contracts and such other information concerning the nature and cost of the alterations as may be reasonably requested by Landlord, including the identities and mailing addresses of all persons performing work or supplying materials. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to ensure that such plans and specifications or construction comply with applicable Legal Requirements. Tenant shall cause, at its sole cost and expense, all Alterations to comply with insurance requirements and with Legal Requirements and shall implement at its sole cost and expense any alteration or modification required by Legal Requirements as a result of any Alterations. Tenant shall pay to Landlord, as Additional Rent, on demand an amount equal to Landlord's reasonable out-of-pocket costs incurred in connection with any Alteration. Before Tenant begins any Alteration, Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall reimburse Landlord for, and indemnify and hold Landlord harmless from, any expense incurred by Landlord by reason of faulty work done by Tenant or its contractors, delays caused by such work, or inadequate cleanup.

Prior to commencing any Alterations, Tenant shall furnish security or make other arrangements reasonably satisfactory to Landlord to assure payment for the completion of all Alterations work free and clear of liens, and shall provide (and cause each contractor or subcontractor to provide) certificates of insurance for workers' compensation and other coverage in amounts and from an insurance company satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Alterations, Tenant shall deliver to Landlord: (i) sworn statements setting forth the names of all contractors and subcontractors who did the work and final lien waivers from all such contractors and subcontractors; and (ii) "as built" plans for any such Alteration.

Except for Removable Installations (as hereinafter defined), all Installations (as hereinafter defined) shall be and shall remain the property of Landlord during the Term and following the expiration or earlier termination of the Term, shall not be removed by Tenant at any time during the Term, and shall remain upon and be surrendered with the Premises as a part thereof. Notwithstanding the foregoing, Landlord shall, if requested in writing by Tenant at the time its approval of any such Installation is requested, notify Tenant that Landlord requires that Tenant remove such Installation upon the expiration or earlier termination of the Term, in which event Tenant shall remove such Installation in accordance with the immediately succeeding sentence. Upon the expiration or earlier termination of the Term, Tenant shall remove (i) all wires, cables or similar equipment which Tenant has installed in the Premises or in the risers or plenums of the Building, (ii) any Installations for which Landlord has given Tenant notice of removal in accordance with the immediately preceding sentence, and (iii) all of Tenant's Property (as hereinafter defined), and Tenant shall restore and repair any damage caused by or occasioned as a result of such removal, including, without limitation, capping off all such connections behind the walls of the Premises and repairing any holes. During any restoration period beyond the expiration or earlier termination of the Term, Tenant shall pay Rent to Landlord as provided herein as if said space were otherwise occupied by Tenant. If Landlord is requested by Tenant or any lender, lessor or other person or entity claiming an interest in any of Tenant' Property to waive any lien Landlord may have against any

of Tenant's Property, and Landlord consents to such waiver, then Landlord shall be entitled to be paid as administrative rent a fee of $1,000 per occurrence for its time and effort in preparing and negotiating such a waiver of lien.

For purposes of this Lease, (x) "**Removable Installations**" means any items listed on **Exhibit F** attached hereto and any items agreed by Landlord in writing to be included on **Exhibit F** in the future and any Installations required by Landlord to be removed pursuant to the immediately preceding paragraph, (y) "**Tenant's Property**" means Removable Installations and, other than Installations, any personal property or equipment of Tenant that may be removed without material damage to the Premises, and (z) "**Installations**" means all property of any kind paid for by Landlord, all Alterations, all fixtures, and all partitions, hardware, built-in machinery, built-in casework and cabinets and other similar additions, equipment, property and improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in cold rooms, built-in warm rooms, walk-in cold rooms, walk-in warm rooms, deionized water systems, glass washing equipment, autoclaves, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any power generator and transfer switch.

13. **Landlord's Repairs**. Landlord, as an Operating Expense, shall maintain all of the structural (including the foundation, roof, exterior walls, exterior windows and exterior doors), exterior, parking and other Common Areas of the Project, including HVAC, electrical, plumbing, fire sprinklers, boilers and all other building systems serving the Premises and other portions of the Project ("**Building Systems**"), in good repair, reasonable wear and tear and uninsured losses and damages caused by Tenant, or by any of Tenant's agents, servants, employees, invitees and contractors (collectively, "**Tenant Parties**") excluded. Losses and damages caused by Tenant or any Tenant Party shall be repaired by Landlord, to the extent not covered by insurance, at Tenant's sole cost and expense. Landlord reserves the right to stop Building Systems services when necessary (i) by reason of accident or emergency, or (ii) for planned repairs, alterations or improvements, which are, in the judgment of Landlord, desirable or necessary to be made, until said repairs, alterations or improvements shall have been completed. Landlord shall have no responsibility or liability for failure to supply Building Systems services during any such period of interruption; provided, however, that Landlord shall, except in case of emergency, make a commercially reasonable effort to give Tenant 48 hours advance notice of any planned stoppage of Building Systems services for routine maintenance, repairs, alterations or improvements. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Section, after which Landlord shall make a commercially reasonable effort to effect such repair. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance unless such failure shall persist for an unreasonable time after Tenant's written notice of the need for such repairs or maintenance. Tenant waives its rights under any state or local law to terminate this Lease or to make such repairs at Landlord's expense and agrees that the parties' respective rights with respect to such matters shall be solely as set forth herein. Repairs required as the result of fire, earthquake, flood, vandalism, war, or similar cause of damage or destruction shall be controlled by Section 18.

14. **Tenant's Repairs**. Subject to Section 13 hereof, Tenant, at its expense, shall repair, replace and maintain in good condition all portions of the Premises, including, without limitation, entries, doors, ceilings, interior windows, interior walls, and the interior side of demising walls. Should Tenant fail to make any such repair or replacement or fail to maintain the Premises, Landlord shall give Tenant notice of such failure. If Tenant fails to commence cure of such failure within 10 days of Landlord's notice, and thereafter diligently prosecute such cure to completion, Landlord may perform such work and shall be reimbursed by Tenant within 10 days after demand therefor; provided, however, that if such failure by Tenant creates or could create an emergency, Landlord may immediately commence cure of such failure and shall thereafter be entitled to recover the costs of such cure from Tenant. Subject to Sections 17 and 18, Tenant shall bear the full uninsured cost of any repair or replacement to any part of the Project that results from damage caused by Tenant or any Tenant Party and any repair that benefits only the Premises.

15. **Mechanic's Liens**. Tenant shall discharge, by bond or otherwise, any mechanic's lien filed against the Premises or against the Project for work claimed to have been done for, or materials

claimed to have been furnished to, Tenant within 15 days after the filing thereof, at Tenant's sole cost and shall otherwise keep the Premises and the Project free from any liens arising out of work performed, materials furnished or obligations incurred by Tenant. Should Tenant fail to discharge any lien described herein within 15 days of its filing, Landlord shall have the right, but not the obligation, to pay such claim or post a bond or otherwise provide security to eliminate the lien as a claim against title to the Project and the cost thereof shall be immediately due from Tenant as Additional Rent. If Tenant shall lease or finance 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 filed as a matter of public record by any lessor or creditor of Tenant will 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 Project be furnished on the statement without qualifying language as to applicability of the lien only to removable personal property, located in an identified suite held by Tenant.

16. **Indemnification**. Tenant hereby indemnifies and agrees to defend, save and hold Landlord harmless from and against any and all Claims for injury or death to persons or damage to property occurring within or about the Premises, arising directly or indirectly out of use or occupancy of the Premises by Tenant or any Tenant Party or a breach or default by Tenant in the performance of any of its obligations hereunder, except to the extent caused by the willful misconduct or gross negligence of Landlord. Landlord shall not be liable to Tenant for, and Tenant assumes all risk of damage to, personal property (including, without limitation, loss of records kept within the Premises). Tenant further waives any and all Claims for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property (including, without limitation, any loss of records). Landlord shall not be liable for any damages arising from any act, omission or neglect of any tenant in the Project or of any other third party.

17. **Insurance**. Landlord shall maintain all risk property and, if applicable, sprinkler damage insurance covering the full replacement cost of the Project (including the Tenant Improvements). Landlord shall further procure and maintain commercial general liability insurance with a single loss limit of not less than $2,000,000 for bodily injury and property damage with respect to the Project. Landlord may, but is not obligated to, maintain such other insurance and additional coverages as it may deem necessary, including, but not limited to, flood, environmental hazard and earthquake, loss or failure of building equipment, errors and omissions, rental loss during the period of repair or rebuilding, workers' compensation insurance and fidelity bonds for employees employed to perform services and insurance for any improvements installed by Tenant or which are in addition to the standard improvements customarily furnished by Landlord without regard to whether or not such are made a part of the Project. All such insurance shall be included as part of the Operating Expenses. The Project may be included in a blanket policy (in which case the cost of such insurance allocable to the Project will be determined by Landlord based upon the insurer's cost calculations). Tenant shall also reimburse Landlord for any increased premiums or additional insurance which Landlord reasonably deems necessary as a result of Tenant's use of the Premises.

Tenant, at its sole cost and expense, shall maintain during the Term: all risk property insurance with business interruption and extra expense coverage, covering the full replacement cost of all property and improvements (other than the Tenant Improvements) installed or placed in the Premises by Tenant at Tenant's expense; workers' compensation insurance with no less than the minimum limits required by law; employer's liability insurance with such limits as required by law; and commercial general liability insurance, with a minimum limit of not less than $2,000,000 per occurrence for bodily injury and property damage with respect to the Premises. Tenant's commercial general liability insurance policy shall name Alexandria Real Estate Equities, Inc., and Landlord, its officers, directors, employees, managers, agents, invitees and contractors (collectively, "**Landlord Parties**"), as additional insureds; insure on an occurrence and not a claims-made basis; be issued by insurance companies which have a rating of not less than policyholder rating of A and financial category rating of at least Class X in "Best's Insurance Guide"; shall not be cancelable for nonpayment of premium unless 30 days prior written notice shall have been given to Landlord from the insurer; not contain a hostile fire exclusion; contain a contractual liability endorsement; and provide primary coverage to Landlord (any policy issued to Landlord providing

duplicate or similar coverage shall be deemed excess over Tenant's policies). Copies of such policies (if requested by Landlord), or certificates of insurance showing the limits of coverage required hereunder and showing Landlord as an additional insured, along with reasonable evidence of the payment of premiums for the applicable period, shall be delivered to Landlord by Tenant prior to (i) the earlier to occur of (x) the Commencement Date, or (y) the date that Tenant accesses the Premises under this Lease, and (ii) each renewal of said insurance. Tenant's policy may be a "blanket policy" with an aggregate per location endorsement which specifically provides that the amount of insurance shall not be prejudiced by other losses covered by the policy. Tenant shall, at least 5 days prior to the expiration of such policies, furnish Landlord with renewal certificates.

In each instance where insurance is to name Landlord as an additional insured, Tenant shall upon written request of Landlord also designate and furnish certificates so evidencing Landlord as additional insured to: (i) any lender of Landlord holding a security interest in the Project or any portion thereof, (ii) the landlord under any lease wherein Landlord is tenant of the real property on which the Project is located, if the interest of Landlord is or shall become that of a tenant under a ground or other underlying lease rather than that of a fee owner, and/or (iii) any management company retained by Landlord to manage the Project.

The property insurance obtained by Landlord and Tenant shall include a waiver of subrogation by the insurers and all rights based upon an assignment from its insured, against Landlord or Tenant, and their respective officers, directors, employees, managers, agents, invitees and contractors ("**Related Parties**"), in connection with any loss or damage thereby insured against. Neither party nor its respective Related Parties shall be liable to the other for loss or damage caused by any risk insured against under property insurance required to be maintained hereunder, and each party waives any claims against the other party, and its respective Related Parties, for such loss or damage. The failure of a party to insure its property shall not void this waiver. Landlord and its respective Related Parties shall not be liable for, and Tenant hereby waives all claims against such parties for, business interruption and losses occasioned thereby sustained by Tenant or any person claiming through Tenant resulting from any accident or occurrence in or upon the Premises or the Project from any cause whatsoever. If the foregoing waivers shall contravene any law with respect to exculpatory agreements, the liability of Landlord or Tenant shall be deemed not released but shall be secondary to the other's insurer.

Landlord may require insurance policy limits to be raised to conform with requirements of Landlord's lender and/or to bring coverage limits to levels then being generally required of new tenants within the Project; provided, however, that the increased amount of coverage is consistent with coverage amounts then being required by institutional owners of similar projects with tenants occupying similar size premises in the geographical area in which the Project is located.

18. **Restoration**. If, at any time during the Term, the Project or the Premises are damaged or destroyed by a fire or other insured casualty, Landlord shall notify Tenant in writing within 45 days after discovery of such damage as to the amount of time Landlord reasonably estimates it will take to restore the Project or the Premises, as applicable (the "**Restoration Period**"). If the Restoration Period is estimated to exceed 9 months (the "**Maximum Restoration Period**"), Landlord may, in such notice, elect to terminate this Lease as of the date that is 75 days after the date of discovery of such damage or destruction; provided, however, that notwithstanding Landlord's election to restore, Tenant may elect to terminate this Lease by written notice to Landlord delivered within 5 business days of receipt of a notice from Landlord estimating a Restoration Period for the Premises longer than the Maximum Restoration Period . Unless either Landlord or Tenant so elects to terminate this Lease, Landlord shall, subject to receipt of sufficient insurance proceeds (with any deductible to be treated as a current Operating Expense), promptly restore the Premises (excluding the improvements installed by Tenant or by Landlord and paid for by Tenant), subject to delays arising from the collection of insurance proceeds, from Force Majeure events or as needed to obtain any license, clearance or other authorization of any kind required to enter into and restore the Premises issued by any Governmental Authority having jurisdiction over the use, storage, handling, treatment, generation, release, disposal, removal or remediation of Hazardous Materials (as defined in Section 30) in, on or about the Premises (collectively referred to herein as "**Hazardous Materials Clearances**"); provided, however, that if repair or restoration of the Premises is

not substantially complete as of the end of the Maximum Restoration Period or, if longer, the Restoration Period, Landlord may, in its sole and absolute discretion, elect not to proceed with such repair and restoration, or Tenant may by written notice to Landlord delivered within 5 business days of the expiration of the Maximum Restoration Period or, if longer, the Restoration Period, elect to terminate this Lease, in which event Landlord shall be relieved of its obligation to make such repairs or restoration and this Lease shall terminate as of the date that is 75 days after the later of: (i) discovery of such damage or destruction, or (ii) the date all required Hazardous Materials Clearances are obtained, but Landlord shall retain any Rent paid and the right to any Rent payable by Tenant prior to such election by Landlord or Tenant..

Tenant, at its expense, shall promptly perform, subject to delays arising from the collection of insurance proceeds, from Force Majeure (as defined in Section 34) events or to obtain Hazardous Material Clearances, all repairs or restoration not required to be done by Landlord and shall promptly re-enter the Premises and commence doing business in accordance with this Lease. Notwithstanding the foregoing, either Landlord or Tenant may terminate this Lease upon written notice to the other if the Premises are damaged during the last year of the Term and Landlord reasonably estimates that it will take more than 2 months to repair such damage; provided, however, that such notice is delivered within 10 business days after the date that Landlord provides Tenant with written notice of the estimated Restoration Period. Landlord shall also have the right to terminate this Lease if insurance proceeds are not available for such restoration. Rent shall be abated from the date all required Hazardous Material Clearances are obtained until the Premises are repaired and restored, in the proportion which the area of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises, unless Landlord provides Tenant with other space during the period of repair that is suitable for the temporary conduct of Tenant's business. In the event that no Hazardous Material Clearances are required to be obtained by Tenant with respect to the Premises, rent abatement shall commence on the date of discovery of the damage or destruction. Such abatement shall be the sole remedy of Tenant, and except as provided in this Section 18, Tenant waives any right to terminate the Lease by reason of damage or casualty loss.

The provisions of this Lease, including this Section 18, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, or any other portion of the Project, and any statute or regulation which is now or may hereafter be in effect shall have no application to this Lease or any damage or destruction to all or any part of the Premises or any other portion of the Project, the parties hereto expressly agreeing that this Section 18 sets forth their entire understanding and agreement with respect to such matters.

