INOVIO PHARMACEUTICALS, INC.

FORM 10-K
(Annual Report)

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 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, 2010

OR

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

COMMISSION FILE NO. 001-14888

INOVIO PHARMACEUTICALS, INC.
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE	**33-0969592**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1787 SENTRY PARKWAY WEST BUILDING 18, SUITE 400 BLUE BELL, PENNSYLVANIA	**19422**
(Address of principal executive offices)	**(Zip Code)**

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE: (267) 440-4200

SECURITIES REGISTERED PURSUANT TO SECTION 12(B) OF THE ACT:

COMMON STOCK, $0.001 PAR VALUE	**NYSE Amex**
(Title of Class)	**(Name of Each Exchange on Which Registered)**

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T 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 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 Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See 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 ☐ (Do not check if a smaller reporting company) Smaller reporting company ☒

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

The aggregate market value of the voting and non-voting common equity (which consists solely of shares of Common Stock) held by non-affiliates of the Registrant as of June 30, 2010 was approximately $104,947,729 based on $1.02, the closing price on that date of the Registrant's Common Stock on the NYSE Amex.

The number of shares outstanding of the Registrant's Common Stock, $0.001 par value, was 127,254,031 as of February 24, 2011.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Commission pursuant to Regulation 14A in connection with the registrant's 2011 Annual Meeting of Stockholders (the "Proxy Statement') are incorporated by reference into Part III of this Report. Such Proxy Statement will be filed with the Commission not later than 120 days after the conclusion of the registrant's fiscal year ended December 31, 2010.

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Unless stated to the contrary, or unless the context otherwise requires, references to "Inovio," "the company," "our company," "our," or "we" in this report include Inovio Pharmaceuticals, Inc. and subsidiaries.

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PART I

ITEM 1. BUSINESS

This Annual Report (including the following section regarding Management's Discussion and Analysis of Financial Condition and Results of Operations) contains forward-looking statements regarding our business, financial condition, results of operations and prospects. Words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," "estimates" and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters, including statements regarding our business, our financial position, the research and development of our products and other statements regarding matters that are not historical are forward-looking statements.

Although forward-looking statements in this Annual Report reflect the good faith judgment of our management, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under the heading "Risk Factors" below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

Overview

We are engaged in the development of a new generation of vaccines, called DNA vaccines, focused on cancers and infectious diseases. Our SynCon ™ technology enables the design of "universal" DNA-based vaccines capable of providing cross-protection against new, unmatched strains of pathogens such as influenza. Our electroporation DNA delivery technology uses brief, controlled electrical pulses to increase cellular DNA vaccine uptake. Initial human data has shown this method can safely and significantly increase gene expression and immune responses. Our clinical programs include cervical dysplasia/cancer (therapeutic), avian influenza (preventative), hepatitis C virus ("HCV") and human immunodeficiency virus ("HIV") vaccines. We are advancing preclinical research for a universal seasonal/pandemic influenza vaccine as well as other products including dengue fever and prostate cancer vaccines. Our partners and collaborators include University of Pennsylvania, Drexel University, National Microbiology Laboratory of the Public Health Agency of Canada, Program for Appropriate Technology in Health/Malaria Vaccine Initiative ("PATH/"MVI"), National Institute of Allergy and Infectious Diseases ("NIAID"), Merck, ChronTech, University of Southampton, United States Military HIV Research Program ("USMHRP"), U.S. Army Medical Research Institute of Infectious Diseases ("USAMRIID") and HIV Vaccines Trial Network ("HVTN").

Industry Background

Historical Importance of Vaccines

We believe vaccines have saved more lives and prevented more human suffering than any other human invention. As recently as a century ago, infectious diseases were the main cause of death worldwide, even in the most developed countries. For instance, the Spanish flu pandemic of 1918 killed more people than all the bullets and bombs did during the Great War (WWI). Today, there is a vast range of vaccines available to protect against more than two dozen infectious diseases, especially for children. Our society has found that the only way to control or even eliminate diseases is consistent, widespread use of vaccines. For most of the past 25 years the vaccine industry was dominated by a few large pharmaceutical companies. Only in recent years improved pricing and technology have helped turned the vaccine market into a growth business.

Challenges Facing Vaccines

Despite the advances made to quality of life as a result of the development and use of vaccines over the past century, several significant challenges continue to exist. The technical limitations of conventional vaccine technology have constrained the development of effective vaccines for many diseases. Development of vaccines based on conventional methods requires significant infrastructure in research and manufacturing, and can be time consuming. Safety risks associated with conventional vaccine approaches may offset their potential benefits, as the conventional vaccines we have depended upon employ live or weakened viruses or different parts of a virus as vaccines. Further, conventional vaccines are still grown in eggs or cells and harvested over weeks of time with a very inefficient manufacturing process.

In addition, it is important to note a changing dynamic in the broader vaccine marketplace. Traditionally, vaccines have been predominantly focused on the pediatric market, intended to protect children from diseases that could cause them serious harm. Today, there is a growing interest in vaccines against diseases that may affect adolescents and adults, which include both sexually transmitted diseases and infections that strike opportunistically, such as during pregnancy, in immuno-compromised individuals, and in the geriatric population. Furthermore, there is encouraging data from and ongoing development of immunotherapies against cancers.

Inovio's Solution

We believe our DNA vaccine platform comprising our SynCon ™ DNA vaccine constructs and proprietary electroporation delivery technology has the potential to develop and deliver a new generation of vaccines that are safer than traditional vaccines (our platform uses a non-live, non-replicating vaccine), have equivalent or stronger immune-stimulating power than traditional vaccines (live viruses being among the best approaches for developing strong immune responses), are showing the potential to be used against diseases for which conventional vaccine technology cannot be applied, and have added advantages with respect to development time and cost. Preclinical studies in animals have demonstrated the safety and potential efficacy of our approach.

The Next Generation of Vaccines: DNA Vaccines

DNA vaccines may be designed to prevent a disease (prophylactic vaccines) or treat an existing disease (therapeutic vaccines). A DNA vaccine consists of a DNA plasmid encoding a selected antigen(s) that is introduced into cells of humans or animals with the purpose of evoking an immune response to the encoded antigen. Information encoded in the DNA plasmid directs the cells to produce antigenic proteins that may then trigger the immune system to mount one or both of two responses: the production of antibodies, known as a humoral immune response, and/or the activation of T-cells, known as a cellular or cell-mediated immune response. These responses can neutralize or eliminate infectious agents (e.g. viruses, bacteria, and other microorganisms) or abnormal cells (e.g. malignant tumor cells). DNA vaccines have several advantages over traditional vaccines in that they are non-pathogenic (meaning they cannot cause the disease), may be effective against diseases which cannot be controlled by traditional vaccines, and are relatively fast, easy and inexpensive to design and produce. DNA vaccines are stable under normal environmental conditions for extended periods of time and do not require continuous refrigeration. Another potentially major advantage of DNA vaccines is their relatively short development cycle. For example, DNA vaccines against newly identified viral agents may be developed within weeks or months, as opposed to the years often required to develop a traditional vaccine candidate. DNA vaccines against cancer use a portion of the genetic code of a cancer antigen to cause a host to produce proteins of the antigen that may induce an immune response.