19. **Condemnation**. If the whole or any material part of the Premises or the Project is taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a "**Taking**" or "**Taken**"), and the Taking would in Landlord's reasonable judgment, either prevent or materially interfere with Tenant's use of the Premises or materially interfere with or impair Landlord's ownership or operation of the Project, then upon written notice by Landlord this Lease shall terminate and Rent shall be apportioned as of said date. If part of the Premises shall be Taken, and this Lease is not terminated as provided above, Landlord shall promptly restore the Premises and the Project as nearly as is commercially reasonable under the circumstances to their condition prior to such partial Taking and the rentable square footage of the Building, the rentable square footage of the Premises, Tenant's Share of Operating Expenses and the Rent payable hereunder during the unexpired Term shall be reduced to such extent as may be fair and reasonable under the circumstances. Upon any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's trade fixtures, if a separate award for such items is made to Tenant. Tenant hereby waives any and all rights it might otherwise have pursuant to any provision of state law to terminate this Lease upon a partial Taking of the Premises or the Project.

20. **Events of Default**. Each of the following events shall be a default ("**Default**") by Tenant under this Lease:

(a) **Payment Defaults**. Tenant shall fail to pay any installment of Rent or any other payment hereunder when due; provided, however, that Landlord will give Tenant notice and an opportunity to cure any failure to pay Rent within 3 days of any such notice not more than once in any 12 month period and Tenant agrees that such notice shall be in lieu of and not in addition to, or shall be deemed to be, any notice required by law.

(b) **Insurance**. Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, or Landlord shall receive a notice of nonrenewal of any such insurance and Tenant shall fail to obtain replacement insurance at least 20 days before the expiration of the current coverage.

(c) **Abandonment**. Tenant shall abandon the Premises. Tenant shall not be deemed to have abandoned the Premises if (i) Tenant provides Landlord with reasonable advance notice prior to vacating and, at the time of vacating the Premises, Tenant completes Tenant's obligations with respect to the Surrender Plan in compliance with Section 28, (ii) Tenant has made reasonable arrangements with Landlord for the security of the Premises for the balance of the Term, and (iii) Tenant continues during the balance of the Term to satisfy all of its obligations under the Lease as they come due.

(d) **Improper Transfer**. Tenant shall assign, sublease or otherwise transfer or attempt to transfer all or any portion of Tenant's interest in this Lease or the Premises except as expressly permitted herein, or Tenant's interest in this Lease shall be attached, executed upon, or otherwise judicially seized and such action is not released within 90 days of the action.

(e) **Liens**. Tenant shall fail to discharge or otherwise obtain the release of any lien placed upon the Premises in violation of this Lease within 15 days after any such lien is filed against the Premises.

(f) **Insolvency Events**. Tenant or any guarantor or surety of Tenant's obligations hereunder shall: (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a "**Proceeding for Relief**"); (C) become the subject of any Proceeding for Relief which is not dismissed within 90 days of its filing or entry; or (D) die or suffer a legal disability (if Tenant, guarantor, or surety is an individual) or be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity).

(g) **Estoppel Certificate or Subordination Agreement**. Tenant fails to execute any document required from Tenant under Sections 23 or 27 within 5 days after a second notice requesting such document.

(h) **Other Defaults**. Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Section 20, and, except as otherwise expressly provided herein, such failure shall continue for a period of 10 days after written notice thereof from Landlord to Tenant.

Any notice given under Section 20(h) hereof shall: (i) specify the alleged default, (ii) demand that Tenant cure such default, (iii) be in lieu of, and not in addition to, or shall be deemed to be, any notice required under any provision of applicable law, and (iv) not be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice; provided that if the nature of Tenant's default pursuant to Section 20(h) is such that it cannot be cured by the payment of money and reasonably requires more than 10 days to cure, then Tenant shall not be deemed to be in default if Tenant commences such cure

within said 10 day period and thereafter diligently prosecutes the same to completion; provided, however, that such cure shall be completed no later than 30 days from the date of Landlord's notice.

21. **Landlord's Remedies**.

(a) **Payment By Landlord; Interest**. Upon a Default by Tenant hereunder, Landlord may, without waiving or releasing any obligation of Tenant hereunder, make such payment or perform such act. All sums so paid or incurred by Landlord, together with interest thereon, from the date such sums were paid or incurred, at the annual rate equal to 12% per annum or the highest rate permitted by law (the "**Default Rate**"), whichever is less, shall be payable to Landlord on demand as Additional Rent. Nothing herein shall be construed to create or impose a duty on Landlord to mitigate any damages resulting from Tenant's Default hereunder.

(b) **Late Payment Rent**. Late payment by Tenant to Landlord of Rent and other sums due will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult and impracticable to ascertain. Such costs include, but are not limited to, processing and accounting charges and late charges which may be imposed on Landlord under any Mortgage covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within 5 days after the date such payment is due, Tenant shall pay to Landlord an additional sum equal to 6% of the overdue Rent as a late charge. Notwithstanding the foregoing, before assessing a late charge the first time in any calendar year, Landlord shall provide Tenant written notice of the delinquency and will waive the right if Tenant pays such delinquency within 5 days thereafter. The parties agree that this late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of late payment by Tenant. In addition to the late charge, Rent not paid when due shall bear interest at the Default Rate from the 5th day after the date due until paid.

(c) **Remedies**. Upon the occurrence of a Default, Landlord, at its option, without further notice or demand to Tenant, shall have in addition to all other rights and remedies provided in this Lease, at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(i) Terminate this Lease, or at Landlord's option, Tenant's right to possession only, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim or damages therefor;

(ii) Upon any termination of this Lease, whether pursuant to the foregoing Section 21(c)(i) or otherwise, Landlord may recover from Tenant the following:

(A) The amount of any unpaid rent which has been earned at the time of such termination; plus

(B) The amount of the unpaid rent for the balance of the Term; plus

(C) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(D) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

The term "**rent**" as used in this Section 21 shall be deemed to be and to mean all sums of every nature required to be paid by Tenant pursuant to the terms of this Lease, whether to Landlord or to others. As used in Section 21(c)(ii)(A) above, the "**amount**" shall be computed by allowing interest at the Default Rate.

(iii) Landlord may continue this Lease in effect after Tenant's Default and recover rent as it becomes due (Landlord and Tenant hereby agreeing that Tenant has the right to sublet or assign hereunder, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease following a Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies hereunder, including the right to recover all Rent as it becomes due.

(iv) Whether or not Landlord elects to terminate this Lease following a Default by Tenant, Landlord shall have the right to terminate any and all subleases, licenses, concessions or other consensual arrangements for possession entered into by Tenant and affecting the Premises or may, in Landlord's sole discretion, succeed to Tenant's interest in such subleases, licenses, concessions or arrangements. Upon Landlord's election to succeed to Tenant's interest in any such subleases, licenses, concessions or arrangements, Tenant shall, as of the date of notice by Landlord of such election, have no further right to or interest in the rent or other consideration receivable thereunder.

(v) Independent of the exercise of any other remedy of Landlord hereunder or under applicable law, Landlord may conduct an environmental test of the Premises as generally described in Section 30(d) hereof, at Tenant's expense.

(d) **Effect of Exercise**. Exercise by Landlord of any remedies hereunder or otherwise available shall not be deemed to be an acceptance of surrender of the Premises and/or a termination of this Lease by Landlord, it being understood that such surrender and/or termination can be effected only by the express written agreement of Landlord and Tenant. Any law, usage, or custom to the contrary notwithstanding, Landlord shall have the right at all times to enforce the provisions of this Lease in strict accordance with the terms hereof; and the failure of Landlord at any time to enforce its rights under this Lease strictly in accordance with same shall not be construed as having created a custom in any way or manner contrary to the specific terms, provisions, and covenants of this Lease or as having modified the same and shall not be deemed a waiver of Landlord's right to enforce one or more of its rights in connection with any subsequent default. A receipt by Landlord of Rent or other payment with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by Landlord. To the greatest extent permitted by law, Tenant waives the service of notice of Landlord's intention to re-enter, re-take or otherwise obtain possession of the Premises as provided in any statute, or to institute legal proceedings to that end, and also waives all right of redemption in case Tenant shall be dispossessed by a judgment or by warrant of any court or judge. Any reletting of the Premises or any portion thereof shall be on such terms and conditions as Landlord in its sole discretion may determine. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or collect rent due in respect of such reletting or otherwise to mitigate any damages arising by reason of Tenant's Default. In no event shall Landlord have any duty or obligation to mitigate damages.

22. **Assignment and Subletting**.

(a) **General Prohibition**. Without Landlord's prior written consent subject to and on the conditions described in this Section 22, Tenant shall not, directly or indirectly, voluntarily or by operation of law, assign this Lease or sublease the Premises or any part thereof or mortgage, pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises, and any

attempt to do any of the foregoing shall be void and of no effect. If Tenant is a corporation, partnership or limited liability company, the shares or other ownership interests thereof which are not actively traded upon a stock exchange or in the over-the-counter market, a transfer or series of transfers whereby 25% or more of the issued and outstanding shares or other ownership interests of such corporation are, or voting control is, transferred (but excepting transfers upon deaths of individual owners) from a person or persons or entity or entities which were owners thereof at time of execution of this Lease to persons or entities who were not owners of shares or other ownership interests of the corporation, partnership or limited liability company at time of execution of this Lease, shall be deemed an assignment of this Lease requiring the consent of Landlord as provided in this Section 22.

(b) **Permitted Transfers**. If Tenant desires to assign, sublease, hypothecate or otherwise transfer this Lease or sublet the Premises *other than pursuant to a Permitted Assignment (as defined below)*, then at least 15 business days, but not more than 45 business days, before the date Tenant desires the assignment or sublease to be effective (the "**Assignment Date**"), Tenant shall give Landlord a notice (the "**Assignment Notice**") containing such information about the proposed assignee or sublessee, including the proposed use of the Premises and any Hazardous Materials proposed to be used, stored handled, treated, generated in or released or disposed of from the Premises, the Assignment Date, any relationship between Tenant and the proposed assignee or sublessee, and all material terms and conditions of the proposed assignment or sublease, including a copy of any proposed assignment or sublease in its final form, and such other information as Landlord may deem reasonably necessary or appropriate to its consideration whether to grant its consent. Landlord may, by giving written notice to Tenant within 15 business days after receipt of the Assignment Notice: (i) grant such consent, (ii) refuse such consent, in its reasonable discretion; or (iii) terminate this Lease with respect to the space described in the Assignment Notice as of the Assignment Date (an "**Assignment Termination**"). Among other reasons, it shall be reasonable for Landlord to withhold its consent in any of these instances: (1) the proposed assignee or subtenant is a governmental agency; (2) in Landlord's reasonable judgment, the use of the Premises by the proposed assignee or subtenant would entail any alterations that would lessen the value of the leasehold improvements in the Premises, or would require increased services by Landlord; (3) in Landlord's reasonable judgment, the proposed assignee or subtenant is engaged in areas of scientific research or other business concerns that are controversial; (4) in Landlord's reasonable judgment, the proposed assignee or subtenant lacks the creditworthiness to support the financial obligations it will incur under the proposed assignment or sublease; (5) in Landlord's reasonable judgment, the character, reputation, or business of the proposed assignee or subtenant is inconsistent with the desired tenant-mix or the quality of other tenancies in the Project or is inconsistent with the type and quality of the nature of the Building; (6) Landlord has received from any prior landlord to the proposed assignee or subtenant a negative report concerning such prior landlord's experience with the proposed assignee or subtenant; (7) Landlord has experienced previous defaults by or is in litigation with the proposed assignee or subtenant; (8) the use of the Premises by the proposed assignee or subtenant will violate any applicable Legal Requirement; (9) the proposed assignee or subtenant, or any entity that, directly or indirectly, controls, is controlled by, or is under common control with the proposed assignee or subtenant, is then an occupant of the Project; (10) the proposed assignee or subtenant is an entity with whom Landlord is negotiating to lease space in the Project; or (11) the assignment or sublease is prohibited by Landlord's lender. If Landlord delivers notice of its election to exercise an Assignment Termination, Tenant shall have the right to withdraw such Assignment Notice by written notice to Landlord of such election within 5 business days after Landlord's notice electing to exercise the Assignment Termination. If Tenant withdraws such Assignment Notice, this Lease shall continue in full force and effect. If Tenant does not withdraw such Assignment Notice, this Lease, and the term and estate herein granted, shall terminate as of the Assignment Date with respect to the space described in such Assignment Notice. No failure of Landlord to exercise any such option to terminate this Lease, or to deliver a timely notice in response to the Assignment Notice, shall be deemed to be Landlord's consent to the proposed assignment, sublease or other transfer. Tenant shall pay to Landlord a fee equal to One Thousand Five Hundred Dollars ($1,500) in connection with its consideration of any Assignment Notice and/or its preparation or review of any consent documents. Notwithstanding the foregoing, Landlord's consent to an assignment of this Lease or a subletting of any portion of the Premises to any entity controlling, controlled by or under common control with Tenant (a **Permitted Assignment**") shall not be

required, provided that Landlord shall have the right to approve the form of any such sublease or assignment.

(c) **Additional Conditions**. As a condition to any such assignment or subletting, whether or not Landlord's consent is required, Landlord may require:

(i) that any assignee or subtenant agree, in writing at the time of such assignment or subletting, that if Landlord gives such party notice that Tenant is in default under this Lease, such party shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments will be received by Landlord without any liability except to credit such payment against those due under the Lease, and any such third party shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, in no event shall Landlord or its successors or assigns be obligated to accept such attornment; and

(ii) A list of Hazardous Materials, certified by the proposed assignee or sublessee to be true and correct, which the proposed assignee or sublessee intends to use, store, handle, treat, generate in or release or dispose of from the Premises, together with copies of all documents relating to such use, storage, handling, treatment, generation, release or disposal of Hazardous Materials by the proposed assignee or subtenant in the Premises or on the Project, prior to the proposed assignment or subletting, including, without limitation: permits; approvals; reports and correspondence; storage and management plans; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); and all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks. Neither Tenant nor any such proposed assignee or subtenant is required, however, to provide Landlord with any portion(s) of the such documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities.

(d) **No Release of Tenant, Sharing of Excess Rents**. Notwithstanding any assignment or subletting, Tenant and any guarantor or surety of Tenant's obligations under this Lease shall at all times remain fully and primarily responsible and liable for the payment of Rent and for compliance with all of Tenant's other obligations under this Lease. If the Rent due and payable by a sublessee or assignee (or a combination of the rental payable under such sublease or assignment plus any bonus or other consideration therefor or incident thereto in any form) exceeds the rental payable under this Lease, (excluding however, any Rent payable under this Section) ("**Excess Rent**"), then Tenant shall be bound and obligated to pay Landlord as Additional Rent hereunder 50% of such Excess Rent within 10 days following receipt thereof by Tenant. If Tenant shall sublet the Premises or any part 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 as assignee and as attorney-in-fact for Tenant, or a receiver for Tenant appointed on Landlord's application, may collect such rent and apply it toward Tenant's obligations under this Lease; except that, until the occurrence of a Default, Tenant shall have the right to collect such rent.

(e) **No Waiver**. The consent by Landlord to an assignment or subletting shall not relieve Tenant or any assignees of this Lease or any sublessees of the Premises from obtaining the consent of Landlord to any further assignment or subletting nor shall it release Tenant or any assignee or sublessee of Tenant from full and primary liability under the Lease. The acceptance of Rent hereunder, or the acceptance of performance of any other term, covenant, or condition thereof, from any other person or entity shall not be deemed to be a waiver of any of the provisions of this Lease or a consent to any subletting, assignment or other transfer of the Premises.

(f) **Prior Conduct of Proposed Transferee**. Notwithstanding any other provision of this Section 22, if (i) the proposed assignee or sublessee of Tenant has been required by any prior landlord, lender or Governmental Authority to take remedial action in connection with Hazardous Materials

contaminating a property, where the contamination resulted from such party's action or use of the property in question, (ii) the proposed assignee or sublessee is subject to an enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority), or (iii) because of the existence of a pre-existing environmental condition in the vicinity of or underlying the Project, the risk that Landlord would be targeted as a responsible party in connection with the remediation of such pre-existing environmental condition would be materially increased or exacerbated by the proposed use of Hazardous Materials by such proposed assignee or sublessee, Landlord shall have the absolute right to refuse to consent to any assignment or subletting to any such party.

23. **Estoppel Certificate**. Tenant shall, within 10 business days of written notice from Landlord, execute, acknowledge and deliver a statement in writing in any form reasonably requested by a proposed lender or purchaser, (i) 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 the rental and other charges are paid in advance, if any, (ii) acknowledging that there are not any uncured defaults on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be requested thereon. Any such statement may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the real property of which the Premises are a part. If Tenant has failed to execute and deliver an estoppel certificate as required pursuant to this Section 23 within 10 business days of written notice from Landlord, Landlord shall deliver a second written notice to Tenant. Tenant's failure to deliver such statement within 5 days after Landlord's delivery of such second notice shall, at the option of Landlord, constitute a Default under this Lease, and, in any event, shall be conclusive 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.