Inovio's SynCon ™ DNA Vaccines

Our DNA vaccines are designed to generate specific antibody and/or T-cell responses. Our SynCon ™ technology provides processes that employ bioinformatics, which combine, extensive genetic data and sophisticated algorithms. Our design process uses the genetic make-up of a common antigen(s) from multiple strains of a virus within a viral sub-type or taxonomic group (family) of HIV, HCV, human papillomavirus

("HPV"), influenza and other diseases to synthetically create a "universal" antigen that does not exist in nature. This unmatched antigen has been shown to nevertheless induce a powerful immune response in humans against that antigen, providing protection not only against individual strains of the same sub-type that were used to develop this synthetic antigen but to also provide protection against newly emergent strains not used in designing the vaccine. These SynCon™ DNA vaccine constructs may provide a solution to the genetic "shift" and "drift" that is typical of infectious diseases. SynCon™ immunogens are able to elicit broad, diverse immune responses, which in theory are important to protect against variable pathogens such as influenza, dengue, HCV and HIV.

More technically speaking, SynCon ™ DNA vaccine antigens are designed by aligning numerous primary sequences and choosing DNA-based triplets for the most common or important amino acid at each site. These antigens are further optimized for codon usage, improved mRNA stability, and enhanced leader sequences for ribosome loading. The DNA inserts are therefore optimized at the genetic level to give them high expression capability in human cells.

We believe these design capabilities allow us to better target appropriate immune system mechanisms and produce a higher level of the coded antigen to enhance the overall ability of the DNA vaccine to induce the desired immune response.

Pre-clinical studies have shown that immunization of mice and non-human primates using SynCon ™ DNA vaccine constructs elicited an immune response against multiple, unmatched strains within different sub-types of HIV, HCV, HPV, dengue, prostate cancer and influenza viruses. Vaccine candidates for all these diseases are being advanced through preclinical and clinical studies.

Electroporation DNA Delivery Technology

Our DNA vaccine candidates are being delivered into cells of the body using our highly efficient, proprietary electroporation (EP) DNA delivery technology, which uses the brief application of high-intensity, pulsed electric fields to create temporary and reversible permeability, or pores, in the cell membrane. Efficient delivery of DNA vaccines in humans has been thought to be the shortcoming of earlier generations of DNA vaccines. Most drugs and biologics must enter into a cell through a cell membrane in order to perform their intended function. However, gaining entry into a cell through the outer cell membrane can be a significant challenge. Electronic pulse-induced permeabilization of the cellular membrane, generally referred to as electroporation, has the observable effect that there is a less restricted exchange of molecules between the cell exterior and interior—the benefit being that it allows and enhances the uptake of, for example, a biopharmaceutical agent previously injected into local tissue. The extent of membrane permeabilization depends upon various electrical, physical, chemical, and biological parameters.

The transient, reversible nature of this electrical permeabilization of membranes is the underlying basis of our electroporation systems, which are designed to harness this phenomenon by delivering controlled electrical pulses into tissue to facilitate the uptake of useful biopharmaceuticals. Our technology generates localized electric fields in targeted tissue to induce electroporation, which increases cellular uptake even for large molecules such as DNA. Most cell types and tissue can be successfully electroporated as long as applicators with the appropriate configuration of needle electrodes can be used to expose cells and tissues to the electric field.

Alternative delivery approaches based on the use of viruses and lipids are complex and expensive, and have in the past created concerns regarding safety and cause unwanted immune responses against themselves. We believe electroporation provides a relatively straightforward, cost effective method for delivering DNA into cells with high efficiency and minimal complications (as compared to viral vectors) and, importantly, inducing clinically relevant levels of gene expression.

Products and Product Development

Independently and together with our licensees and collaborators, we are currently developing a number of DNA-based vaccines and therapeutics for the prevention or treatment of cancer and chronic infectious diseases. The table below summarizes progress in our independent, collaborative and out-licensed product development programs as of December 31, 2010.

		Pre-Clinical Studies		Development Status				
Product Area	Product Target and Indication(s)	In Vitro	In Vivo	Phase I	Phase II	Phase III	Phase IV	Development Lead
Cancer DNA Vaccines	hTERT-expressing cancers	X	X	IP				Merck
	Chronic and acute myeloid leukemia (CML/AML)	X	X	X	IP			Univ. of Southampton
	Cervical cancer (VGX-3100)	X	X	IP	*			Inovio
	Prostate cancer (INO-5150)	X	X					Inovio
Infectious Disease DNA Vaccines								
	Avian influenza (VGX-3400x)	X	X	IP				Inovio
	Universal influenza (INO-3510)	X	X					Inovio
	HCV	X	X	X				ChronTech
	HCV	X	X					Inovio/UPENN/Drexel
	HIV (preventative) (PENNVAX ™ -B)(1)	X	X	X				HVTN
	HIV (preventative) (PENNVAX ™ -B)	X	X	IP				HVTN
	HIV (therapeutic) (PENNVAX ™ -B)	X	X	IP				UPENN
	HIV (preventative) (PENNVAX ™ -G)	X	X	IP				US MHRP
	HIV (preventative) (PENNVAX ™ -GP)	X	IP					NIH/NIAID
	Biodefense targets	X	X					USAMRIID
	Unspecified targets	X	IP					Inovio

X = Completed
IP = In Progress
* = We initiated Phase II clinical trial in March 2011.
(1) = Without electroporation

Cancer DNA Vaccines

Cancer vaccines are medicines that belong to a class of substances known as biological response modifiers. Biological response modifiers work by stimulating or restoring the immune system's ability to fight infections and disease. There are two broad types of cancer vaccines:

- **Preventative (or *prophylactic*) vaccines** , which are intended to prevent cancer from developing in healthy people; and
- **Treatment (or *therapeutic*) vaccines** , which are intended to treat an existing cancer by strengthening the body's natural defenses against the cancer.

Two types of cancer preventative vaccines are available in the United States, and one cancer treatment vaccine has recently become available.

The United States Food and Drug Administration (the "FDA") has approved two vaccines, Gardasil ® and Cervarix ® that protect against infection by the two types of HPV—types 16 and 18—that cause approximately 70 percent of all cases of cervical cancer worldwide. At least 17 other types of HPV are responsible for the remaining 30 percent of cervical cancer cases. HPV types 16 and/or 18 also cause some vaginal, vulvar, anal, penile, and oropharyngeal cancers.

In addition, Gardasil ® protects against infection by two additional HPV types, 6 and 11, which are responsible for about 90 percent of all cases of genital warts in males and females but do not cause cervical cancer.

Cervarix ®, manufactured by GlaxoSmithKline, is a bivalent vaccine. It is composed of virus-like particles (VLPs) made with proteins from HPV types 16 and 18. In addition, there is some initial evidence that Cervarix ® provides partial protection against a few additional HPV types that can cause cancer. However, more studies will be needed to understand the magnitude and impact of this effect. Cervarix ® is approved for use in females ages 10 to 25 for the prevention of cervical cancer caused by HPV types 16 and 18.

Gardasil ®, manufactured by Merck, is approved for use in females for the prevention of cervical cancer, and some vulvar and vaginal cancers, caused by HPV types 16 and 18 and for use in males and females for the prevention of genital warts caused by HPV types 6 and 11. The vaccine is approved for these uses in females and males ages 9 to 26.