24. **Quiet Enjoyment**. So long as Tenant is not in Default under this Lease, Tenant shall, subject to the terms of this Lease, at all times during the Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord.

25. **Prorations**. All prorations required or permitted to be made hereunder shall be made on the basis of a 360 day year and 30 day months.

26. **Rules and Regulations**. Tenant shall, at all times during the Term and any extension thereof, comply with all reasonable rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Project provided that Landlord has delivered written notice thereof to Tenant. The current rules and regulations are attached hereto as **Exhibit E**. If there is any conflict between said rules and regulations and other provisions of this Lease, the terms and provisions of this Lease shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants in the Project and shall not enforce such rules and regulations in a discriminatory manner.

27. **Subordination**. This Lease and Tenant's interest and rights hereunder are hereby made and shall be subject and subordinate at all times to the lien of any Mortgage now existing or hereafter created on or against the Project or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, without the necessity of any further instrument or act on the part of Tenant; provided, however that so long as there is no Default hereunder, Tenant's right to possession of the Premises shall not be disturbed by the Holder of any such Mortgage. Tenant agrees, at the election of the Holder of any such Mortgage, to attorn to any such Holder. Tenant agrees upon demand to execute, acknowledge and deliver such instruments, confirming such subordination, and such instruments of attornment as shall be requested by any such Holder, provided any such instruments contain appropriate non-disturbance provisions assuring Tenant's quiet enjoyment of the Premises as set forth in Section 24 hereof. Notwithstanding the foregoing, any such Holder may at any time subordinate its Mortgage to this Lease, without Tenant's consent, by notice in

writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution, delivery or recording and in that event such Holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such Mortgage and had been assigned to such Holder. The term "**Mortgage**" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the "**Holder**" of a Mortgage shall be deemed to include the beneficiary under a deed of trust.

28. **Surrender**. Upon the expiration of the Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the same condition as received, subject to any Alterations or Installations permitted by Landlord to remain in the Premises, free of Hazardous Materials brought upon, kept, used, stored, handled, treated, generated in, or released or disposed of from, the Premises by any person other than a Landlord Party (collectively, "**Tenant HazMat Operations**") and released of all Hazardous Materials Clearances, broom clean, ordinary wear and tear and casualty loss and condemnation covered by Sections 18 and 19 excepted. At least 3 months prior to the surrender of the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Governmental Authority) to be taken by Tenant in order to surrender the Premises (including any Installations permitted by Landlord to remain in the Premises) at the expiration or earlier termination of the Term, free from any residual impact from the Tenant HazMat Operations and otherwise released for unrestricted use and occupancy (the "**Surrender Plan**"). Such Surrender Plan shall be accompanied by a current listing of (i) all Hazardous Materials licenses and permits held by or on behalf of any Tenant Party with respect to the Premises, and (ii) all Hazardous Materials used, stored, handled, treated, generated, released or disposed of from the Premises, and shall be subject to the review and approval of Landlord's environmental consultant. In connection with the review and approval of the Surrender Plan, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning Tenant HazMat Operations as Landlord shall request. On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Surrender Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant HazMat Operations. Tenant shall reimburse Landlord, as Additional Rent, for the actual out-of pocket expense incurred by Landlord for Landlord's environmental consultant to review and approve the Surrender Plan and to visit the Premises and verify satisfactory completion of the same, which cost shall not exceed $2,000. Landlord shall have the unrestricted right to deliver such Surrender Plan and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties.

If Tenant shall fail to prepare or submit a Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address any residual effect of Tenant HazMat Operations in, on or about the Premises, Landlord shall have the right to take such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Project are surrendered free from any residual impact from Tenant HazMat Operations, the cost of which actions shall be reimbursed by Tenant as Additional Rent, without regard to the limitation set forth in the first paragraph of this Section 28.

Tenant shall immediately return to Landlord all keys and/or access cards to parking, the Project, restrooms or all or any portion of the Premises furnished to or otherwise procured by Tenant. If any such access card or key is lost, Tenant shall pay to Landlord, at Landlord's election, either the cost of replacing such lost access card or key (not to exceed $10 per card or $5 per key)or the cost of reprogramming the access security system in which such access card was used or changing the lock or locks opened by such lost key. Any Tenant's Property, Alterations and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and/or disposition of such property. All obligations of Tenant hereunder not fully performed as of the termination of the Term, including the obligations of Tenant under Section 30 hereof,

shall survive the expiration or earlier termination of the Term, including, without limitation, indemnity obligations, payment obligations with respect to Rent and obligations concerning the condition and repair of the Premises.

29. **Waiver of Jury Trial**. TO THE EXTENT PERMITTED BY LAW, TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

30. **Environmental Requirements**.

(a) **Prohibition/Compliance/Indemnity**. Tenant shall not cause or permit any Hazardous Materials (as hereinafter defined) to be brought upon, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises or the Project in violation of applicable Environmental Requirements (as hereinafter defined) by Tenant or any Tenant Party. If Tenant breaches the obligation stated in the preceding sentence, or if the presence of Hazardous Materials in the Premises during the Term or any holding over results in contamination of the Premises, the Project or any adjacent property or if contamination of the Premises, the Project or any adjacent property by Hazardous Materials brought into, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises by anyone other than Landlord and Landlord's employees, agents and contractors otherwise occurs during the Term or any holding over, Tenant hereby indemnifies and shall defend and hold Landlord, its officers, directors, employees, agents and contractors harmless from any and all actions (including, without limitation, remedial or enforcement actions of any kind, administrative or judicial proceedings, and orders or judgments arising out of or resulting therefrom), costs, claims, damages (including, without limitation, punitive damages and damages based upon diminution in value of the Premises or the Project, or the loss of, or restriction on, use of the Premises or any portion of the Project), expenses (including, without limitation, attorneys', consultants' and experts' fees, court costs and amounts paid in settlement of any claims or actions), fines, forfeitures or other civil, administrative or criminal penalties, injunctive or other relief (whether or not based upon personal injury, property damage, or contamination of, or adverse effects upon, the environment, water tables or natural resources), liabilities or losses (collectively, "**Environmental Claims**") which arise during or after the Term as a result of such contamination. This indemnification of Landlord by Tenant includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, treatment, remedial, removal, or restoration work required by any federal, state or local Governmental Authority because of Hazardous Materials present in the air, soil or ground water above, on, or under the Premises. Without limiting the foregoing, if the presence of any Hazardous Materials on the Premises, the Building, the Project or any adjacent property caused or permitted by Tenant or any Tenant Party results in any contamination of the Premises, the Building, the Project or any adjacent property, Tenant shall promptly take all actions at its sole expense and in accordance with applicable Environmental Requirements as are reasonably necessary to return the Premises, the Building, the Project or any adjacent property to the condition existing prior to the time of such contamination, provided that Landlord's approval of such action shall first be obtained, which approval shall not unreasonably be withheld so long as such actions would not potentially have any material adverse long-term or short-term effect on the Premises, the Building or the Project.

(b) **Business**. Landlord acknowledges that it is not the intent of this Section 30 to prohibit Tenant from using the Premises for the Permitted Use. Tenant may operate its business according to prudent industry practices so long as the use or presence of Hazardous Materials is strictly and properly monitored according to all then applicable Environmental Requirements. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord prior to the Commencement Date a list identifying each type of Hazardous Materials to be brought upon, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises and setting forth any and all governmental approvals or permits required in connection with the presence, use, storage, handling, treatment, generation, release or disposal of such Hazardous Materials

on or from the Premises ("**Hazardous Materials List**"). Tenant shall deliver to Landlord an updated Hazardous Materials List at least once a year and shall also deliver an updated list before any new Hazardous Material is brought onto, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises. Tenant shall deliver to Landlord true and correct copies of the following documents (the "**Haz Mat Documents**") relating to the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials prior to the Commencement Date, or if unavailable at that time, concurrent with the receipt from or submission to a Governmental Authority: permits; approvals; reports and correspondence; storage and management plans, notice of violations of any Legal Requirements; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given Tenant its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks; and a Surrender Plan (to the extent surrender in accordance with Section 28 cannot be accomplished in 3 months). Tenant is not required, however, to provide Landlord with any portion(s) of the Haz Mat Documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities. It is not the intent of this Section to provide Landlord with information which could be detrimental to Tenant's business should such information become possessed by Tenant's competitors.

(c) **Tenant Representation and Warranty**. Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor, to Tenant's knowledge, any of its legal predecessors has been required by any prior landlord, lender or Governmental Authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant or such predecessor or resulted from Tenant's or such predecessor's action or use of the property in question, and (ii) Tenant is not subject to any enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority). If Landlord determines that this representation and warranty was not true as of the date of this Lease, Landlord shall have the right to terminate this Lease in Landlord's sole and absolute discretion.

(d) **Testing**. Landlord shall have the right to conduct annual tests of the Premises to determine whether any contamination of the Premises or the Project has occurred as a result of Tenant's use. Tenant shall be required to pay the cost of such annual test of the Premises; provided, however, that if Tenant conducts its own tests of the Premises using third party contractors and test procedures acceptable to Landlord which tests are certified to Landlord, Landlord shall accept such tests in lieu of the annual tests to be paid for by Tenant. In addition, at any time, and from time to time, prior to the expiration or earlier termination of the Term, Landlord shall have the right to conduct appropriate tests of the Premises and the Project to determine if contamination has occurred as a result of Tenant's use of the Premises. In connection with such testing, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such non-proprietary information concerning the use of Hazardous Materials in or about the Premises by Tenant or any Tenant Party. If contamination has occurred for which Tenant is liable under this Section 30, Tenant shall pay all costs to conduct such tests. If no such contamination is found, Landlord shall pay the costs of such tests (which shall not constitute an Operating Expense). Landlord shall provide Tenant with a copy of all third party, non-confidential reports and tests of the Premises made by or on behalf of Landlord during the Term without representation or warranty and subject to a confidentiality agreement. Tenant shall, at its sole cost and expense, promptly and satisfactorily remediate any environmental conditions identified by such testing in accordance with all Environmental Requirements. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights which Landlord may have against Tenant.

(e) **Control Areas**. Tenant shall be allowed to utilize up to its pro rata share of the Hazardous Materials inventory within any control area or zone (located within the Premises), as designated by the applicable building code, for chemical use or storage. As used in the preceding sentence, Tenant's pro rata share of any control areas or zones located within the Premises shall be

determined based on the rentable square footage that Tenant leases within the applicable control area or zone. For purposes of example only, if a control area or zone contains 10,000 rentable square feet and 2,000 rentable square feet of a tenant's premises are located within such control area or zone (while such premises as a whole contains 5,000 rentable square feet), the applicable tenant's pro rata share of such control area would be 20%.

(f) **Underground Tanks**. If underground or other storage tanks storing Hazardous Materials located on the Premises or the Project are used by Tenant or are hereafter placed on the Premises or the Project by Tenant, Tenant shall install, use, monitor, operate, maintain, upgrade and manage such storage tanks, maintain appropriate records, obtain and maintain appropriate insurance, implement reporting procedures, properly close any underground storage tanks, and take or cause to be taken all other actions necessary or required under applicable state and federal Legal Requirements, as such now exists or may hereafter be adopted or amended in connection with the installation, use, maintenance, management, operation, upgrading and closure of such storage tanks.

(g) **Tenant's Obligations**. Tenant's obligations under this Section 30 shall survive the expiration or earlier termination of the Lease. During any period of time after the expiration or earlier termination of this Lease required by Tenant or Landlord to complete the removal from the Premises of any Hazardous Materials (including, without limitation, the release and termination of any licenses or permits restricting the use of the Premises and the completion of the approved Surrender Plan), Tenant shall continue to pay the full Rent in accordance with this Lease for any portion of the Premises not relet by Landlord in Landlord's sole discretion, which Rent shall be prorated daily.

(h) **Definitions**. As used herein, the term "**Environmental Requirements**" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, orders or other similar enactments of any Governmental Authority regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the Project, or the environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; and all state and local counterparts thereto, and any regulations or policies promulgated or issued thereunder. As used herein, the term "**Hazardous Materials**" means and includes any substance, material, waste, pollutant, or contaminant listed or defined as hazardous or toxic, or regulated by reason of its impact or potential impact on humans, animals and/or the environment under any Environmental Requirements, asbestos and petroleum, including crude oil or any fraction thereof, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). As defined in Environmental Requirements, Tenant is and shall be deemed to be the "**operator**" of Tenant's "**facility**" and the "**owner**" of all Hazardous Materials brought on the Premises by Tenant or any Tenant Party, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

31. **Tenant's Remedies/Limitation of Liability**. Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within 30 days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of 30 days, then after such period of time as is reasonably necessary). Upon any default by Landlord, Tenant shall give notice by registered or certified mail to any Holder of a Mortgage covering the Premises and to any landlord of any lease of property in or on which the Premises are located and Tenant shall offer such Holder and/or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided Landlord shall have furnished to Tenant in writing the names and addresses of all such persons who are to receive such notices. All obligations of Landlord hereunder shall be construed as covenants, not conditions; and, except as may be otherwise expressly provided in this Lease, Tenant may not terminate this Lease for breach of Landlord's obligations hereunder.

All obligations of Landlord under this Lease will be binding upon Landlord only during the period of its ownership of the Premises and not thereafter. The term "**Landlord**" in this Lease shall mean only the owner for the time being of the Premises. Upon the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord

thereafter accruing, but such obligations shall be binding during the Term upon each new owner for the duration of such owner's ownership.

32. **Inspection and Access**. Landlord and its agents, representatives, and contractors may enter the Premises at any reasonable time to inspect the Premises and to make such repairs as may be required or permitted pursuant to this Lease and for any other business purpose. Landlord and Landlord's representatives may enter the Premises during business hours on not less than 48 hours advance written notice (except in the case of emergencies in which case no such notice shall be required and such entry may be at any time) for the purpose of effecting any such repairs, inspecting the Premises, showing the Premises to prospective purchasers and, during the last year of the Term, to prospective tenants or for any other business purpose. Landlord may erect a suitable sign on the Premises stating the Premises are available to let or that the Project is available for sale. Landlord may grant easements, make public dedications, designate Common Areas and create restrictions on or about the Premises, provided that no such easement, dedication, designation or restriction materially, adversely affects Tenant's use or occupancy of the Premises for the Permitted Use. At Landlord's request, Tenant shall execute such instruments as may be necessary for such easements, dedications or restrictions. Tenant shall at all times, except in the case of emergencies, have the right to escort Landlord or its agents, representatives, contractors or guests while the same are in the Premises, provided such escort does not materially and adversely affect Landlord's access rights hereunder. Landlord shall use reasonable efforts to comply with Tenant's reasonable security, confidentiality and safety requirements with respect to entering restricted portions of the Premises; provided, however, that Tenant has notified Landlord of such security, confidentiality and safety requirements simultaneously with or prior to Landlord's entry into the Premises.

33. **Security**. Tenant acknowledges and agrees that security devices and services, if any, while intended to deter crime may not in given instances prevent theft or other criminal acts and that Landlord is not providing any security services with respect to the Premises. Tenant agrees that Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises. Tenant shall be solely responsible for the personal safety of Tenant's officers, employees, agents, contractors, guests and invitees while any such person is in, on or about the Premises and/or the Project. Tenant shall at Tenant's cost obtain insurance coverage to the extent Tenant desires protection against such criminal acts. Tenant shall have the right to install, prior to the commencement Date or any other time during the Term, as an Alteration pursuant to Section 12, an access control system or security system within the Premises, at Tenant's sole cost and expense, subject to Landlord's prior written approval, which approval shall not be unreasonably withheld.

34. **Force Majeure**. Landlord shall not responsible or liable for delays in the performance of its obligations hereunder when caused by, related to, or arising out of acts of God, sinkholes or subsidence, strikes, lockouts, or other labor disputes, embargoes, quarantines, weather, national, regional, or local disasters, calamities, or catastrophes, inability to obtain labor or materials (or reasonable substitutes therefor) at reasonable costs or failure of, or inability to obtain, utilities necessary for performance, governmental restrictions, orders, limitations, regulations, or controls, national emergencies, delay in issuance or revocation of permits, enemy or hostile governmental action, terrorism, insurrection, riots, civil disturbance or commotion, fire or other casualty, and other causes or events beyond the reasonable control of Landlord ("**Force Majeure**").

35. **Brokers**. Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively, "**Broker**") in connection with this transaction and that no Broker brought about this transaction, other than Synergy Commercial Advisors and Cresa Carolinas. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any Broker, other than the broker, if any named in this Section 35, claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction.

36. **Limitation on Landlord's Liability**. NOTWITHSTANDING ANYTHING SET FORTH HEREIN OR IN ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT TO THE CONTRARY: (A) LANDLORD SHALL NOT BE LIABLE TO TENANT OR ANY OTHER PERSON FOR (AND TENANT AND EACH SUCH OTHER PERSON ASSUME ALL RISK OF) LOSS, DAMAGE OR INJURY, WHETHER ACTUAL OR CONSEQUENTIAL TO: TENANT'S PERSONAL PROPERTY OF EVERY KIND AND DESCRIPTION, INCLUDING, WITHOUT LIMITATION TRADE FIXTURES, EQUIPMENT, INVENTORY, SCIENTIFIC RESEARCH, SCIENTIFIC EXPERIMENTS, LABORATORY ANIMALS, PRODUCT, SPECIMENS, SAMPLES, AND/OR SCIENTIFIC, BUSINESS, ACCOUNTING AND OTHER RECORDS OF EVERY KIND AND DESCRIPTION KEPT AT THE PREMISES AND ANY AND ALL INCOME DERIVED OR DERIVABLE THEREFROM; (B) THERE SHALL BE NO PERSONAL RECOURSE TO LANDLORD FOR ANY ACT OR OCCURRENCE IN, ON OR ABOUT THE PREMISES OR ARISING IN ANY WAY UNDER THIS LEASE OR ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND ANY LIABILITY OF LANDLORD HEREUNDER SHALL BE STRICTLY LIMITED SOLELY TO LANDLORD'S INTEREST IN THE PROJECT OR ANY PROCEEDS FROM SALE OR CONDEMNATION THEREOF AND ANY INSURANCE PROCEEDS PAYABLE IN RESPECT OF LANDLORD'S INTEREST IN THE PROJECT OR IN CONNECTION WITH ANY SUCH LOSS; AND (C) IN NO EVENT SHALL ANY PERSONAL LIABILITY BE ASSERTED AGAINST LANDLORD IN CONNECTION WITH THIS LEASE NOR SHALL ANY RECOURSE BE HAD TO ANY OTHER PROPERTY OR ASSETS OF LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS. UNDER NO CIRCUMSTANCES SHALL LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS BE LIABLE FOR INJURY TO TENANT'S BUSINESS OR FOR ANY LOSS OF INCOME OR PROFIT THEREFROM.

37. **Severability**. If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in effect to such illegal, invalid or unenforceable clause or provision as shall be legal, valid and enforceable.

38. **Signs; Exterior Appearance**. Tenant shall not, without the prior written consent of Landlord, which may be granted or withheld in Landlord's sole discretion: (i) attach any awnings, exterior lights, decorations, balloons, flags, pennants, banners, painting or other projection to any outside wall of the Project, (ii) use any curtains, blinds, shades or screens other than Landlord's standard window coverings, (iii) coat or otherwise sunscreen the interior or exterior of any windows, (iv) place any bottles, parcels, or other articles on the window sills, (v) place any equipment, furniture or other items of personal property on any exterior balcony, or (vi) paint, affix or exhibit on any part of the Premises or the Project any signs, notices, window or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Premises. Suite entry signage and Tenant's name on the directory tablet shall be inscribed, painted or affixed for Tenant by Landlord at the sole cost and expense of Landlord, and shall be of a size, color and type acceptable to Landlord. Nothing may be placed on the exterior of corridor walls or corridor doors other than Landlord's standard lettering. The directory tablet shall be provided exclusively for the display of the name and location of tenants.

Tenant shall have the non-exclusive right to display, at Landlord's cost, signage bearing Tenant's name on the monument sign at the Project ("**Monument Sign**"). Tenant further acknowledges and agrees that Tenant's signage on the Monument Sign including, without limitation, the location, size, color and type, shall be subject to Landlord's prior written approval, and shall be consistent with Landlord's signage program at the Project and applicable Legal Requirements. Tenant shall be responsible, at Tenant's sole cost and expense, for the maintenance of Tenant's signage on the Monument Sign, for the removal of Tenant's signage from the Monument Sign at the expiration or earlier termination of this Lease and for the repair all damage resulting from such removal.

39. **Right to Expand**.

(a) **Expansion in the Building**. Tenant shall, during the Base Term, have the right, but not the obligation, to expand the Premises (the "**Expansion Right**") to include the Expansion Space upon the terms and conditions set forth in this Section. For purposes of this Section 39(a), "**Expansion Space**" shall mean that certain portion of the Building, consisting of approximately 4,764 rentable square feet as shown on **Exhibit G** attached hereto, to the extent that such Expansion Space is not occupied by a tenant or which is occupied by an existing tenant whose lease is expiring within 6 months or less and such tenant does not wish to renew (whether or not such tenant has a right to renew) its occupancy of such space. If the Expansion Space becomes available, Landlord shall, at such time as Landlord shall elect so long as Tenant's rights hereunder are preserved, deliver to Tenant written notice (the "**Expansion Notice**") of the availability of such Expansion Space, together with the terms and conditions on which Landlord is prepared to lease Tenant such Expansion Space. Tenant shall have 5 business days following delivery of the Expansion Notice to deliver to Landlord written notification of Tenant's exercise of the Expansion Right with respect to the Space ("**Exercise Notice**"). Tenant shall be entitled to lease such Expansion Space upon the terms and conditions set forth in the Expansion Notice. Notwithstanding anything to the contrary contained herein, Tenant shall have no right to exercise the Expansion Right and the provisions of this Section 39(a) shall no longer apply after the date that is 9 months prior to the expiration of the Base Term if Tenant has not exercised its Extension Right pursuant to Section 40. If Tenant fails to deliver an Exercise Notice to Landlord for the Expansion Space within the required 5 business day period, Tenant shall be deemed to have waived its rights under this Section 39(a) to lease the Expansion Space, and Landlord shall have the right to lease the Expansion Space to any third party on any terms and conditions acceptable to Landlord.

(b) **Amended Lease**. If: (i) Tenant fails to timely deliver an Exercise Notice, or (ii) after the expiration of a period of 15 business days after Landlord's delivery to Tenant of a lease amendment for Tenant's lease of the Expansion Space no lease amendment for the Expansion Space acceptable to both parties each in their sole and absolute discretion, has been executed, Tenant shall, notwithstanding anything to the contrary contained herein, be deemed to have waived its right to lease such Expansion Space. Landlord and Tenant agree to use reasonable good faith efforts to negotiate such amendment.

(c) **Exceptions**. Notwithstanding the above, the Expansion Right shall, at Landlord's option, not be in effect and may not be exercised by Tenant:

(i) during any period of time that Tenant is in Default under any provision of the Lease; or

(ii) if Tenant has been in Default under any provision of the Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period prior to the date on which Tenant seeks to exercise the Expansion Right.

(d) **Termination**. The Expansion Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Expansion Right, if, after such exercise, but prior to the commencement date of the lease of such Expansion Space, (i) Tenant fails to timely cure any default by Tenant under the Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Expansion Right to the date of the commencement of the lease of the Expansion Space, whether or not such Defaults are cured.

(e) **Rights Personal**. The Expansion Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease, except that it may be assigned in connection with any Permitted Assignment of this Lease.

(f) **No Extensions**. The period of time within which the Expansion Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Expansion Right.

40. **Right to Extend Term**. Tenant shall have the right to extend the Term of the Lease upon the following terms and conditions:

(a) **Extension Rights**. Tenant shall have 1 right (an "**Extension Right**") to extend the term of this Lease for 5 years (an "**Extension Term**") on the same terms and conditions as this Lease (other than with respect to Base Rent and the Work Letter) by giving Landlord written notice of its election to exercise the Extension Right at least 9 months prior to the expiration of the Base Term of the Lease.

Upon the commencement of the Extension Term, Base Rent shall be payable at the Market Rate (as defined below). Base Rent shall thereafter be adjusted on each annual anniversary of the commencement of such Extension Term by a percentage as determined by Landlord and agreed to by Tenant at the time the Market Rate is determined. As used herein, "**Market Rate**" shall mean the then market rental rate as determined by Landlord and agreed to by Tenant, which shall in no event be less than the Base Rent payable as of the date immediately preceding the commencement of such Extension Term increased by the Rent Adjustment Percentage multiplied by such Base Rent.

If, on or before the date which is 180 days prior to the expiration of the Base Term of this Lease, Tenant has not agreed with Landlord's determination of the Market Rate and the rent escalations during the Extension Term after negotiating in good faith, Tenant shall be deemed to have elected arbitration as described in Section 40(b). Tenant acknowledges and agrees that, if Tenant has elected to exercise the Extension Right by delivering notice to Landlord as required in this Section 40(a), Tenant shall have no right thereafter to rescind or elect not to extend the term of the Lease for the Extension Term.

(b) **Arbitration**.

(i) Within 10 days of Tenant's notice to Landlord of its election (or deemed election) to arbitrate Market Rate and escalations, each party shall deliver to the other a proposal containing the Market Rate and escalations that the submitting party believes to be correct ("**Extension Proposal**"). If either party fails to timely submit an Extension Proposal, the other party's submitted proposal shall determine the Base Rent and escalations for the Extension Term. If both parties submit Extension Proposals, then Landlord and Tenant shall meet within 7 days after delivery of the last Extension Proposal and make a good faith attempt to mutually appoint a single Arbitrator (and defined below) to determine the Market Rate and escalations. If Landlord and Tenant are unable to agree upon a single Arbitrator, then each shall, by written notice delivered to the other within 10 days after the meeting, select an Arbitrator. If either party fails to timely give notice of its selection for an Arbitrator, the other party's submitted proposal shall determine the Base Rent for the Extension Term. The 2 Arbitrators so appointed shall, within 5 business days after their appointment, appoint a third Arbitrator. If the 2 Arbitrators so selected cannot agree on the selection of the third Arbitrator within the time above specified, then either party, on behalf of both parties, may request such appointment of such third Arbitrator by application to any state court of general jurisdiction in the jurisdiction in which the Premises are located, upon 10 days prior written notice to the other party of such intent.

(ii) The decision of the Arbitrator(s) shall be made within 30 days after the appointment of a single Arbitrator or the third Arbitrator, as applicable. The decision of the single Arbitrator shall be final and binding upon the parties. The average of the two closest Arbitrators in a three Arbitrator panel shall be final and binding upon the parties. Each party shall pay the fees and expenses of the Arbitrator appointed by or on behalf of such party and the fees and expenses of the third Arbitrator shall be borne equally by both parties. If the Market Rate and escalations are not determined by the first day of the Extension Term, then Tenant shall pay Landlord Base Rent in an amount equal to the Base Rent in effect immediately prior to the Extension Term and increased by the Rent Adjustment Percentage until such determination is made. After the determination of the Market Rate and escalations, the parties shall make any necessary adjustments to such payments made by Tenant. Landlord and Tenant shall then execute an amendment recognizing the Market Rate and escalations for the Extension Term.

(iii) An "**Arbitrator**" shall be any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than 10 years of experience in the appraisal of improved office and high tech industrial real estate in the greater Raleigh-Durham metropolitan area, or (B) a licensed commercial real estate broker with not less than 15 years experience representing landlords and/or tenants in the leasing of high tech or life sciences space in the greater Raleigh-Durham metropolitan area, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

(c) **Rights Personal**. The Extension Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease.

(d) **Exceptions**. Notwithstanding anything set forth above to the contrary, at Landlord's option, the Extension Right shall not be in effect and Tenant may not exercise the Extension Right:

(i) during any period of time that Tenant is in Default under any provision of this Lease; or

(ii) if Tenant has been in Default under any provision of this Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period immediately prior to the date that Tenant intends to exercise an Extension Right, whether or not the Defaults are cured.

(e) **No Extensions**. The period of time within which the Extension Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Extension Right.

(f) **Termination**. The Extension Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Extension Right, if, after such exercise, but prior to the commencement date of the Extension Term, (i) Tenant fails to timely cure any default by Tenant under this Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Extension Right to the date of the commencement of the Extension Term, whether or not such Defaults are cured.

41. **Early Termination Right**. Tenant shall have the right, subject to the provisions of this Section 41, to terminate the Lease ("**Termination Right**") with respect to the entire Premises only as of the date that is 36 months after the Rent Commencement Date ("**Early Termination Date**"), so long as Tenant delivers to Landlord (i) a written notice ("**Termination Notice**"), of its exercise of its Termination Right on or before the date that is 6 months prior to the Early Termination Date, and (ii) concurrent with Tenant's delivery to Landlord of the Termination Notice, deliver to Landlord the sum of (1) the unamortized amount of the costs incurred by Landlord in connection with Landlord's Work, and (2) all of the unamortized leasing commissions paid by Landlord in connection with Tenant's lease of the Premises (collectively, the "**Early Termination Payment**"). If Tenant timely and properly exercises the Termination Right, Tenant shall vacate the Premises and deliver possession thereof to Landlord in the condition required by the terms of the Lease on or before the Early Termination Date and Tenant shall have no further obligations under the Lease except for those accruing prior to the Early Termination Date and those which, pursuant to the terms of the Lease, survive the expiration or early termination of the Lease. In the event that Tenant either (x) does not deliver to Landlord the Termination Notice and the Early Termination Payment within the time period provided in this Section 41, or (y) if Tenant exercises its Expansion Right pursuant to Section 39, Tenant shall be deemed to have waived its Termination Right and the provisions of this Section 41 shall have no further force or effect.

42. **Intentionally Omitted**.

43. **Miscellaneous**.

(a) **Notices**. All notices or other communications between the parties shall be in writing and shall be deemed duly given upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth above. Landlord and Tenant may from time to time by written notice to the other designate another address for receipt of future notices.

(b) **Joint and Several Liability**. If and when included within the term "**Tenant**," as used in this instrument, there is more than one person or entity, each shall be jointly and severally liable for the obligations of Tenant.

(c) **Financial Information**. Tenant shall furnish Landlord with true and complete copies of (i) Tenant's most recent audited annual financial statements within 90 days of the end of each of Tenant's fiscal years during the Term, (ii) Tenant's most recent unaudited quarterly financial statements within 45 days of the end of each of Tenant's first three fiscal quarters of each of Tenant's fiscal years during the Term, (iii) at Landlord's request from time to time, updated business plans, including cash flow projections and/or pro forma balance sheets and income statements, all of which shall be treated by Landlord as confidential information belonging to Tenant, (iv) corporate brochures and/or profiles prepared by Tenant for prospective investors, and (v) any other financial information or summaries that Tenant typically provides to its lenders or shareholders. So long as Tenant is a "public company" and its financial information is publicly available, then the foregoing delivery requirements of this Section 43(c) shall not apply.

(d) **Recordation**. This Lease shall in no event be filed by or on behalf of Tenant in any public record. Notwithstanding the foregoing, upon Tenant's request and at Tenant's sole cost and expense, Landlord shall execute and properly notarize a memorandum of lease prepared by Tenant which memorandum shall contain only the following information and any other additional information that may be required by applicable law: (i) the names of the parties to this Lease, (ii) description of the Premises and the Project, and (iii) the Term. Tenant shall file such memorandum of lease, at Tenant's sole cost. If Tenant fails, after written request from Landlord, to record a termination of the memorandum on the expiration or earlier termination of this Lease, Tenant shall be responsible for any damages suffered by Landlord (from any cause including, without limitation, resulting from any indemnities or certifications which may be made by Landlord in favor of third parties). The provisions of this Section 43(d) shall survive the expiration or earlier termination of this Lease.

(e) **Interpretation**. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

(f) **Not Binding Until Executed**. The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

(g) **Limitations on Interest**. It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, if the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the

execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

(h) **Choice of Law**. Construction and interpretation of this Lease shall be governed by the internal laws of the state in which the Premises are located, excluding any principles of conflicts of laws.

(i) **Time**. Time is of the essence as to the performance of Tenant's obligations under this Lease.

(j) **OFAC**. Tenant, and all beneficial owners of Tenant, are currently (a) in compliance with and shall at all times during the Term of this Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of this Lease be listed on, the Specially Designated Nationals and Blocked Persons List maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

(k) **Incorporation by Reference**. All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. If there is any conflict between such exhibits or addenda and the terms of this Lease, such exhibits or addenda shall control.

(l) **Entire Agreement**. This Lease, including the exhibits attached hereto, constitutes the entire agreement between Landlord and Tenant pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings, letters of intent, negotiations and discussions, whether oral or written, of the parties, and there are no warranties, representations or other agreements, express or implied, made to either party by the other party in connection with the subject matter hereof except as specifically set forth herein.