The FDA has also approved a cancer preventative vaccine that protects against hepatitis B virus (HBV) infection. Chronic HBV infection can lead to liver cancer. The original HBV vaccine was approved in 1981, making it the first cancer preventative vaccine to be successfully developed and marketed. Today, most children in the United States are vaccinated against HBV shortly after birth.

In April 2010, the FDA approved the first cancer treatment vaccine. This vaccine, sipuleucel-T (Provenge ®, manufactured by United States based Dendreon), is approved for use in some men with metastatic prostate cancer. It is designed to stimulate an immune response to prostatic acid phosphatase (PAP), an antigen present on most prostate cancers. In a clinical trial, sipuleucel-T increased the survival of men with a certain type of metastatic prostate cancer by about 4 months Thanks to the success of Provenge ®, the development of immune cell-based cancer treatments is expected to gain momentum.

Therapeutic Cervical Cancer Vaccine—VGX-3100

HPV is the causative agent responsible for most cases of cervical cancer. At any given time, approximately 10% of women worldwide are infected with HPV. While roughly 70% of HPV infections are cleared by the body on its own, persistent HPV can lead to dysplasia, or premalignant changes in cells, of the cervix. Researchers have estimated the global prevalence of clinically pre-cancerous HPV infections at between 28 and 40 million. These HPV infections may lead to pre-malignant cervical dysplasia; persistent dysplasias may then progress to cancer. Every year, 470,000 cases of cervical cancer are diagnosed worldwide, and about half of the afflicted women, primarily in developing countries, die.

Preventative vaccines such as Gardasil ® and Cervarix ® are playing an important role in limiting new HPV infections. However, preventative vaccines cannot provide protection for those already infected with HPV, which is a large population. In addition, not all girls and women eligible to be vaccinated are receiving these vaccines. There is no viable therapeutic vaccine or drug to fight HPV, nor dysplasias and cancers caused by HPV. Current ablative or surgical procedures to remove cervical dysplasias and cancers are unappealing due to the potential for disfigurement and the psychological stress with perceived negative impacts on childbirth.

HPV types 16 and 18 are responsible for about 70% of cervical cancer incidence. Inovio's VGX-3100 is designed to raise immune responses against the E6 and E7 genes common to HPV types 16 and 18 that are present in both pre-cancerous and cancerous cells transformed by these HPV types. E6 and E7 are oncogenes that

play an integral role in transforming HPV-infected cells into cancerous cells. The goal is to stimulate the body's immune system to mount a T-cell response strong enough to cause the rejection of these infected or transformed cells from the body. The potential of such a vaccine would be to treat cervical cancers, pre-cancerous dysplasias (CINs), as well as persistent HPV infections and other cancers caused by these HPV types.

We recently completed enrollment of our Phase I study of our therapeutic cervical cancer vaccine (VGX-3100). VGX-3100 is a DNA vaccine targeting the E6 and E7 proteins of HPV types 16 and 18 and is delivered via in vivo electroporation. In September 2010, we presented top-line data showing achievement of best-in-class immune responses in our Phase I dose escalation study of VGX-3100. All dose groups developed significant antibody and T-cell immune responses. More notably, in the third and final dose group, five of six (83%) patients developed unprecedented T-cell responses not achieved by any other non-replicating vaccine platform in humans. Preliminary data from the trial indicated:

- Antigen-specific, dose-related T-cell responses across the three dose groups, averaging 1362 SFU per million cells in the high dose group responders;
- Strong antigen-specific antibody responses in all three dose groups;
- VGX-3100 delivered using Inovio's proprietary CELLECTRA ® intramuscular electroporation delivery device was generally safe and well tolerated at all dose levels; and
- There were no vaccine-related serious adverse events. Reported adverse events and injection site reactions were mild to moderate and required no treatment.

This dose escalation study tested the safety and immunogenicity of VGX-3100 in women previously treated for moderate or severe cervical intraepithelial neoplasia (CIN 2/3), a high grade premalignant lesion that may lead to cervical cancer. The trial enrolled patients in three cohorts of six subjects each with DNA vaccine doses of 0.6 mg (0.3 mg each of two DNA plasmids), 2.0 mg, and 6.0 mg. Each subject received the respective dose at day 0, month 1 and month 3. All subjects in the first and second dose groups have completed the nine-month follow-up period. We expect that patients in the third dose group will complete their follow-up in the first quarter of 2011.

Immunological analyses of blood samples collected before and after vaccination indicate that antigen-specific immune responses were induced against the target proteins produced by Inovio's vaccine. Using a validated, standard ELISPOT assay, antigen-specific cytotoxic T-lymphocyte (CTL, or killer T-cell) responses were observed against all four antigens (E6 and E7 proteins for HPV types 16 and 18). In this third cohort, five of six vaccinated subjects (83%) developed significant CTL responses, with average responses of 1362 SFU per million cells after three immunizations. This was a 118% increase compared to the intermediate dose cohort average of 626 SFU per million cells (four responders out of six) and a 174% increase compared to the low dose cohort average of 497 SFU per million cells (four responders out of six).

Antibody responses to E6 and E7 antigens were also measured. Specific antibody responses to tumor antigens can function as an important surrogate potency marker for determining the immunogenicity of a vaccine, i.e. the ability of a vaccine to induce an immune response. Antibodies were generated against all four antigens, as tested by the enzyme-linked immunosorbent assay (ELISA). In the third cohort, antibody responses were observed in five of six subjects (83%).

Overall, in all three doses combined, 13 out of 18 vaccinated subjects (72%) developed significant CTL responses, with positive responses ranging from under 100 to over 5000 SFU per million cells. Fifteen out of 18 vaccinated subjects (83%) developed antibody responses to at least one antigen with most subjects developing responses to two or more antigens.

While the study targeted only safety and immunogenicity as endpoints and did not address clinical efficacy, several literature reports support the hypothesis that induction of tumor antigen specific T-cell responses is

important in controlling cancer. Furthermore, there are examples of cancer vaccine candidates targeting the E6 and/or E7 proteins achieving significant clinical efficacy in patients with cervical or vulvar intraepithelial neoplasia, yet the CTL responses achieved in such studies were lower than those observed in the current VGX-3100 study.

Inovio is now planning a randomized, blinded Phase II study of VGX-3100 delivered using its CELLECTRA ® intramuscular electroporation device in women with HPV Type 16 or 18 and diagnosed with, but not yet treated for, cervical intraepithelial neoplasia (CIN) 2/3. CIN 2/3s are precancerous lesions that may progress to cervical cancer. Patients in the control group will not receive the therapy. Inovio intends to initiate this clinical study in the first quarter of 2011.

Therapeutic Prostate Cancer Vaccine—INO-5150

The development of a new treatment for prostate cancer would be a significant medical advance given that present treatment options (surgery, radiation and hormone deprivation), while somewhat effective, all carry deleterious side effects and often do not confer long-term cure. Across the United States, there were 218,000 new cases of prostate cancer and more than 32,000 deaths in 2010.

Inovio previously collaborated with the UK's University of Southampton and Institute of Cancer Research in a study evaluating a DNA vaccine for prostate cancer delivered using Inovio's electroporation delivery technology. The published data from this phase I/II study of a DNA vaccine encoding for human PSMA generated proof-of-concept levels of both antibody and T-cell immune responses in the 30 patients vaccinated in this study.

In January 2011, we announced the publication of a scientific paper in the journal *Human Vaccines* detailing potent immune responses in a preclinical study of Inovio's SynCon ™ DNA vaccine for prostate cancer targeting two antigens, PSA and PSMA. While current prostate cancer therapies target single antigens, in this study Inovio tested the hypothesis in mice that a broader collection of antigens, administered with Inovio's electroporation-based delivery technology, would improve the breadth and effectiveness of a prostate cancer immunotherapy.

This study, conducted by Inovio scientists and their collaborators, is described in the published paper entitled, "Co-delivery of PSA and PSMA DNA vaccines with electroporation induces potent immune responses." The SynCon ™ DNA vaccine evaluated in this study was generated by the creation of PSA and PSMA synthetic consensus immunogens based on human and macaque sequences, which enabled the amino acid sequences of the antigens to differ slightly from the native protein. In humans, this difference may aid in the evasion of self-tolerance while still mounting an anti-tumor immune response. Mice received two immunizations of highly optimized DNA vaccine delivered by electroporation. Immunogenicity was evaluated one week after the second vaccination. The resultant data showed the induction of strong PSA and PSMA-specific cellular immune responses and also significant antigen specific seroconversion, illustrating that both humoral and cellular immune responses can be generated by this approach.

In this pre-clinical study of the first SynCon ™ DNA vaccine against a cancer target, this dual-antigen immunotherapy generated strong antibody and T-cell immune responses. Taken together with the previous preclinical and clinical data, the current published results support the advancement of this product into a Phase I clinical study. Inovio is now advancing this program toward Phase I.

Southampton Collaboration: Leukemia

Leukemia is a malignant disease (cancer) of the bone marrow and blood characterized by the uncontrolled accumulation of blood cells. Leukemia accounts for at least 300,000 new cases and 222,000 deaths worldwide each year. This high ratio of deaths-to-cases (74%) reflects the poor prognosis of leukemia in many parts of the world, where the somewhat complex treatment regimes are not available. Approximately 45,000 new cases of leukemia were diagnosed in 2008 in the US, with 20,000 deaths. This represents 3% of all cancers in the United States, and 30.4% of all blood cancers. It is estimated that approximately $3 billion is spent in the United States each year to treat leukemia.

There are five types of leukemia based on rate of development and types of blood cells affected. Two of these are being evaluated in the study discussed in this release: 1) Acute myeloid leukemia (AML), a cancer of the myeloid line of blood cells, is characterized by rapid growth of abnormal white blood cells that accumulate in the bone marrow and interfere with the production of normal blood cells. AML is the most common acute leukemia affecting adults and its incidence increases with age. Only about one-third of those between ages 18-60 who are diagnosed with AML can be cured. With conventional chemotherapy 70% of the patients in the group under study will relapse within 2 years and current therapy is devastating in older adults.

Chronic myeloid leukemia (CML) is a type of cancer that causes the body to produce large numbers of immature and mature white blood cells (myelocytes). Approximately 85% of patients with CML are in the chronic phase at the time of diagnosis. Ultimately, in the absence of curative treatment, the disease progresses to an accelerated phase where median survival is around 3-5 years. Chronic myeloid leukemia can occur at any age, but it more commonly affects middle-aged and older people.

In January 2011, we announced the regulatory approval of a Phase 2 clinical trial (WIN Trial) to treat leukemia utilizing Inovio's new ELGEN 1000 automated vaccine delivery device. This open-label, multi-center clinical trial being run by the University of Southampton is evaluating a DNA vaccine to treat chronic myeloid leukemia and acute myeloid leukemia. Financial support for the trial is being provided by the UK research charity Leukaemia and Lymphoma Research (LLR) and by the Efficacy and Mechanisms Evaluation (EME) programme (which is funded by the UK Medical Research Council and managed by the UK National Institute for Health Research). The DNA vaccine was developed at the University of Southampton with funding from LLR and the charity Cancer Research UK.

Wilms' Tumor gene 1 (WT1) is highly associated with these types of cancer, which led the University of Southampton to design its leukemia DNA vaccine to target this antigen. Preclinical data from mice showed strong induction of antigen-specific CD8+ T cells and the ability to kill human tumor cells expressing WT1. There have been several prior clinical studies in humans using parts of the WT1 gene, notably as peptide vaccine candidates, demonstrating the production of modest levels of CD8+ T-cell responses and measurable clinical responses, although both effects were transient. This is the first study to combine DNA vaccination with electroporation delivery of WT1 antigens with the goal of stimulating high and durable levels of immune responses, which are considered critical for improving clinical outcomes.

The single dose level, Phase 2 study, called "WT1 immunity via DNA fusion gene vaccination in haematological malignancies by intramuscular injection followed by intramuscular electroporation," led by Professor Ottensmeier and Dr. Katy Rezvani of Imperial College London and Hammersmith Hospital, London, is designed to recruit two patient groups. One group is planned to recruit up to 37 CML patients and the other up to 37 AML patients. All participants will initially receive six doses of two DNA vaccines (called p.DOM-WT1-37 and p.DOM-WT1-126) delivered at four week intervals. Vaccine responders may continue with booster vaccinations every three months out to 24 months. An additional 100-110 AML/CML patients will be enrolled across the two arms as non-vaccinated controls for comparison. The primary endpoints will be molecular response to a disease marker called BCR-ABL in CML patients and time to disease progression in AML patients. The study will also monitor WT1 transcript levels, immune responses to the WT1 antigen, time to progression and overall survival, and two-year survival in the AML group. The trial will take place at hospitals in Southampton, London and Exeter over the next two years. Regulatory approval to start this clinical study was provided by the UK Medicines and Healthcare Products Regulatory Authority (MHRA) and Gene Technology Advisory Committee (GTAC).

This is the first clinical trial using Inovio's new ELGEN-1000 automated device, which is based on its proprietary electroporation delivery platform. The device's needle electrodes automate vaccine delivery at the push of a button and co-locate subsequent controlled, millisecond electrical pulses that increase cell membrane permeability and dramatically improve cellular uptake of the vaccine. Inovio's electroporation systems have been shown to increase levels of gene expression (production of the antigen coded by the DNA vaccine) up to 1000-fold and increase immune responses to the antigen up to 100-fold.

Merck Collaboration: Cancer Vaccines

In May 2004, we announced a collaboration and license with Merck for the development of certain DNA vaccines. Merck began patient enrollment for a second Phase I DNA vaccine cancer study in October 2008. This DNA vaccine encodes for hTERT, an antigen related to non-small cell lung, breast and prostate cancers. The vaccine is delivered using our electroporation DNA delivery technology. We have received milestone payments for our contribution to the collaboration with Merck, which has so far demonstrated the high level of gene delivery and expression that is thought to be necessary for the induction of a therapeutic immune response. Merck has funded all clinical development costs of the candidates under our collaboration and license agreement to date. Further development of products under the collaboration and license agreement may lead to additional milestone payments and royalties to us.