(m) **No Accord and Satisfaction**. No payment by Tenant or receipt by Landlord of a lesser amount than the monthly installment of Base Rent or any Additional Rent will be other than on account of the earliest stipulated Base Rent and Additional Rent, nor will any endorsement or statement on any check or letter accompanying a check for payment of any Base Rent or Additional Rent be an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or to pursue any other remedy provided in this Lease.

(n) **Hazardous Activities**. Notwithstanding any other provision of this Lease, Landlord, for itself and its employees, agents and contractors, reserves the right to refuse to perform any repairs or services in any portion of the Premises which, pursuant to Tenant's routine safety guidelines, practices or custom or prudent industry practices, require any form of protective clothing or equipment other than safety glasses. In any such case, Tenant shall contract with parties who are acceptable to Landlord, in Landlord's reasonable discretion, for all such repairs and services, and Landlord shall, to the extent required, equitably adjust Tenant's Share of Operating Expenses in respect of such repairs or services to reflect that Landlord is not providing such repairs or services to Tenant.

[Signatures are on next page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

HEAT BIOLOGICS, INC.,
a Delaware corporation

By: _____
Its:_____

LANDLORD:

ARE-100/800/801 CAPITOLA, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, L.P.,
a Delaware limited partnership,
managing member

By: ARE-QRS CORP.,
a Maryland corporation,
general partner

By: _____
Name: _____
Title:_____

EXHIBIT A TO LEASE

DESCRIPTION OF PREMISES

EXHIBIT B TO LEASE

DESCRIPTION OF PROJECT

EXHIBIT C TO LEASE

WORK LETTER

THIS OFFICE PREMISES WORK LETTER dated _____, 2014 (this "**Work Letter**") is made and entered into by and between **ARE-100/800/801 CAPITOLA, LLC**, a Delaware limited liability company ("**Landlord**"), and **HEAT BIOLOGICS, INC.**, a Delaware corporation ("**Tenant**"), and is attached to and made a part of the Lease dated _____, 2014 (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

1. **General Requirements**.

(a) **Tenant's Authorized Representative**. Tenant designates Jennifer Kelly and Matt Czajkowski (either such individual acting alone, "**Tenant's Representative**") as the only persons authorized to act for Tenant pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any request, approval, inquiry or other communication ("**Communication**") from or on behalf of Tenant in connection with this Work Letter unless such Communication is in writing from Tenant's Representative. Tenant may change either Tenant's Representative at any time upon not less than 5 business days advance written notice to Landlord. Neither Tenant nor Tenant's Representative shall be authorized to direct Landlord's contractors in the performance of Landlord's Work (as hereinafter defined).

(b) **Landlord's Authorized Representative**. Landlord designates Oliver Sherrill and Melissa Verdery (either such individual acting alone, "**Landlord's Representative**") as the only persons authorized to act for Landlord pursuant to this Work Letter. Tenant shall not be obligated to respond to or act upon any request, approval, inquiry or other Communication from or on behalf of Landlord in connection with this Work Letter unless such Communication is in writing from Landlord's Representative. Landlord may change either Landlord's Representative at any time upon not less than 5 business days advance written notice to Tenant. Landlord's Representative shall be the sole persons authorized to direct Landlord's contractors in the performance of Landlord's Work.

(c) **Architects, Consultants and Contractors**. Landlord and Tenant hereby acknowledge and agree that: (i) the general contractor and any subcontractors for the Tenant Improvements shall be selected by Landlord, subject to Tenant's approval, which approval shall not be unreasonably withheld, conditioned or delayed, and (ii) Integrated Design shall be the architect (the "**TI Architect**") for the Tenant Improvements.

2. **Tenant Improvements**.

(a) **Tenant Improvements Defined**. As used herein, "**Tenant Improvements**" shall mean all improvements to the Project of a fixed and permanent nature as shown on the TI Construction Drawings, as defined in Section 2(c) below. Other than Landlord's Work (as defined in Section 3(a) below, Landlord shall not have any obligation whatsoever with respect to the finishing of the Premises for Tenant's use and occupancy.

(b) **Tenant's Space Plans**. Landlord and Tenant acknowledge and agree that the plan attached hereto as **Schedule 1** (the "**Space Plan**") has been approved by both Landlord and Tenant. Landlord and Tenant further acknowledge and agree that any changes to the Space Plan constitute a Change Request the cost of which changes shall be paid for by Tenant. Tenant shall be solely responsible for all costs incurred by Landlord to alter the Building (or Landlord's plans for the Building) as a result of Tenant's requested changes.

(c) **Working Drawings**. Landlord shall cause the TI Architect to prepare and deliver to Tenant for review and comment construction plans, specifications and drawings for the Tenant Improvements ("**TI Construction Drawings**"), which TI Construction Drawings shall be prepared substantially in accordance with the Space Plan. Tenant shall be solely responsible for ensuring that the

TI Construction Drawings reflect Tenant's requirements for the Tenant Improvements. Tenant shall deliver its written comments on the TI Construction Drawings to Landlord not later than 5 business days after Tenant's receipt of the same; provided, however, that Tenant may not disapprove any matter that is consistent with the Space Plan without submitting a Change Request. Landlord and the TI Architect shall consider all such comments in good faith and shall, within 10 business days after receipt, notify Tenant how Landlord proposes to respond to such comments, but Tenant's review rights pursuant to the foregoing sentence shall not delay the design or construction schedule for the Tenant Improvements. Any disputes in connection with such comments shall be resolved in accordance with Section 2(d) hereof. Provided that the design reflected in the TI Construction Drawings is consistent with the Space Plan, Tenant shall approve the TI Construction Drawings submitted by Landlord, unless Tenant submits a Change Request. Once approved by Tenant, subject to the provisions of Section 4 below, Landlord shall not materially modify the TI Construction Drawings except as may be reasonably required in connection with the issuance of the TI Permit (as defined in Section 3(b) below).

(d) **Approval and Completion**. It is hereby acknowledged by Landlord and Tenant that the TI Construction Drawings must be completed and approved no later than December 6, 2013, in order for the Landlord's Work to be Substantially Completed by the Target Commencement Date. Upon any dispute regarding the design of the Tenant Improvements, which is not settled within 10 business days after notice of such dispute is delivered by one party to the other, Tenant may make the final decision regarding the design of the Tenant Improvements, provided (i) Tenant acts reasonably and such final decision is either consistent with or a compromise between Landlord's and Tenant's positions with respect to such dispute, (ii) that all costs and expenses resulting from any such decision by Tenant shall be payable by Tenant, and (iii) Tenant's decision will not affect the base Building, structural components of the Building or any Building systems. Any changes to the TI Construction Drawings following Landlord's and Tenant's approval of same requested by Tenant shall be processed as provided in Section 4 hereof.

3. **Performance of Landlord's Work**.

(a) **Definition of Landlord's Work**. As used herein, "**Landlord's Work**" shall mean the work of constructing the Tenant Improvements.

(b) **Commencement and Permitting**. Landlord shall commence construction of the Tenant Improvements upon obtaining a building permit (the "**TI Permit**") authorizing the construction of the Tenant Improvements consistent with the TI Construction Drawings approved by Tenant. The cost of obtaining the TI Permit shall be payable by Landlord. Tenant shall assist Landlord in obtaining the TI Permit. If any Governmental Authority having jurisdiction over the construction of Landlord's Work or any portion thereof shall impose terms or conditions upon the construction thereof that: (i) are inconsistent with Landlord's obligations hereunder, (ii) increase the cost of constructing Landlord's Work, or (iii) will materially delay the construction of Landlord's Work, Landlord and Tenant shall reasonably and in good faith seek means by which to mitigate or eliminate any such adverse terms and conditions.

(c) **Completion of Landlord's Work**. Landlord shall substantially complete or cause to be substantially completed Landlord's Work in a good and workmanlike manner, in accordance with the TI Permit subject, in each case, to Minor Variations and normal "punch list" items of a non-material nature that do not interfere with the use of the Premises ("**Substantial Completion**" or "**Substantially Complete**"). Notwithstanding anything to the contrary contained herein, any Minor Variations not completed as of the Substantial Completion of Landlord's Work shall be of a non-material nature that does not interfere with the use of the Premises. Upon Substantial Completion of Landlord's Work, Landlord shall require the TI Architect and the general contractor to execute and deliver, for the benefit of Tenant and Landlord, a Certificate of Substantial Completion in the form of the American Institute of Architects ("**AIA**") document G704. For purposes of this Work Letter, "**Minor Variations**" shall mean any modifications reasonably required: (i) to comply with all applicable Legal Requirements and/or to obtain or to comply with any required permit (including the TI Permit); (ii) to comply with any request by Tenant for modifications to Landlord's Work; (iii) to comport with good design, engineering, and construction practices that are not material; or (iv) to make reasonable adjustments for field deviations or conditions encountered during the construction of Landlord's Work.

(d) **Selection of Materials**. Where more than one type of material or structure is indicated on the TI Construction Drawings approved by Landlord and Tenant, the option will be selected at Landlord's sole and absolute subjective discretion. As to all building materials and equipment that Landlord is obligated to supply under this Work Letter, Landlord shall select the manufacturer thereof in its sole and absolute subjective discretion.

(e) **Delivery of the Premises**. When Landlord's Work is Substantially Complete, subject to the remaining terms and provisions of this Section 3(e), Tenant shall accept the Premises. Tenant's taking possession and acceptance of the Premises shall not constitute a waiver of: (i) any warranty with respect to workmanship (including installation of equipment) or material (exclusive of equipment provided directly by manufacturers), (ii) any non-compliance of Landlord's Work with applicable Legal Requirements, or (iii) any claim that Landlord's Work was not completed substantially in accordance with the TI Construction Drawings (subject to Minor Variations and such other changes as are permitted hereunder) (collectively, a "**Construction Defect**"). Tenant shall have one year after Substantial Completion within which to notify Landlord of any such Construction Defect discovered by Tenant, and Landlord shall use reasonable efforts to remedy or cause the responsible contractor to remedy any such Construction Defect within 30 days thereafter. Notwithstanding the foregoing, Landlord shall not be in default under the Lease if the applicable contractor, despite Landlord's reasonable efforts, fails to remedy such Construction Defect within such 30-day period, in which case Landlord shall have no further obligation with respect to such Construction Defect other than to cooperate, at no cost to Landlord, with Tenant should Tenant elect to pursue a claim against such contractor, provided that Tenant shall defend with counsel reasonably acceptable to Landlord, indemnify and hold Landlord harmless from and against any claims arising out of or in connection with any such claim.

Tenant shall be entitled to receive the benefit of all construction warranties and manufacturer's equipment warranties relating to equipment installed in the Premises. If requested by Tenant, Landlord shall attempt to obtain extended warranties from manufacturers and suppliers of such equipment, but the cost of any such extended warranties shall be borne solely by Tenant. Landlord shall promptly undertake and complete, or cause to be completed, all punch list items.

(f) **Commencement Date Delay**. Except as otherwise provided in the Lease, Delivery of the Premises shall occur when Landlord's Work has been Substantially Completed, except to the extent that completion of Landlord's Work shall have been actually delayed by any one or more of the following causes ("**Tenant Delay**"):

(i) Tenant's Representative was not available to give or receive any Communication or to take any other action required to be taken by Tenant hereunder;

(ii) Tenant's request for Change Requests (as defined in Section 4(a) below) whether or not any such Change Requests are actually performed;

(iii) Construction of any Change Requests;

(iv) Tenant's request for materials, finishes or installations requiring unusually long lead times;

(v) Tenant's delay in reviewing, revising or approving plans and specifications beyond the periods set forth herein;

(vi) Tenant's delay in providing information critical to the normal progression of the Project. Tenant shall provide such information as soon as reasonably possible, but in no event longer than one week after receipt of any request for such information from Landlord;

(vii) Tenant's delay in making payments to Landlord for Excess TI Costs (as defined in Section 5(d) below); or

(viii) Any other act or omission by Tenant or any Tenant Party (as defined in the Lease), or persons employed by any of such persons.

If Delivery is delayed for any of the foregoing reasons, then Landlord shall cause the TI Architect to certify the date on which the Tenant Improvements would have been Substantially Completed but for such Tenant Delay and such certified date shall be the date of Delivery.

4. **Changes**. Any changes requested by Tenant to the Tenant Improvements after the delivery and approval by Landlord of the Space Plan shall be requested and instituted in accordance with the provisions of this Section 4 and shall be subject to the written approval of Landlord and the TI Architect, such approval not to be unreasonably withheld, conditioned or delayed.

(a) **Tenant's Request For Changes**. If Tenant shall request changes to the Tenant Improvements ("**Changes**"), Tenant shall request such Changes by notifying Landlord in writing in substantially the same form as the AIA standard change order form (a "**Change Request**"), which Change Request shall detail the nature and extent of any such Change. Such Change Request must be signed by Tenant's Representative. Landlord shall, before proceeding with any Change, use commercially reasonable efforts to respond to Tenant as soon as is reasonably possible with an estimate of: (i) the time it will take, and (ii) the architectural and engineering fees and costs that will be incurred, to analyze such Change Request (which costs shall be paid by Tenant to the extent actually incurred, whether or not such change is implemented). Landlord shall thereafter submit to Tenant in writing, within 5 business days of receipt of the Change Request (or such longer period of time as is reasonably required depending on the extent of the Change Request), an analysis of the additional cost or savings involved, including, without limitation, architectural and engineering costs and the period of time, if any, that the Change will extend the date on which Landlord's Work will be Substantially Complete. Any such delay in the completion of Landlord's Work caused by a Change, including any suspension of Landlord's Work while any such Change is being evaluated and/or designed, shall be Tenant Delay.

(b) **Implementation of Changes**. If Tenant: (i) approves in writing the cost or savings and the estimated extension in the time for completion of Landlord's Work, if any, and (ii) deposits with Landlord any Excess TI Costs required in connection with such Change, Landlord shall cause the approved Change to be instituted. Notwithstanding any approval or disapproval by Tenant of any estimate of the delay caused by such proposed Change, the TI Architect's determination of the amount of Tenant Delay in connection with such Change shall be final and binding on Landlord and Tenant.

5. **Costs**.

(a) **TI Costs**. Landlord shall be responsible for the payment of design, permits and construction costs in connection with the construction of the Tenant Improvements, including, without limitation, the cost of preparing the TI Construction Drawings and the Space Plan and Landlord's out-of-pocket expenses (collectively, "**TI Costs**"). Notwithstanding anything to the contrary contained herein, in no event shall Landlord be required to pay for any furniture, personal property or other non-Building system materials or equipment, including, but not limited to, Tenant's voice or data cabling, non-ducted biological safety cabinets and other scientific equipment not incorporated into the Tenant Improvements.

(b) **Excess TI Costs**. Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that Landlord shall have no responsibility for any costs arising from or related to Tenant's changes to the Space Plan or TI Construction Drawings, Tenant Delays, and the cost of Changes and Change Requests (collectively, "**Excess TI Costs**"). Tenant shall deposit with Landlord, as a condition precedent to Landlord's obligation to complete the Tenant Improvements, 100% of the Excess TI Costs. If Tenant fails to deposit any Excess TI Costs with Landlord, Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including, but not limited to, the right to interest at the Default Rate and the right to assess a late charge). For purposes of any litigation instituted with regard to such amounts, those amounts will be deemed Rent under the Lease.

6. **Tenant Access**.

(a) **Tenant's Access Rights**. Landlord hereby agrees to permit Tenant access, at Tenant's sole risk and expense, to the Building (i) 30 days prior to the Commencement Date to perform any work ("**Tenant's Work**") required by Tenant other than Landlord's Work, provided that such Tenant's Work is coordinated with the TI Architect and the general contractor, and complies with the Lease and all other reasonable restrictions and conditions Landlord may impose, and (ii) prior to the completion of Landlord's Work, to inspect and observe work in process; all such access shall be during normal business hours or at such other times as are reasonably designated by Landlord. Notwithstanding the foregoing, Tenant shall have no right to enter onto the Premises or the Project unless and until Tenant shall deliver to Landlord evidence reasonably satisfactory to Landlord demonstrating that any insurance reasonably required by Landlord in connection with such pre-commencement access (including, but not limited to, any insurance that Landlord may require pursuant to the Lease) is in full force and effect. Any entry by Tenant shall comply with all established safety practices of Landlord's contractor and Landlord until completion of Landlord's Work and acceptance thereof by Tenant.

(b) **No Interference**. Neither Tenant nor any Tenant Party (as defined in the Lease) shall interfere with the performance of Landlord's Work, nor with any inspections or issuance of final approvals by applicable Governmental Authorities, and upon any such interference, Landlord shall have the right to exclude Tenant and any Tenant Party from the Premises and the Project until Substantial Completion of Landlord's Work.

(c) **No Acceptance of Premises**. The fact that Tenant may, with Landlord's consent, enter into the Project prior to the date Landlord's Work is Substantially Complete for the purpose of performing Tenant's Work shall not be deemed an acceptance by Tenant of possession of the Premises, but in such event Tenant shall defend with counsel reasonably acceptable by Landlord, indemnify and hold Landlord harmless from and against any loss of or damage to Tenant's property, completed work, fixtures, equipment, materials or merchandise, and from liability for death of, or injury to, any person, caused by the act or omission of Tenant or any Tenant Party.

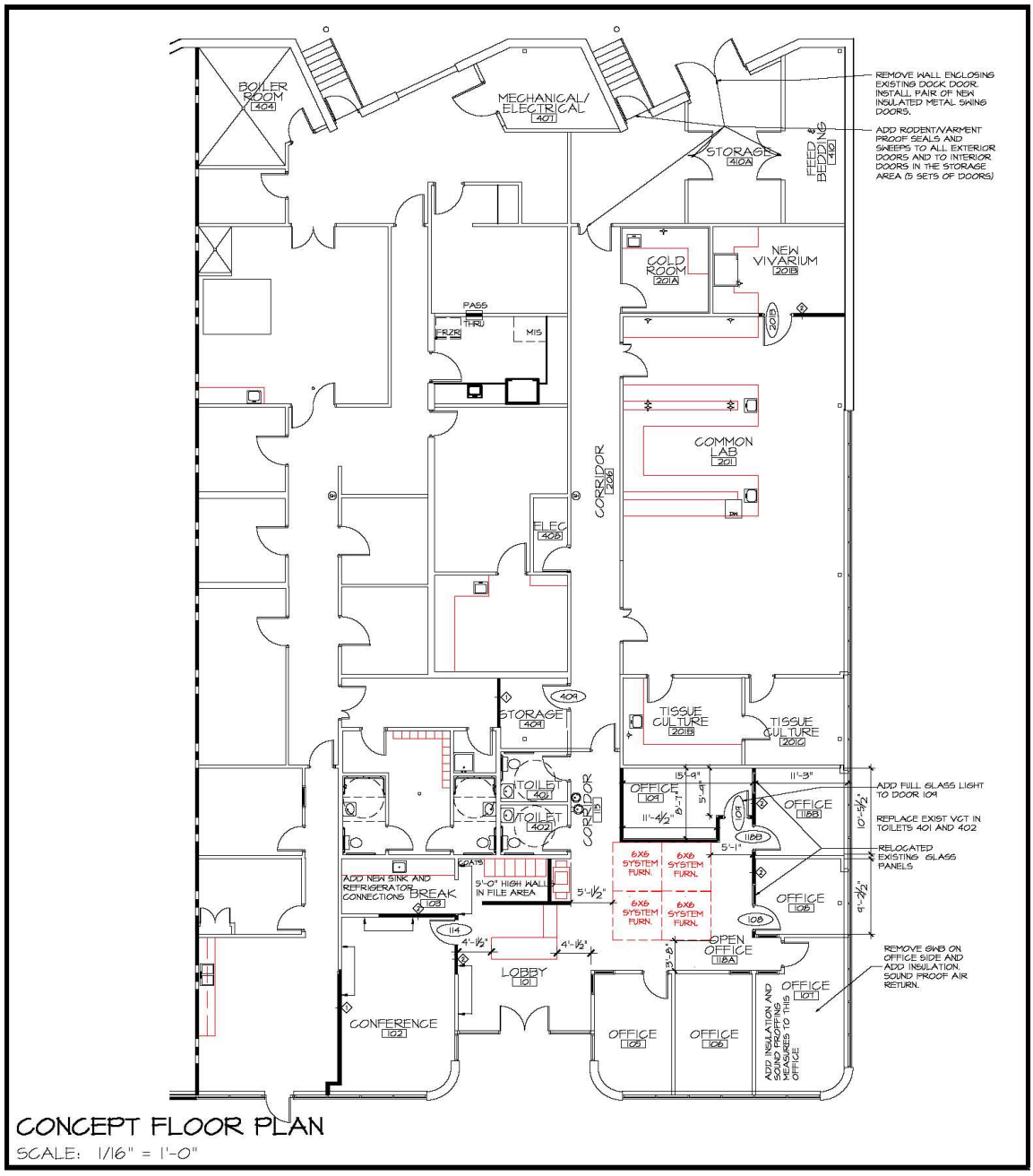
7. **Miscellaneous**.

(a) **Consents**. Whenever consent or approval of either party is required under this Work Letter, that party shall not unreasonably withhold, condition or delay such consent or approval, unless expressly set forth herein to the contrary.

(b) **Modification**. No modification, waiver or amendment of this Work Letter or of any of its conditions or provisions shall be binding upon Landlord or Tenant unless in writing signed by Landlord and Tenant.

Schedule 1

Space Plan



CONCEPT FLOOR PLAN

SCALE: 1/16" = 1'-0"

Integrated Design

1111 Oberlin Road
Raleigh, NC 27605

Tel: 919.832.6658
Fax: 919.839.2255
www.id-aep.com

JOB CODE:ARE800AB
DATE: 08 JAN 2014
REVISED
DRAWING NUMBER

CC-10

PROPOSED FLOOR PLAN FOR:

HEAT BIOLOGICS

BUILDING 801- BAYS 11, 12

801 CAPITOLA DRIVE
DURHAM, NORTH CAROLINA

EXHIBIT D TO LEASE

ACKNOWLEDGMENT OF COMMENCEMENT DATE

This **ACKNOWLEDGMENT OF COMMENCEMENT DATE** is made this _____ day of _____, 2014, between **ARE-100/800/801 CAPITOLA, LLC**, a Delaware limited liability company ("**Landlord**"), and **HEAT BIOLOGICS, INC.**, a Delaware corporation ("**Tenant**"), and is attached to and made a part of the Lease dated _____, _____ (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

Landlord and Tenant hereby acknowledge and agree, for all purposes of the Lease, that the Commencement Date of the Base Term of the Lease is _____, _____, the Rent Commencement Date is _____, _____ and the termination date of the Base Term of the Lease shall be midnight on _____, _____. In case of a conflict between the terms of the Lease and the terms of this Acknowledgment of Commencement Date, this Acknowledgment of Commencement Date shall control for all purposes.

IN WITNESS WHEREOF, Landlord and Tenant have executed this ACKNOWLEDGMENT OF COMMENCEMENT DATE to be effective on the date first above written.

TENANT:

HEAT BIOLOGICS, INC.,
a Delaware corporation

By:
Its:

LANDLORD:

ARE-100/800/801 CAPITOLA, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, L.P.,
a Delaware limited partnership,
managing member

By: ARE-QRS CORP.,
a Maryland corporation,
general partner

By:
Name:
Title:

EXHIBIT E TO LEASE

Rules and Regulations

1. The sidewalk, entries, and driveways of the Project shall not be obstructed by Tenant, or any Tenant Party, or used by them for any purpose other than ingress and egress to and from the Premises.

2. Tenant shall not place any objects, including antennas, outdoor furniture, etc., in the parking areas, landscaped areas or other areas outside of its Premises, or on the roof of the Project.

3. Except for animals assisting the disabled, no animals shall be allowed in the offices, halls, or corridors in the Project.

4. Tenant shall not disturb the occupants of the Project or adjoining buildings by the use of any radio or musical instrument or by the making of loud or improper noises.

5. If Tenant desires telegraphic, telephonic or other electric connections in the Premises, Landlord or its agent will direct the electrician as to where and how the wires may be introduced; and, without such direction, no boring or cutting of wires will be permitted. Any such installation or connection shall be made at Tenant's expense.

6. Tenant shall not install or operate any steam or gas engine or boiler, or other mechanical apparatus in the Premises, except as specifically approved in the Lease. The use of oil, gas or inflammable liquids for heating, lighting or any other purpose is expressly prohibited. Explosives or other articles deemed extra hazardous shall not be brought into the Project.

7. Parking any type of recreational vehicles is specifically prohibited on or about the Project. Except for the overnight parking of operative vehicles, no vehicle of any type shall be stored in the parking areas at any time. In the event that a vehicle is disabled, it shall be removed within 48 hours. There shall be no "For Sale" or other advertising signs on or about any parked vehicle. All vehicles shall be parked in the designated parking areas in conformity with all signs and other markings. All parking will be open parking, and no reserved parking, numbering or lettering of individual spaces will be permitted except as specified by Landlord.

8. Tenant shall maintain the Premises free from rodents, insects and other pests.

9. Landlord reserves the right to exclude or expel from the Project any person who, in the judgment of Landlord, is intoxicated or under the influence of liquor or drugs or who shall in any manner do any act in violation of the Rules and Regulations of the Project.

10. Tenant shall not cause any unnecessary labor by reason of Tenant's carelessness or indifference in the preservation of good order and cleanliness. Landlord shall not be responsible to Tenant for any loss of property on the Premises, however occurring, or for any damage done to the effects of Tenant by the janitors or any other employee or person.

11. Tenant shall give Landlord prompt notice of any defects in the water, lawn sprinkler, sewage, gas pipes, electrical lights and fixtures, heating apparatus, or any other service equipment affecting the Premises.

12. Tenant shall not permit storage outside the Premises, including without limitation, outside storage of trucks and other vehicles, or dumping of waste or refuse or permit any harmful materials to be placed in any drainage system or sanitary system in or about the Premises.

13. All moveable trash receptacles provided by the trash disposal firm for the Premises must be kept in the trash enclosure areas, if any, provided for that purpose.

14. No auction, public or private, will be permitted on the Premises or the Project.

15. No awnings shall be placed over the windows in the Premises except with the prior written consent of Landlord.

16. The Premises shall not be used for lodging, sleeping or cooking or for any immoral or illegal purposes or for any purpose other than that specified in the Lease. No gaming devices shall be operated in the Premises.

17. Tenant shall ascertain from Landlord the maximum amount of electrical current which can safely be used in the Premises, taking into account the capacity of the electrical wiring in the Project and the Premises and the needs of other tenants, and shall not use more than such safe capacity. Landlord's consent to the installation of electric equipment shall not relieve Tenant from the obligation not to use more electricity than such safe capacity.

18. Tenant assumes full responsibility for protecting the Premises from theft, robbery and pilferage.

19. Tenant shall not install or operate on the Premises any machinery or mechanical devices of a nature not directly related to Tenant's ordinary use of the Premises and shall keep all such machinery free of vibration, noise and air waves which may be transmitted beyond the Premises.

EXHIBIT F TO LEASE

TENANT'S PERSONAL PROPERTY

Furniture including, without limitation, desks, space modules, artwork and shelving

Computer and telephone systems

Autoclave

Refrigerators/freezers

Rack equipment

Biological safety cabinets

Cell culture incubators

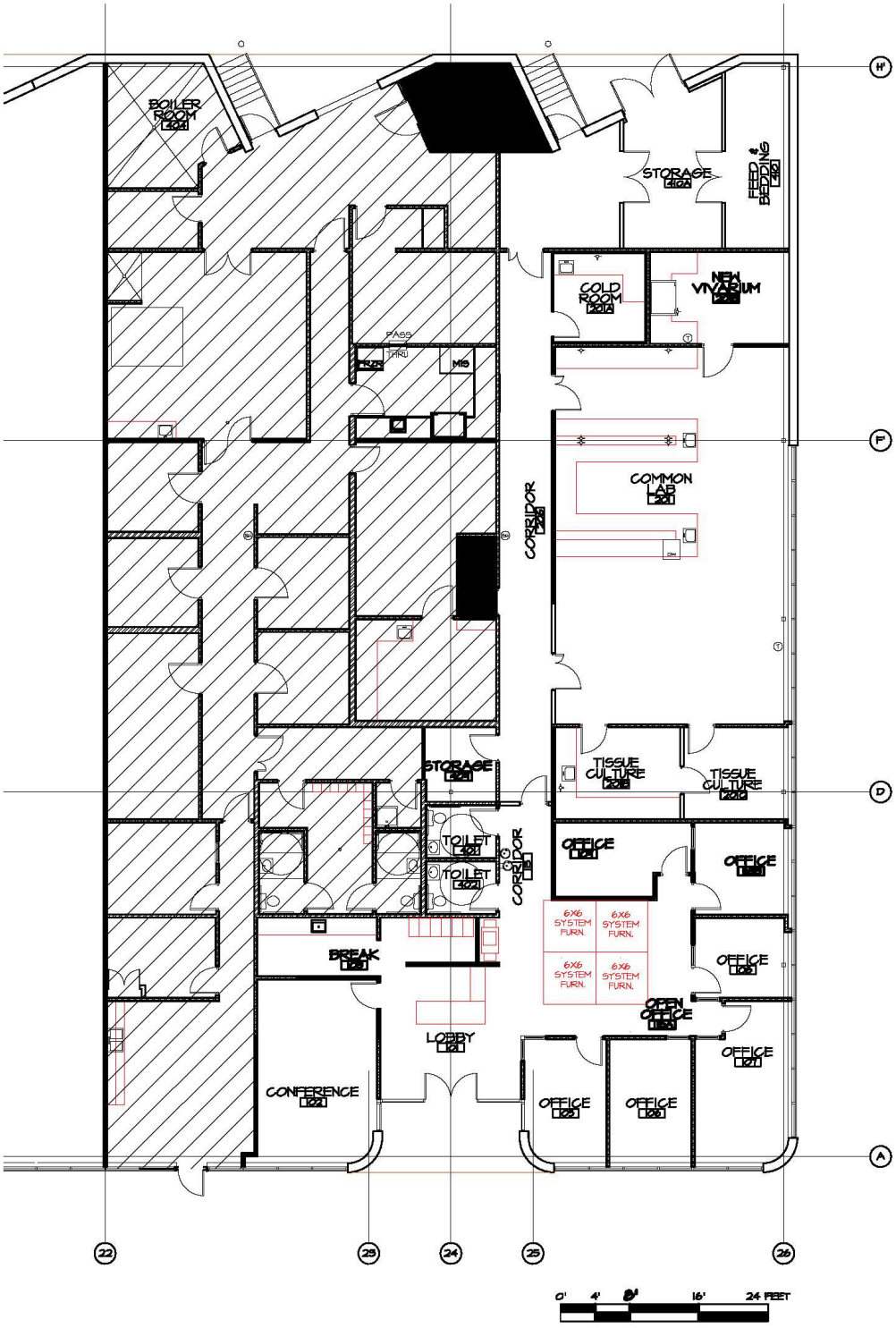
Flow cytometers

PCR machines

Other laboratory equipment not building into the Premises and disposable laboratory materials

EXHIBIT G TO LEASE

EXPANSION SPACE



Portions herein identified by XXXX have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.

EXHIBIT 10.40

LICENSE AGREEMENT

This License Agreement (the "Agreement") is entered into and made effective the 4th day of March, 2014 (the "Effective Date") between **UNIVERSITY OF MIAMI** and its School of Medicine, whose principal place of business is at 1951 NW 7th Avenue, Suite 110, Miami, FL 33136 (hereinafter referred to as "LICENSOR") and **HEAT BIOLOGICS I, INC**., a Delaware corporation, whose principal place of business is at 100 Europa Drive, Suite 420, Chapel Hill, NC 27517 (hereinafter referred to as "LICENSEE").

WITNESSETH

WHEREAS, LICENSOR is the co-owner of the technology and product identified as "COMBINED CELL BASED GP96-IG-SIV/HIV, RECOMBINANT GP120 PROTEIN VACCINATION FOR PROTECTION FROM SIV/HIV" technology (UMK-161) with the National Institute of Health (NIH);

WHEREAS, LICENSOR is the co-owner of the patent rights relating to UMK-161;

WHEREAS, LICENSOR makes no representations with regard to NIH's rights and interest in UMK-161;

WHEREAS, LICENSOR wishes to grant an exclusive license, under its undivided rights and interest in UMK-161 and patent rights related thereto to LICENSEE; and

WHEREAS, LICENSEE desires to acquire LICENSOR's undivided rights and interest in UMK-161 from LICENSOR and the patent rights related thereto for the purpose of commercially marketing UMK-161.