Infectious Disease DNA Vaccines

Therapeutic HCV Vaccine

Hepatitis is a disease characterized by inflammation of the liver. HCV is a major cause of acute hepatitis. HCV is spread primarily by direct contact with human blood, the major causes worldwide being the use of unscreened blood transfusions, and re-use of needles and syringes that have not been adequately sterilized. As many as 70% – 90% of newly infected patients may progress to develop chronic infection. Of those with chronic liver disease, 5% – 20% may develop cirrhosis. About 5% of infected persons may die from the consequences of long term infection (due to liver cancer or cirrhosis). Globally, an estimated 170 million people are chronically infected with HCV, which represents a reservoir sufficiently large for HCV to persist, and 3 to 4 million persons are newly infected each year. In the US, while new incidences of HCV have dropped dramatically, an estimated 4.1 million (1.6%) Americans have been infected with HCV, of whom 3.2 million are chronically infected. Persons with chronic HCV infection face an increased risk of developing hepatocellular cancer, a difficult-to-treat cancer with a poor prognosis.

In January 2006, we signed an agreement with Sweden-based ChronTech (formerly called Tripep) to co-develop a therapeutic vaccine for HCV using electroporation. The vaccine is based on ChronTech's proprietary HCV antigen construct and delivered to infected individuals using our MedPulser ® DNA Delivery System.

In November 2009, we announced the completion of the Phase I clinical study with ChronTech of the ChronVac-C HCV DNA vaccine delivered using our electroporation technology. The study established the safety and tolerability of this therapy, with vaccine-induced immune responses and transient effects on the serum levels of HCV in these chronically infected patients providing proof-of-concept of DNA vaccines delivered using electroporation. We are preparing the next stage of the development plan for this program in collaboration with ChronTech.

In April 2010, we announced, along with our collaborators from Drexel University, Cheyney University, and the University of Pennsylvania, that we received a combined $2.8 million grant to further study and advance Inovio's proprietary DNA vaccine to treat HCV using Inovio's electroporation delivery system.

The grant is currently funding pre-clinical studies using an expanded set of SynCon ™ immunogens to test the safety and effect on the immune system of our novel vaccines designed to treat persons who are chronically infected with HCV and have not responded to currently available therapies.

Preventative and Therapeutic HIV Vaccines

Since its discovery in 1981, AIDS has killed more than 25 million people. In 2005, the total number of HIV-infected people worldwide reached an estimated 38.6 million, with 4.1 million newly infected individuals. In 2005, the disease claimed approximately 3.1 million lives. UNAIDS estimates that 60,000 individuals were newly infected with HIV across the United States and Western Europe in 2005; bringing the number of HIV-infected people to approximately 1.75 million. Over half of these individuals live in the United States.

In 2005, the HIV market accounted for 1.8% of global pharmaceutical sales and 17% of total anti-infective sales. Although this is relatively small compared to other therapeutic areas, the HIV market has experienced strong growth. It generated $7.4 billion of sales in 2005 and experienced a compound annual growth rate of 13.3% from 2001-2005, making it one of the fastest growing infectious disease markets.

Effective vaccines have been actively pursued for over 20 years, without success. HIV represents one of the most confounding targets in medicine. The virus' high mutagenicity (ability to mutate) has made effective vaccine development very challenging. Its outer envelope, swathed in sugar molecules, is difficult to attack, and HIV strikes the very cells that the immune system launches to thwart such an infection. Although several drugs (antiretrovirals) are available to treat the patients once they are infected, vaccines are necessary to stop the spread of disease and perhaps reduce the need for antiretroviral treatment.

After many years of rapid development and introduction of new anti-retroviral drugs for treatment of HIV infection, the introduction of new drugs to the market for treatment of HIV infection appears to be waning. Available drugs, despite several limitations, have set a high standard that must be met in terms of efficacy. However, there is still a significant need for better HIV therapies and patents are beginning to expire on early HIV drugs. For example, zidovudine is already available as a generic drug and other early HIV drugs will soon face such generic competition. To maintain HIV-related revenues, as well as meet the needs of HIV-infected patients, pharmaceutical companies must develop new drugs with improved profiles, especially in terms of toxicity and increased barriers to development of viral resistance. As a result, the medical and commercial needs are fueling continued interest in the development of new nucleosides (NRTIs), non-NRTIs, and protease inhibitors (PI) for treatment of HIV infection.

Noting that many long-term survivors have high counts of killer CD8+ T cells, the HIV vaccine field has turned to stimulating the immune system to generate those cells. Recent HIV vaccine candidates adopted the use of an adenovirus or a common human cold virus that had been altered to prevent viral replication. These vaccines have proven to not be effective. We believe a different approach is needed to develop an effective vaccine for HIV.

Our HIV vaccines consist of candidates for HIV prevention as well as therapy or treatment. Furthermore, our vaccines are differentiated according to the targeted region of the world with the greatest prevalence of certain HIV subtypes. PENNVAX ™-B is designed to target HIV clade B (most commonly found in the United States, North America, Australia and the European Union (EU). PENNVAX ™-G is designed to target HIV clades A, C and D, which are more commonly found in Asia, Africa, Russia and South America.

Our PENNVAX™-B vaccine (without electroporation delivery) Phase I trial (HVTN-070) was completed in 2009. This 120 patient study was sponsored by the National Institute of Allergy and Infectious Diseases' (the "NIAID") Division of AIDS (DAIDS) and was conducted by the HVTN to evaluate the vaccine's safety and immunogenicity in healthy volunteers. Following this study, in October 2009, along with the HVTN, we initiated a follow-on Phase I study (HVTN-080) of PENNVAX ™-B (with and without a cytokine) delivered with electroporation using the CELLECTRA ® delivery device in healthy, uninfected individuals. Inovio previously reported data from non-human primates, demonstrating up to a 100-fold enhancement in immune responses resulting from the vaccine when delivered via in vivo electroporation compared to syringe injection without electroporation. This Phase I clinical study of PENNVAX ™-B (HVTN-080) vaccinated 48 healthy, HIV-negative volunteers to assess safety and levels of immune responses generated by Inovio's PENNVAX ™-B vaccine delivered with its CELLECTRA ® electroporation device. PENNVAX ™-B is a SynCon ™ DNA vaccine that targets HIV gag, pol, and env proteins. This randomized, double-blind, multi-center study is sponsored by the NIAID, an agency of the National Institutes of Health (the "NIH"), and conducted by the NIAID-funded HVTN, at several clinical sites.

Of the 48 total volunteers, eight subjects received a placebo, 10 subjects received a 1 mg dose of PENNVAX ™-B vaccine, and 30 subjects received a 1 mg dose of PENNVAX™-B along with IL-12 DNA. All volunteers received vaccine or placebo administered with electroporation at months 0, 1, and 3. T-cell immune responses were detected using a validated flow cytometry-based intracellular cytokine staining (ICS) assay at the HVTN core immunology laboratory at the Fred Hutchinson Cancer Research Center in Seattle, WA.

Preliminary data from the trial reported in November included safety data from all 48 trial participants and immunogenicity data from 38 out of 40 samples from vaccine recipients post-second-dose and from 31 out of 40 samples from vaccine recipients post-third-dose. The data indicate that antigen-specific T-cell responses were generated by the vaccine in a majority of subjects. Either CD4+ or CD8+ or both T-cell responses were observed against at least one of the vaccine antigens in 61% (23 out of 38) of evaluated subjects after two vaccinations. After three vaccinations, 84% (26 out of 31) of evaluated subjects had positive T-cell responses.