NOW THEREFORE, for these and other valuable considerations, the receipt of which is hereby acknowledged, the parties agree as follows:

1. DEFINITIONS:

1.1 "Affiliate" shall mean any corporation or other business entity controlled by, controlling or under common control with LICENSEE. For this purpose, "control" shall mean direct

or indirect beneficial ownership of at least a fifty percent (50%) of the voting stock of, or at least a fifty percent (50%) interest in the income of such corporation or other business entity, or such other relationship as in fact, constitutes actual control.

1.2 "Sublicensee" as used in this Agreement shall mean any third party to whom LICENSEE has granted a license to make, have made, use and/or sell the Product under the Patent Rights, provided said third party has agreed in writing with LICENSEE to accept the conditions and restrictions agreed to by LICENSEE in this Agreement.

1.3 "Patent Rights" shall mean the following: U.S. Provisional Patent Application serial No. 61/445,884, filed February 23, 2011 titled "Combined cell based gp96-IG-SIV/HIV; recombinant gp120 protein vaccination for protection from SIV/HIV", PCT Application Serial No. PCT/US2012/26256, filed February 23, 2012, titled "combined cell based gp96-IG-SIV/HIV, recombinant gp120 protein vaccination for protection from SIV/HIV"; any patent application(s) claiming the benefit of priority thereof including all divisions and continuations of these applications, all patents issuing from these applications, divisions, and continuations; those claims in continuations-in-part of the foregoing that are described in sufficient detail in the U.S. Provisional Patent Application serial No. 61/445,884 filed February 23, 2011 or the PCT Application Serial No. PCT/US2012/26256 filed February 23, 2012 to meet the requirements of 35 U.S.C. 112 as of their respective filing dates¶1; and any re-examinations or reissues of the foregoing.

1.4 "Licensed Product" shall mean any product or part thereof which:

(a) is covered in whole or in part by an issued, unexpired, and not adjudicated unenforceable claim or a pending claim contained in the Patent Rights;

(b) is manufactured by using a process which is covered in whole or in part by an issued, unexpired, and not adjudicated unenforceable claim or a pending claim contained in the Patent Rights; or

(c) incorporates or comprises the Licensed Materials.

1.5 "Licensed Process" shall mean any process practiced in a country in which said process is covered in whole or in part by an issued, unexpired, and not adjudicated unenforceable claim or pending claim contained in the Patent Rights.

1.6 "Net Sales" shall mean the sum of all amounts invoiced on account of sale or use of Licensed Products and Licensed Processes by LICENSEE and its Affiliates or any Sublicensees

to non-affiliated third party purchasers or users of Licensed Products or Licensed Processes, less (a) discounts to purchasers in amounts customary in the trade, (b) amounts for transportation or shipping charges to purchasers, (c) credits for returns, allowances or trades, and (d) taxes and duties levied on the sale or use of Licensed Products, whether absorbed by Licensee or paid by the purchaser.

1.7 "Territory" shall mean worldwide.

1.8 "Field of Use" shall mean all human healthcare and research applications.

1.9 "Licensed Materials" shall mean LICENSOR's biological materials in the possession of Dr. Eckhard Podack's laboratory at the Effective Date that are covered in whole or in part by an issued, unexpired, and not adjudicated unenforceable claim or a pending claim contained in the Patent Rights.

2. GRANT:

2.1 LICENSOR hereby grants an exclusive license to LICENSEE, under LICENSOR's undivided rights and interest in the Patent Rights, subject to any rights of the U.S. government specified in section 4 below, in the Territory for the Field of Use, with the right to sublicense, under the Patent Rights, to make, have made for its own use and sale, use and sell Licensed Products and Licensed Processes.

2.2 LICENSOR also hereby grants an exclusive license to LICENSEE, under LICENSOR's undivided rights and interest in the Licensed Materials, to make, use, and/or sell the said Licensed Materials in the Territory for the Field of Use. At LICENSEE's request, LICENSOR shall provide LICENSEE with a reasonable amount of Licensed Materials so that LICENSEE may reproduce such Licensed Materials for the purpose of making, selling, or using Licensed Products or Licensed Processes.

2.3 LICENSOR reserves to itself the non-transferable right to make and use Patent Rights, Licensed Materials, Licensed Products and/or Licensed Processes solely for its internal, non-commercial: scientific research, not-for-profit clinical research, and educational purposes.

3. TERM:

The license granted by this Agreement shall be exclusive in the licensed Field of Use for a term commencing as of the Effective Date of this Agreement and continue until the expiration, on a country by country basis, of all of the Patent Rights.

4. UNITED STATES LAWS:

4.1 Licensee understands that the Licensed Subject Matter may have been developed under a funding agreement with the Government of the United States of America and, if so, that the Government may have certain rights relative thereto. This Agreement is explicitly made subject to the Government's rights under any agreement and any applicable law or regulation. If there is a conflict between an agreement, applicable law or regulation and this Agreement, the terms of the Government agreement, applicable law or regulation shall prevail.

Specifically, This Agreement is subject to all of the terms and conditions of Title 35 United States Code sections 200 through 204, including an obligation that Licensed Product(s) sold or produced in the United States be "manufactured substantially in the United States," and LICENSEE agrees to take all reasonable action necessary on its part as licensee to enable LICENSOR to satisfy its obligation thereunder, relating to Invention(s).

4.2 It is understood that LICENSOR is subject to United States laws and regulations controlling the export of technical data, computer software, laboratory prototypes and other commodities (including the Arms Export Control Act, as amended and the Export Administration Act of 1979), and that its obligations hereunder are contingent on compliance with applicable United States export laws and regulations. The transfer of certain technical data and commodities may require a license from the cognizant agency of the United States Government and/or written assurances by LICENSEE that LICENSEE shall not export data or commodities to certain foreign countries without prior approval of such agency. LICENSOR neither represents that a license shall not be required nor that, if required, it shall be issued.

5. PATENT PROTECTION AND INFRINGEMENT:

5.1 LICENSEE, after the Effective Date of this Agreement, is responsible for the filing and the prosecution of all patents and applications where LICENSEE agrees to keep LICENSOR fully apprised on the status of all Patent Rights and shall provide LICENSOR the opportunity to make comments and suggestions on all decisions relating to the prosecution of the Patent Rights (e.g., office actions). In the event that there is disagreement, LICENSEE agrees that LICENSOR's comments and opinions shall prevail provided that LICENSOR shall in good faith consider LICENSEE's suggestions.

5.2 LICENSEE shall promptly notify LICENSOR in writing of any claim of Patent Rights infringement which may be asserted against LICENSEE or LICENSOR, its Affiliates and any sublicensees because of the manufacture, use, promotion and sale of Products.

5.3 LICENSEE shall reimburse LICENSOR's past patent fees in an amount of $11,000 within thirty (30) days of the Effective Date.

5.4 LICENSEE will defend, indemnify and hold harmless LICENSOR, its trustees, officers, directors, employees and its Affiliates against any and all judgments and damages arising from any and all third party claims of Patent Rights infringement which may be asserted against LICENSOR, and Affiliates because of the manufacture, use, promotion and sale of Licensed Products except for the use of Licensed Materials, Licensed Products and/or Licensed Processes by Licensor pursuant to section 2.3 of this Agreement. LICENSEE will bear all costs and expenses incurred in connection with the defense of any such claims or as a result of any settlement made or judgment rendered on the basis of such claims. LICENSOR shall have no further liability to LICENSEE for any loss or damages LICENSEE may incur as a result of the invalidity of LICENSOR'S Patent Rights. LICENSOR will have the right, but not the obligation to retain counsel at its expense in connection with any such claim. LICENSOR at its option, shall have the right, within thirty days after commencement of such action, to intervene and take over the sole defense of the action at its own expense.

5.5 Upon learning of any infringement of Patent Rights by third parties in any country, LICENSEE and LICENSOR will promptly inform each other, as the case may be, in writing of that fact and will supply the other with any available evidence pertaining to the infringement. LICENSEE at its own expense, shall have the option to take whatever steps are necessary to stop the infringement at its expense and recover damages therefore. If requested by LICENSEE, LICENSOR will join in any legal actions enforcing or defending the Patent Rights against third parties deemed necessary or advisable by LICENSEE to prevent or seek damages, or both, from the infringement of the Patent Rights provided that LICENSEE funds all costs associated with such actions, using counsel mutually acceptable to LICENSEE and LICENSOR, and indemnifies and holds LICENSOR harmless with respect to any claims or damages made against or sustained by LICENSOR in connection with such involvement. In the event that LICENSOR and LICENSEE mutually bring suit, costs and expenses shall be borne by LICENSEE, and any recovery shall be shared by the parties as if such infringing sales were Net Sales. In any event, no settlement, consent, judgment or other voluntary

final disposition of the suit may be entered into without the consent of LICENSOR, which shall not be unreasonably withheld. In the event LICENSEE does not take steps to stop the infringement, LICENSOR shall have the right to bring suit at its own expense. In such event, financial recoveries will be entirely retained by LICENSOR.

5.6 LICENSOR shall have no responsibility with respect to LICENSEE'S own trademarks and tradename, and LICENSEE in respect to the use thereof will defend, indemnify and hold harmless LICENSOR against any and all third party claims.

6. INDEMNIFICATION:

6.1 LICENSEE agrees to release, indemnify and hold harmless the LICENSOR, its trustees, officers, faculty, employees and students against any and all losses, expenses, claims, actions, lawsuits and judgments thereon (including reasonable attorney's fees through the appellate levels) which may be brought against LICENSOR, its trustees, officers, faculty, employees or students as a result of or arising out of any negligent act or omission of LICENSEE, its agents, or employees, or arising out of use, production, manufacture, sale, lease, consumption or advertisement by LICENSEE or any Sublicensee of any Licensed Product, Licensed Process, or Licensed Materials covered by this Agreement.

6.2 LICENSOR agrees to release, indemnify and hold harmless the LICENSEE, its directors, officers, employees, Affiliates, Sublicensees, and agents against any and all losses, expenses, claims, actions, lawsuits and judgments thereon (including reasonable attorney's fees through the appellate levels) which may be brought against LICENSEE, its directors, officers, employees, Affiliates, Sublicensees, and/or agents as a result of or arising out of any willful misconduct, or negligent act or omission of LICENSOR.

6.3 This Agreement to reimburse and indemnify under the circumstances set forth above shall continue after the termination of this Agreement.

7. REPRESENTATIONS/WARRANTIES:

7.1 LICENSOR hereby represents and warrants to LICENSEE that LICENSOR owns the Patent Rights and Licensed Materials and has not assigned any rights therein or given any license or other rights thereto to any party other than LICENSEE.

7.2 LICENSOR hereby represents and warrants that, although it has not conducted any investigation, it has no knowledge of any patents or patent applications, other than the Patents Rights, that contain a claim that would be infringed by the sale or use of a Licensed Product, Licensed Process, or Licensed Materials.

7.3 EXCEPT AS PROVIDED ABOVE, LICENSOR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND HEREBY DISCLAIMS ALL SUCH WARRANTIES, AS TO ANY MATTER WHATSOEVER, INCLUDING, WITHOUT LIMITATION, THE CONDITION OF ANY INVENTION(S) OR PRODUCT, WHETHER TANGIBLE OR INTANGIBLE, LICENSED UNDER THIS AGREEMENT; OR THE MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OF THE INVENTION OR PRODUCT; OR THAT THE USE OF THE LICENSED PRODUCT WILL NOT INFRINGE ANY PATENT, COPYRIGHTS, TRADEMARKS, OR OTHER RIGHTS. OTHER THAN FOR BREACH OF THE ABOVE WARRANTIES, OR ITS OWN NEGLIGENT ACTS OR OMISSIONS, LICENSOR SHALL NOT BE LIABLE FOR ANY DIRECT, CONSEQUENTIAL, OR OTHER DAMAGES SUFFERED BY ANY LICENSEE OR ANY THIRD PARTIES RESULTING FROM THE USE, PRODUCTION, MANUFACTURE, SALE, LEASE, CONSUMPTION, OR ADVERTISEMENT OF THE PRODUCT.

7.4 EXCEPT FOR EXPLICITLY PROVIDED FOR HEREIN, LICENSEE DOES NOT MAKE ANY OTHER REPRESENTATIONS OR GIVE ANY OTHER EXPLICIT OR IMPLICIT WARRANTIES. TO THE FULLEST EXTENT PERMITTED BY LAW LICENSEE HEREBY DISCLAIMS ANY OTHER REPRESENTATIONS AND WARRANTIES.

7.5 The provisions of this Section shall continue beyond the termination of this Agreement.

8. Payments:

8.1 In consideration of the license herein granted, LICENSEE shall pay royalties to LICENSOR as follows:

(a) LICENSEE agrees to pay to LICENSOR a license issue fee of $15,000 within thirty (30) days of the Effective Date as well as any future patent fees as set out in section 5 of this Agreement.

(b) LICENSEE agrees to pay to LICENSOR as earned royalties a royalty calculated as a percentage of LICENSEE's Net Sales of Licensed Products which, if not for this Agreement, would infringe the Patent Rights, in accordance with the terms and conditions of this Agreement. The royalty is deemed earned as of the earlier of the date the Licensed Product and/or Licensed Process is actually sold and paid for, the date an invoice is sent by LICENSEE, or the date a Licensed Product and/or Licensed Process is transferred to a third party for any promotional reasons. The royalty shall remain fixed while this Agreement is in effect at a rate of XXXX percent (XXXX%) of Net Sales.

(c) For a sublicense, LICENSEE shall pay to LICENSOR an amount equal to XXXX percent (XXXX%) of what LICENSEE would have been required to pay to LICENSOR had LICENSEE sold the amount of Licensed Products sold by the Sublicensee. In addition, if LICENSEE receives any fees, minimum royalties, or other payments in consideration for any rights granted under a Sublicense, and such payments are not based directly upon the amount or value of Licensed Products or Licensed Processes sold by the Sublicensee nor represent payment of costs to LICENSEE for a development program which LICENSEE is obligated to perform under such sublicense, then LICENSEE shall pay LICENSOR XXXX percent (XXXX%) of such payments.

(d) In the event that LICENSEE requires more than one license from the LICENSOR to make, have made for its use, sell, offer to sell or import any particular Licensed Product or Licensed Process as defined in sections 1.4 and 1.5, respectively, of this Agreement, then the combined earned royalties shall not exceed XXXX% of Net Sales and any sublicense fees shall not exceed XXXX percent (XXXX%) of what LICENSEE would have been required to pay to LICENSOR had LICENSEE sold the amount of Licensed Products sold by the Sublicensee, and any milestone payments shall not exceed twice of those set forth in section 8.2 of this Agreement.

(e) In the event that one or more licenses from third parties are required by LICENSEE in order to make, have made, use, sell, offer to sell or import any particular Licensed Product or Licensed Process, then the earned royalty which LICENSEE is obligated to pay LICENSOR under this Agreement shall be reduced by XXXX ($) for each one dollar ($1.00) in royalties which Licensee is obligated to pay to third parties under such licenses, further provided, however, that the royalties payable to LICENSOR under this Section shall not be reduced to less than XXXX percent (XXXX%) of the applicable Net Sales. The parties agree that a license from the NIH for UMK-161 or the Patent Rights shall not be considered to be required by LICENSEE in order to make, have made, use, sell, offer to sell or import any particular Licensed Product or Licensed Process.

8.2 In addition, LICENSEE agrees to pay LICENSOR the following milestone payments:

Upon the completion of a phase I trial - $XXXX

Upon the completion of a phase II trial - $XXXX

Upon the completion of a phase III trial - $XXXX

Upon the acceptance of NDA by FDA or its foreign equivalent agencies in other countries - $XXXX (only one payment shall be due even if marketing approval is obtained in more than one country).

8.3 All payments shall be made hereunder in U.S. dollars; provided however, that if the proceeds of the sales upon which such royalty payments are

based are received by the LICENSEE in a foreign currency or other form that is not convertible or exportable in dollars, and the LICENSEE does not have ongoing business operations or bank accounts

in the country in which the currency is not convertible or exportable, the LICENSEE shall pay such royalties in the currency of the country in which such sales were made by depositing such royalties in LICENSOR'S name in a bank designated by LICENSOR in such country. Royalties in U.S. dollars shall be computed by converting the royalty in the currency of the country in which the sales were made at the exchange rate for U.S. dollars prevailing at the close of the business day of the LICENSEE'S quarter for which royalties are being calculated as published the following day in the

Wall Street Journal (or, if it ceases to be published, a comparable publication to be agreed upon from time to time by the parties), and with respect to those countries for which rates are not published in the Wall Street Journal, the exchange rate fixed for such date by the appropriate United States governmental agency.

8.4 In the event the royalties set forth herein are higher than the maximum royalties permitted by the law or regulations of a particular country, the royalty payable for sales in such country shall be equal to the maximum permitted royalty under such law or regulation.

8.5 In the event that any taxes, withholding or otherwise, are levied by any taxing authority in connection with accrual or payment of any royalties payable to LICENSOR under this Agreement, the LICENSEE shall have the right to pay such taxes to the local tax authorities on behalf of LICENSOR and the payment to LICENSOR of the net amount due after reduction by the amount of such taxes, shall fully satisfy the LICENSEE'S royalty obligations under this Agreement.

9. DILIGENCE:

9.1 LICENSEE shall use efforts at least sufficient to meet the requirements of the Bayh-Dole Act to manufacture, market and sell the Licensed Products in the Territory, and to create a demand for the Products.

9.2 Until the date of first commercial sale of Licensed Products or Licensed Processes, LICENSEE will supply LICENSOR with a written development report annually fifteen (15) days after the end of the calendar year. Such development report shall summarize the development activities that are to be undertaken by the LICENSEE to bring Licensed Products and/or Licensed Processes to the market.

9.3 Unless LICENSEE has introduced a Licensed Product into the commercial marketplace in one of the three major markets (European Union, Japan and the United States) or has made best efforts (for avoidance of doubt it will be presumed that LICENSEE has used best efforts if it has a Licensed Product in a phase III clinical trial) to achieve the same prior to December 31, 2023. LICENSEE agrees that LICENSOR may terminate this Agreement by providing LICENSEE ninety (90) advanced written notice of its intent to terminate this Agreement. In the event the payment of earned royalties, once begun and if any are due, ceases for more than two (2) calendar quarters, and LICENSEE fails to cure this breach within two (2) months after being provided written notice of same, LICENSOR may terminate this Agreement.

10. REPORTS AND RECORDS:

10.1 Commencing one (1) year after the first sale, the LICENSEE shall furnish to LICENSOR a report in writing specifying during the preceding calendar quarter (a) the number or amount of Licensed Products sold hereunder by LICENSEE, and/or its Affiliates or Sublicensees, (b) the total billings for all Licensed Products sold, (c) deductions as applicable in paragraph 1.6, (d) total royalties due, (e) names and addresses of all Sublicensees. Such reports shall be due within forty-five (45) days following the last day of each calendar quarter in each year during the term of this Agreement. Each such report shall be accompanied by payment in full of the amount due LICENSOR in United States dollars calculated in accordance with Section 8.1 hereof.

10.2 For a period of three (3) years from the date of each report pursuant to Paragraph 10.1, LICENSEE, shall keep records adequate to verify each such report and accompanying payment made to LICENSOR under this Agreement, and an independent certified public accountant or accounting firm selected by LICENSOR and acceptable to LICENSEE may have access, on reasonable notice during regular business hours, not to exceed once per year, to such records to verify such reports and payments. Such accountant or accounting firm shall not disclose to LICENSOR any information other than that information relating solely to the accuracy of, or necessity for, the reports and payments made hereunder. The fees and expense of the certified public accountant or accounting firm performing such verification shall be borne by LICENSOR unless in the event that the audit reveals an underpayment of royalty by more than ten (10%) percent, the cost of the audit shall be paid by LICENSEE.

11. MARKING AND STANDARDS:

11.1 LICENSEE agrees to mark and have sublicensees mark Licensed Products (or their containers or labels) made, sold, or otherwise disposed of by it under the license granted in this Agreement with a proper patent notice as specified under the patent laws of the United States. 11.2 LICENSEE further agrees to maintain satisfactory standards in respect to the nature of the Licensed Products manufactured and/or sold by LICENSEE. LICENSEE, agrees that all Licensed Products manufactured and/or sold by it shall be of a quality which is appropriate to products of the type here involved. LICENSEE agrees that similar provisions shall be included in sublicenses of all tiers.

12. ASSIGNMENT:

12.1 This Agreement is not assignable by LICENSEE or by operation of law without the prior written consent of LICENSOR at its sole discretion except that LICENSEE shall have the right to transfer or assign this Agreement to any entity which acquires all or substantially all of LICENSEE's assets provided that LICENSEE gives LICENSOR thirty (30) days advance written notice of the intended assignment and considers in good faith any of LICENSOR's concerns relating to the intended assignment. The foregoing sentence shall not be construed to require LICENSEE to obtain LICENSOR's approval of any Sublicensee.

12.2 This Agreement shall extend to and be binding upon the successors and legal representatives and permitted assigns of LICENSOR and LICENSEE.

13. NOTICE:

Any notice, payment, report or other correspondence (hereinafter collectively referred to as "correspondence") required or permitted to be given hereunder shall be mailed by certified mail or delivered by hand to the party to whom such correspondence is required or permitted to be given hereunder. If mailed, any such notice shall be deemed to have been given when mailed as evidenced by the postmark at point of mailing. If delivered by hand, any such correspondence shall be deemed to have been given when received by the party to whom such correspondence is given, as evidenced by written and dated receipt of the receiving party.

All correspondence to LICENSEE shall be addressed as follows:

Mr. Jeffrey Wolf
CEO
Heat Biologics, Inc.
100 Europa Drive, Suite 420
Chapel Hill, NC 27517

All correspondence to LICENSOR shall be addressed, in duplicate, as follows:

FOR NOTICE:

Assistant Vice President
Treasurer
327 Max Orovitz Building
1507 Levante Avenue
Coral Gables, Florida 33124-1432
Attention: Mr. Humberto Speziani

FOR NOTICE AND PAYMENT:

Office of Technology Transfer
1951 NW 7th Avenue, Suite 110
Miami, FL 33136

Either party may change the address to which correspondence to it is to be addressed by notification as provided herein.

14. TERMINATION:

14.1 A party shall have the right to terminate this Agreement if the other party commits (a) a material breach of an obligation under this Agreement or (b) provides a false report, and continues in breach for more than ninety (90) days after receiving unambiguous written notice of such breach or false report; however, in the event LICENSEE breaches its obligations under Sections five (5) or eight (8) above, LICENSEE shall have thirty (30) days after receiving written notice to cure such breach, after which LICENSOR shall have the right to terminate this Agreement. Such termination shall be effective upon further written notice to the breaching party after failure by the breaching party to cure such default.

14.2 The license and rights granted in this Agreement have been granted on the basis of the special capability of LICENSEE to perform research and development work leading to the

manufacture and marketing of the Products. Accordingly, LICENSEE covenants and agrees that in the event any proceedings under the Bankruptcy Act or any amendment thereto, be commenced by or against LICENSEE, and, if against LICENSEE, said proceedings shall not be dismissed with prejudice before either an adjudication in bankruptcy or the confirmation of a composition, arrangement, or plan of reorganization, or in the event LICENSEE shall be adjudged insolvent or make an assignment for the benefit of its creditors, or if a writ of attachment or execution be levied upon the license hereby created and not be released or satisfied within ten (10) days thereafter, or if a receiver be appointed in any proceeding or action to which LICENSEE is a party with authority to exercise any of the rights or privileges granted hereunder and such receiver be so discharged within a period of forty-five (45) days after his appointment, any such event shall be deemed to constitute a breach of this Agreement by LICENSEE and, LICENSOR, at the election of LICENSOR, but not otherwise, ipso facto, and without notice or other action by LICENSOR, shall terminate this Agreement and all rights of LICENSEE hereunder and all rights of any and all persons claiming under LICENSEE.

14.3 LICENSEE shall have the right to terminate this Agreement by providing ninety (90) days written notice of its intent to terminate this Agreement to LICENSOR.

14.4 Any termination of this Agreement shall be without prejudice to LICENSOR's right to recover all amounts accruing to LICENSOR prior to such termination and cancellation. Except as otherwise provided, should this Agreement be terminated for any reason, LICENSEE shall have no rights, express or implied, under any patent property which is the subject matter of this Agreement, nor have the right to recover any royalties paid LICENSOR hereunder. Upon termination, LICENSEE shall have the right to dispose of Licensed Products then in their possession and to complete existing contracts for such products, so long as contracts are completed within six (6) months from the date of termination, subject to the payment of royalties to LICENSOR as provided in Section 8 hereof.

15. CERTIFICATE OF INSURANCE:

15.1 LICENSEE shall maintain liability insurance coverage for the Product in the amount of three million dollars ($3,000,000) and at no expense to LICENSOR, LICENSEE shall name LICENSOR as an additional insured. Within fourteen (14) days of execution of this Agreement, LICENSEE shall provide a certificate of insurance to LICENSOR. LICENSEE agrees to carry and keep in force, at its expense, general liability insurance with limits not less than $1,000,000 per person

and $3,000,000 aggregate to cover liability for damages on account of bodily or personal injury or death to any person, or damage to property of any person. Such insurance shall contain an endorsement naming the University of Miami as an additional insured with respect to this Agreement. Insurance Certificates should be sent to the University of Miami upon execution of this Agreement and on the anniversary of that date every year thereafter, Office of Technology Transfer, 1475 NW 12th Avenue, Sewell Building Room 2012, Miami, Florida 33136.

15.2 Licensee shall not cancel such insurance without thirty (30) days prior notice to Licensor. Such cancellation shall be cause for termination.

15.3 The terms of this provision shall extend beyond termination of the agreement.

16. USE OF NAME:

LICENSEE shall not use the name of the University of Miami, or any of its employees, or any adaptation thereof, in any publication, including advertising, promotional or sales literature without the prior written consent of Mr. Humberto Speziani, Assistant Vice President , 327 Max Orovitz Bldg., 1507 Levante Avenue, Coral Gables, FL 33124-1432. LICENSOR shall notify LICENSEE within ten (10) days of being provided notice of its decision regarding each instance of intended use of name(s) name(s). The absence of a response by LICENSOR within this ten (10) day period shall constitute implied permission for LICENSEE to use such name in that instance. Any press releases concerning this Agreement must be mutually agreed upon by the parties.

17. GOVERNING LAW:

This Agreement shall be governed by and interpreted in accordance with the laws of the State of Florida. Any dispute arising out of this Agreement shall be heard in a court of competent jurisdiction located in Miami-Dade County, Florida.

18. CAPTIONS:

The captions and paragraph heading of this Agreement are solely for the convenience of reference and shall not affect its interpretation.

19. SEVERABILITY:

Should any part or provision of this Agreement be held unenforceable or in conflict with the applicable laws or regulations of any jurisdiction, the invalid or unenforceable part or provision shall be replaced with a provision which accomplishes, to the extent possible, the original business purpose of such part or provision in valid and enforceable manner, and the remainder of the Agreement shall remain binding upon the parties hereto.

20. SURVIVAL:

20.1 The provisions of Sections 5, 6 and 7 shall survive the termination or expiration of this Agreement and shall remain in full force and effect.

20.2 The provisions of this Agreement which do not survive termination or expiration hereof (as the case may be) shall, nonetheless, be controlling on, and shall be used in construing and interpreting, the rights and obligations of the parties hereto with regard to any dispute, controversy or claim which may arise under, out of, in connection with, or relating to this Agreement.

21. AMENDMENT:

No amendment or modification of the terms of this Agreement shall be binding on either party unless reduced to writing and signed by an authorized officer of the party to be bound.

22. WAIVER:

No failure or delay on the part of a party in exercising any right hereunder will operate as a waiver of, or impair, any such right. No single or partial exercise of any such right will preclude any other or further exercise thereof or the exercise of any other right. No waiver of any such right will be deemed a waiver of any other right hereunder.

23. CONFIDENTIALITY:

Each Party shall maintain all information of the other Party which is treated by such other Party as proprietary or confidential (referred to herein as "Confidential Information") in confidence, and shall not disclose, divulge or otherwise communicate such confidential information to others, or use it for any purpose, except pursuant to, and in order to carry out, the terms and objectives of this Agreement, and each party hereby agrees to exercise every reasonable precaution to prevent

and restrain the unauthorized disclosure of such confidential information by any of its Affiliates, directors, officers, employees, consultants, subcontractors, sublicensees or agents. LICENSEE's Confidential Information includes but is not limited to the development plan, development reports and all other financial and business reports, strategies, and agreements (including sublicenses) of LICENSEE. The parties agree to keep the terms of this Agreement confidential, provided that each party may disclose this Agreement to their authorized agents and investors who are bound by similar confidentiality provisions. Notwithstanding the foregoing, Confidential Information of a party shall not include information which: (a) was lawfully known by the receiving party prior to disclosure of such information by the disclosing party to the receiving party; (b) was or becomes generally available in the public domain, without the fault of the receiving party; (c) is subsequently disclosed to the receiving party by a third party having a lawful right to make such disclosure; (d) is required by law, rule, regulation or legal process to be disclosed, provided that the receiving party making such disclosure shall take all reasonable steps to restrict and maintain to the extent possible confidentiality of such disclosure and shall provide reasonable notice to the other party to allow such party the opportunity to oppose the required disclosure; or (e) has been independently developed by employees or others on behalf of the receiving party without access to or use of disclosing party's information as demonstrated by written record. Each party's obligations under this Section shall extend for a period of five (5) years from termination or expiration of this Agreement.

24. UNIVERSITY RULES AND REGULATIONS:

LICENSEE understands and agrees that University of Miami personnel who are engaged by LICENSEE, whether as consultants, employees or otherwise, or who possess a material financial interest in LICENSEE, are subject to the University of Miami's rule regarding outside activities and financial interests, and the University of Miami's Intellectual Property Policy. Any term or condition of an agreement between LICENSEE and such University of Miami personnel which seeks to vary or override such personnel's obligations to the University of Miami may not be enforced against such personnel, or the University of Miami, without the express written consent of an individual authorized to vary or waive such obligations on behalf of the University of Miami.

25. ENTIRE AGREEMENT:

This Agreement constitutes the entire agreement between the parties hereto respecting the subject matter hereof, and supersedes and terminates all prior agreements respecting the subject matter hereof, whether written or oral, and may be amended only by an instrument in writing executed by both parties hereto.

26. CONTRACT FORMATION AND AUTHORITY:

LICENSOR and LICENSEE each warrant and represent that the persons signing this Agreement on its behalf have authority to execute this Agreement and that the execution of this Agreement does not violate any law, rule or regulation applicable to it or any contract or other agreement by which it is bound.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective officers thereunto duly authorized to be effective as of the Effective Date.

HEAT BIOLOGICS I, INC.

Date: March 18, 2014 By: /s/ Jeffrey Wolf

Jeffrey Wolf
Name
CEO
Title

UNIVERSITY OF MIAMI

Date: March 4, 2014 By: /s/ Norma Sue Kenyon

Norma Sue Kenyon
Name
Vice Provost for Innovation
Title

EXHIBIT 21.1

Subsidiaries

Name of Subsidiary	Jurisdiction
Heat Biologics I, Inc.	Delaware
Heat Biologics III, Inc.	Delaware
Heat Biologics IV, Inc.	Delaware
Heat Biologics GmbH	Germany

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

Heat Biologics, Inc.
(A Development Stage Company)
Chapel Hill, North Carolina

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-193453) of Heat Biologics, Inc. of our report dated March 31, 2014, relating to the consolidated financial statements, which appear in this Form 10-K.

/s/ BDO USA, LLP
BDO USA, LLP

Raleigh, North Carolina
March 31, 2014

EXHIBIT 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14 OR RULE 15d-14 OF THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jeffrey Wolf, certify that:

1. I have reviewed this annual report on Form 10-K of Heat Biologics, 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(s) 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   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(s) 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 31, 2014

By: /s/ Jeffrey Wolf
Name: Jeffrey Wolf
Title: Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULE 13a-14 OR RULE 15d-14 OF THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Matthew Czajkowski, certify that:

1. I have reviewed this annual report on Form 10-K of Heat Biologics, 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(s) 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   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(s) 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 31, 2014

By: /s/ Matthew Czajkowski
Name: Matthew Czajkowski
Title: Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 32.1

CERTIFICATION PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. § 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Heat Biologics, Inc. (the "Registrant") hereby certifies, to such officer's knowledge, that:

(1) the accompanying Annual Report on Form 10-K of the Registrant for the year ended December 31, 2013 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, 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 Registrant.

Date: March 31, 2014

By: /s/ Jeffrey Wolf
Name: Jeffrey Wolf
Title: Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 32.2

CERTIFICATION PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. § 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Heat Biologics, Inc. (the "Registrant") hereby certifies, to such officer's knowledge, that:

(1) the accompanying Annual Report on Form 10-K of the Registrant for the year ended December 31, 2013 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, 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 Registrant.

Date: March 31, 2014

By: /s/ Matthew Czajkowski
Name: Matthew Czajkowski
Title: Chief Financial Officer
(Principal Financial Officer)