A second IND is now open, allowing testing of PENNVAX ™-B in a therapeutic setting. This Phase I trial (HIV-001) is being conducted in collaboration with the University of Pennsylvania and targets HIV-positive individuals. The electroporation-delivered PENNVAX ™-B arm of this trial started in 2011. If the Phase I studies are successful in demonstrating enhanced immunological responses to the HIV antigens, then we intend to partner with the HVTN or another governmental organization to further develop the HIV candidate vaccines through Phase II and Phase III clinical studies. It is anticipated that given the critical need for preventative and therapeutic vaccines for HIV, any commercialization will likely be through a big pharmaceutical company partner for the North American and EU markets and a world health agency for the developing world markets.

In September 2010, the United States Military HIV Research Program (MHRP) initiated a Phase I trial (RV262) using one of our prophylactic HIV vaccines in a prime-boost strategy. This program was developed to protect against diverse subtypes of HIV-1 prevalent in North America, Europe, Africa, and South America. The study is being conducted by the United States MHRP through its clinical research network in the US, East Africa and Thailand. This clinical trial was designed to test a unique prime-boost preventative HIV vaccination strategy aimed at global coverage. The prime is a plasmid DNA vaccine, PENNVAX ™-G, and the boost is a virus vector vaccine, Modified Vaccinia Ankara-Chiang Mai Double Recombinant (MVA-CMDR). Together, the vaccines are designed to deliver a diverse mixture of antigens for HIV-1 subtypes A, B, C, D and E. The study will test PENNVAX ™-G delivered with electroporation in conjunction with a modified vaccinia Ankara- Chiang Mai double recombinant boost. The NIAID is sponsoring the study, which we expect will enroll 92 total participants and is designed to assess safety and immune responses.

Due to its prevalence and global health importance, there is a large amount of funding available through various governmental and non-governmental organizations. Most notably, the NIH awarded us a contract to develop a preventative HIV DNA vaccine candidate in conjunction with electroporation technology for intradermal delivery of DNA vaccines. The contract was awarded under the NIAID's HIV Vaccine Design and Development Teams program and brings together HIV vaccine experts from the University of Pennsylvania School of Medicine and our company. The contract provides up to $24.6 million of funding over seven years, including a five-year base period and follow-on option years. The program is focusing on the vaccine candidate, PENNVAX ™-GP, which was developed in the laboratory of DNA vaccines pioneer Professor David B. Weiner at the University of Pennsylvania School of Medicine and licensed to us. The DNA-based vaccine will be delivered using our novel intradermal electroporation technology. This program expands our portfolio of candidate HIV vaccines. The funding and development program covers preclinical optimization, immunogenicity and challenge studies in animal models, IND-enabling toxicology studies, cGMP (current good manufacturing practices) manufacturing of all components of the DNA vaccine and CELLECTRA ® device, and the conduct of a Phase I human clinical trial. cGMP manufacture of the PENNVAX ™-GP constructs to support clinical trials will be conducted at the manufacturing facility of our affiliate, VGX International, Inc. ("VGX Int'l").

HIV remains a challenging and tremendously important area of medical research, and we value the NIH's support to further evaluate the immunogenicity and efficacy of our electroporation delivery system and novel preventative HIV vaccine candidate.

Avian Influenza (H5N1) Vaccine—VGX-3400x

Influenza is one of the most communicable diseases and it typically affects children and the elderly most severely. Complications from influenza cause more than 200,000 hospitalizations and lead to approximately

36,000 deaths each year in the United States alone, according to the Centers for Disease Control. The world is annually subjected to two influenza sessions (one per hemisphere), between three and five million cases of severe illness, and up to 500,000 deaths. A pandemic occurs every ten to twenty years, which infects a large proportion of the world's population and can kill tens of millions of people as the "Spanish Flu" did in just two years (50-100 million deaths during 1918-1919).

New influenza viruses are constantly produced by mutation or reassortment, and can develop resistance to standard antiviral drugs. H5N1 has been spreading from Asia despite the belief that it was under control immediately after outbreaks there in 2004. In 2005, there were reports of H5N1 in wild birds in Europe. In 2006, there were reports of a H5N1 strain in wild birds and poultry in Africa and the Near East. According to the World Health Organization, the H5N1 bird flu has infected 467 people in 15 countries since 2003, with 282 deaths (60% death rate). While H5N1 has never been passed person-to-person and has not spread widely, one concern is the potential for the lethal H5N1 to "reassort" with another of the influenza sub-types that have been prone to spread more rapidly in humans, possibly creating a more dangerous influenza strain. Through 2006, over 140 million birds have been killed and over $10 billion has been spent to try to contain H5N1 avian influenza.

In pre-clinical studies, vaccination with VGX-3400 generated broadly protective levels of hemaglutination inhibition titers in 100% of the immunized animals in five separate animal models—mice, ferrets, rabbits, pigs, and rhesus monkeys. Vaccination with VGX-3400x also protected animals from an unmatched, lethal H5N1 virus challenge in mouse, ferret, and monkey models. VGX-3400x also induced significant levels of antigen-specific CD8+ killer T cell responses.

In June 2010, we initiated our United States Phase I clinical trial to evaluate our SynCon ™ H5N1 (avian) influenza DNA vaccine, VGX-3400X. This H5N1 vaccine study represents the first step in demonstrating Inovio's novel universal influenza vaccine approach, which aims to bypass the current requirement for annual strain and subtype-specific influenza vaccines by developing a single vaccine to potentially protect against all strains within multiple targeted sub-types, such as H5N1 and H1N1, posing risk to humans.

This dose escalation study is designed to test the safety and immunogenicity of VGX-3400x. VGX-3400x consists of three distinct DNA plasmids containing a universal consensus hemaglutinin (HA) antigen derived from different H5N1 flu viruses; a universal consensus neuraminidase (NA) antigen encompassing different N1 subtypes such as H5N1 and H1N1; and a universal consensus nucleoprotein (NP) fused to a small portion of the m2 protein (m2E), both also encompassing N1-based viruses. We expect the clinical trial to be conducted at two sites in the United States. Thirty healthy subjects will be enrolled in three dose groups of 0.2 mg, 0.67 mg, and 2.0 mg of each plasmid delivered via Inovio's proprietary electroporation technology. The primary objectives are to assess safety and tolerability. The secondary objective is to measure antigen-specific antibody and cellular immune responses, in particular hemaglutination inhibition (HI) responses, i.e. a measure of protection, against multiple strains of H5N1 influenza.

In March 2010, we announced that VGX received approval in Korea to begin a Phase I clinical trial in healthy volunteers for our SynCon ™ preventative DNA vaccine (VGX-3400) targeting H5N1 avian influenza. We are co-developing VGX-3400x with Korea-based VGX Int'l. We anticipate that the 30-subject 3-dose Phase I study will be conducted in multiple clinical research sites in Korea and, using a similar study design, evaluate three dose levels of the vaccine for safety and immunogenicity.

The results from both of these intramuscular (IM) EP delivered vaccine studies will be utilized in support of the intradermal (ID) EP delivered INO-3510 universal flu vaccine program.

Although a number of companies have well-developed avian influenza programs and lead vaccine candidates have entered into national stockpiles (US and EU), we believe there exists a need for new antigen-sparing, rapidly adaptable and easily scalable technologies to prepare for the as yet unknown target presented by the next form of avian influenza. Our SynCon ™ technology provides protection from known avian influenza viruses (in animal studies) and has also shown the ability to protect against newly emergent, unmatched strains.

Universal Influenza (H5N1/H1N1) Vaccine—INO-3510

Conventional vaccines are strain-specific and have limited ability to protect against genetic shifts in the influenza strains they target. They are therefore modified annually in anticipation of the next flu season's new strain(s). If a significantly different, unanticipated new strain emerges, such as the 2009 swine-origin pandemic strain, then the current vaccines provide little or no protective capability. In contrast, we believe that our design approach to characterize a broad consensus of antigens across variant strains of each influenza sub-type creates the ability to protect against new strains that have common genetic roots, even though they are not perfectly matched. By formulating a single vaccine with some or all of the key sub-types, protection may be achieved against seasonal as well as pandemic strains such as swine flu or pandemic-potential strains such as avian influenza noted above. We are focused on developing DNA-based influenza vaccines able to provide broad protection against known as well as newly emerging, unknown seasonal and pandemic influenza strains.

Instead of targeting a specific strain or strains, we have developed a universal vaccine strategy to deal with the ever-changing flu threats. Using our SynCon ™ process, our scientists designed DNA vaccines targeting an optimal consensus of HA, NA, and NP proteins derived from multiple strains of each of the sub-types H1N1, H2N2, H3N2 (these three influenza sub-types having been responsible for the majority of seasonal and pandemic influenza outbreaks in humans during the last century), as well as H5N1. In theory, consensus HA vaccine constructs from each sub-type, delivered in a single shot with our electroporation device, could potentially protect vaccinated subjects from 90-95% of all human seasonal and pandemic influenza concerns.

Moreover, using our approach the vaccines might not have to be administered annually after the first few priming sessions. Rather, the same combination could be used to boost the immune system every few years.

By using SynCon ™ consensus sequences, we have developed potent and cross-protective DNA vaccines against multiple influenza strains. Accordingly, we are evaluating the development of two additional DNA vaccines for influenza: INO-3510, which is intended to protect against H1N1 and H5N1, and a "universal" influenza vaccine, to protect against these two sub-types as well as other sub-types. The universal flu vaccine, which can include a combination of plasmids encoding H1, H2, H3, H5, NA, and NP, is currently being evaluated in animal models. These vaccines are delivered via the CELLECTRA ® electroporation system and in animals have induced robust humoral immune responses, which are required for protection from pathogenic influenza infection. The vaccine can be administered with either intradermal or intramuscular injection, although the former raises a greater antibody response.

In January 2011, we announced the presentation of recent preclinical data using our next generation of minimally invasive intradermal (skin) electroporation delivery devices. While our current IM delivery technologies are well tolerated, we are also advancing device development to achieve various desirable attributes. One ID device penetrates to no more than 3 mm, compared to intramuscular devices that go deeper. Furthermore, a second ID device is a minimally invasive surface electroporation (SEP) device that sits on the surface of the skin and uses a virtually undetectable scratch to facilitate delivery of the vaccine. With the advancement of these devices, our aim is to make electroporation delivery amenable to mass prophylactic vaccination by decreasing dose levels, increasing tolerability of the vaccination, and increasing the breadth of viable vaccine targets.

The highlighted data related to influenza, HIV, malaria, and smallpox antigens, demonstrating that DNA delivery with this newer generation of ID including its SEP devices yields levels of immunogenicity in terms of both antibody and T-cell responses and/or efficacy against a virus challenge that is comparable to intramuscular electroporation devices currently in the clinic. In particular, immune responses achieved with influenza antigens targeting H1, H3, and H5 immunogens yielded hemaglutination titers of greater than 1:40 (a level considered protective in humans) in 100% of vaccinated animals after two immunizations, with magnitudes comparable to or better than those reported from animal studies of the IM-delivered flu vaccine (VGX-3400) currently in the clinic.

The first vaccine utilizing Inovio's intradermal electroporation delivery to be tested in a human study will be INO-3510, a universal H1N1 and H5N1 SynCon ™-DNA vaccine. We expect to initiate a Phase I clinical study of this vaccine in the second quarter of 2011.

DNA Vaccines for Biodefense and Biosecurity

A number of infectious agents that are relatively rare today are poised for an upsurge in incidence by either "natural" or terrorism-related means. For example, natural threats are posed by the influenza strain H5N1. At the same time, an engineered influenza virus for intentional release would pose a significant human threat.

Since 2001, the United States government has spent or allocated over a billion dollars in funding to address the threat of biological weapons. United States funding for bioweapons-related activities focuses primarily on research for and acquisition of medicines for defense. Biodefense funding also goes toward stockpiling protective equipment, increased surveillance and detection of biological agents, and improving state and hospital preparedness. The increase in this type of funding is mainly due to the Project BioShield Act adopted in 2004.

There are opportunities to secure development funding and for proof-of principle DNA vaccine studies for biowarfare pathogens. Over the past five years, we have been successful at securing funding from the US government for such projects.

The company continues to actively pursue grant and contract funding from the NIH, Department of Defense and other government funding agencies as an important source of non-dilutive funding to support development of specific technologies that are broadly applicable across multiple product development programs in the areas of cancer, infectious diseases and biodefense. Based on various initiatives and with the support of NIH funding we are an active collaborator with the Department of Defense (U.S. Army) and continue research and development of DNA-based vaccines delivered via our proprietary electroporation system. Specifically, our projects are focused on identifying DNA vaccine candidates with the potential to provide rapid, robust immunity to protect against bio-warfare and bioterror attacks as well as development of our electroporation based equipment.

Animal Health/Veterinary

VGX Animal Health, Inc. (VGX AH), a majority-owned subsidiary has licensed LifeTide ® a plasmid-based growth hormone releasing hormone (GHRH) technology for swine. LifeTide ® is one of only four DNA-based treatments approved for use in animals and is the only DNA-based agent delivered using electroporation that has been granted marketing approval (Australia). We are working on partnering and/or monetizing this program.

Inovio is also developing a novel DNA vaccine for foot-and-mouth disease (FMD) administered by Inovio's proprietary vaccine delivery technology. The FMD virus is one of the most infectious diseases affecting farm animals including cattle, swine, sheep and goats, and is a serious threat to global food safety.

VGX AH is also developing a GHRH-based treatment for cancer and anemia in dogs and cats.

Additional Applications of Our DNA Delivery Technology

In addition to using our technology for human drug and vaccine delivery, it can be used for research to validate new drug targets, to generate monoclonal antibodies, deliver siRNA and other molecules. The use of our technology for research increases general awareness for the technology and may facilitate its transition into clinical development for these other applications. In addition, we believe there may be a benefit to exploring future potential applications for our technology in the area of gene therapy to treat genetic disorders.

We continue to pursue limited opportunities in the areas of stem cells, ex-vivo applications and RNAi, where collaborators would provide the majority of required development resources.

Our Electroporation DNA Delivery Technology

Choice of Tissue for DNA Delivery

Skeletal muscle has been a core focus for delivery of DNA vaccines via electroporation because it is mainly composed of large elongated cells with multiple nuclei. Muscle cells are non-dividing, hence long-term expression can be obtained without integration of the gene of interest into the genome. Muscle cells have been shown to have a capacity for secretion of proteins into the blood stream. Secreted therapeutic proteins may therefore act systemically and produce therapeutic effects in distant tissues of the body. In this respect, the muscle functions as a factory for the production of the biopharmaceutical needed by the body. We envision that delivery of DNA by electroporation to muscle cells will circumvent the costly and complicated production procedures of viral gene delivery vectors, protein-based drugs, conventional vaccines and monoclonal antibodies. This approach may provide long-term stable expression of a therapeutic protein or monoclonal antibody at a sustained level.

For vaccination the DNA causes muscle cells to produce antigenic proteins that the immune system will identify as foreign and against which it will mount an immune response. As with conventional vaccines, the immune system will then develop memory of this antigen (and related disease) for future reference. Intramuscular delivery by electroporation of DNA encoded antigens has been shown to induce both humoral (antibody) and cellular (T-cell) immune responses.

While we have generated preclinical and preliminary clinical evidence that intramuscular electroporation-based DNA delivery will be effective for a number of vaccines, electroporation of the skin may also be a relevant route of administration. Skin or intradermal administration is important and is becoming an attractive site for immunization given its high density of antigen presenting cells (APCs). Unlike muscle, skin is the first line of defense against most pathogens and is therefore very rich in immune cells and molecules. Skin specifically contains certain cells that are known to help in generating a robust immune response. With intradermal administration of electroporation, we may be able to demonstrate a comparable immune response to muscle delivery. Drug delivery into skin, or dermal tissue, is the most attractive method given that the skin is the largest, most accessible, and most easily monitored organ of the human body, and it is highly immunocompetent (able to recognize antigens and mount an immune response to them).

We have also investigated *in vivo* delivery of genes directly into tumor cells. Tumor cells can be readily transfected with genes encoded with selected cytokines or potentially lethal proteins for the treatment of a variety of cancers. The goal of effective tumor delivery is the ultimate elimination of the transfected tumor, and we have experienced very few concerns regarding the safety of the procedure in our trials to date.

Our Electroporation Systems

Existing generations of electroporation systems consist of an electrical pulse generator box the size of a large laptop attached by a cord to a separate needle-electrode applicator. We recently unveiled our new CELLECTRA ® -SP series of hand-held, cordless electroporation devices. The new CELLECTRA ® - SP devices bring together groundbreaking design and engineering advancements to combine all components into a self-contained, easy-to-use portable device the size of a cordless hand tool.

CELLECTRA ® System

There are several configurations in the CELLECTRA ® device family. The first covers intramuscular (IM) delivery of DNA; the second covers the intradermal/subcutaneous delivery (ID) of DNA. Both devices have been validated, manufactured under cGMP and are ready for use in human clinical trials. We have filed a device master file (MAF) with the FDA covering the use of the CELLECTRA ® -IM EP device in human clinical trials. The device is intended to be used in combination with a DNA plasmid-based vaccine.

The new CELLECTRA ® - SP products combine the functionality of our current generation of skin and intramuscular electroporation devices in clinical testing with enhanced form, design, and portability. All components from the pulse generator and applicator are integrated into a cordless, rechargeable device. The rechargeable battery can enable vaccination of several hundred subjects, making the device highly amenable to mass vaccination. The devices are designed to accommodate different electrode arrays to meet the requirements of the particular vaccine and tissue for delivery (skin or muscle).

Elgen System

The Elgen ® DNA Delivery System is designed primarily for muscle delivery. It consists of a computer-controlled, motorized two needle delivery device that injects DNA and delivers electroporation pulses through one pair of needles. An earlier prototype version of this experimental system is currently under evaluation in our clinical trial for a prostate cancer vaccine at the University of Southampton in the U.K.

MedPulser ® DNA Delivery System

The MedPulser ® DNA Delivery System (DDS) was developed to optimize the delivery of DNA into muscle cells. The modified system is similar to the MedPulser ® Electroporation System. The primary differences are in the parameters of the electric pulses delivered by the generator and the needle-electrode configuration of the applicator. The pulse is designed specifically for DNA delivery with a lower strength electrical field of longer duration than for tumor electroporation. The applicator has a four needle-electrode array consisting of one set of opposite pairs. They are available in a range of configurations to meet the requirements of a variety of applications.

Next Generation Devices

In February 2011, we announced new advanced devices that are using needle-free, contactless electroporation technology for DNA vaccine delivery. This is the next generation DNA vaccine delivery technology, which provides the powerful enabling capabilities of electroporation without contacting the skin Our pre-clinical research was highlighted in a paper published in the scientific journal *Human Vaccines* . While current Inovio electroporation devices have been shown to be safe and well-tolerated in multiple human studies, Inovio has been advancing research to achieve the most optimal device characteristics to facilitate mass vaccinations. The paper appearing in *Human Vaccines* , “Piezoelectric permeabilization of mammalian dermal tissue for in vivo DNA delivery leads to enhanced protein expression and increased immunogenicity,” authored by our scientists, describes an innovative electroporation method optimized for delivery into skin. This new method is based on piezoelectricity, which is the generation of an electric field or electric potential by certain materials in response to applied mechanical stress.

All of our electroporation-based DNA vaccine delivery systems noted above can increase levels of gene expression (i.e. production of the immune-stimulating protein the vaccine was coded to produce) of “naked” DNA vaccines by 100-fold or more compared to delivery of naked DNA vaccines via conventional injection alone. Delivery of our SynCon ™ DNA vaccines into muscle or skin tissue with our electroporation systems have generated robust immune responses in disease models including influenza (H5N1 and H1N1), smallpox, and HIV. The strong immune responses resulted in protection of immunized animals, most notably ferrets and primates, from death and illness following a challenge with the respective influenza pathogens.

More significantly, we have translated these animal study findings into positive clinical results. Our clinical studies with electroporation delivery of DNA vaccines in cancer patients have been among the first to demonstrate a generation of potent antigen-specific immune responses in humans.

Collaborations and Licensing Agreements

We have entered into various arrangements with corporate, academic, and government collaborators, licensors, licensees and others. These arrangements are summarized below and elsewhere in this annual report. In addition, we conduct ongoing discussions with potential collaborators, licensors and licensees.

On March 24, 2010, we entered into a Collaboration and License Agreement (the "Agreement") with VGX Int'l. Under the Agreement, we granted VGX Int'l an exclusive license to our SynCon ™ universal influenza vaccine (the "Product") delivered with electroporation to be developed in certain countries in Asia.

As consideration for the license granted to VGX Int'l, we will receive a research and development initiation fee, as well as research support, annual license maintenance fees, and royalties on net Product sales. In addition, contingent upon achievement of clinical and regulatory milestones, we will receive development payments over the term of the Agreement. The Agreement also provides Inovio with exclusive rights to supply devices for clinical and commercial purposes (including single use components) to VGX Int'l for use in the Product.

The term of the Agreement commenced upon execution and will extend on a country by country basis until the last to expire of all Royalty Periods for the territory (as such term is defined in the Agreement) for any Product in that country, unless the Agreement is terminated earlier in accordance with its provisions as a result of breach, by mutual agreement, or by VGX Int'l right to terminate without cause upon prior written notice.

In January 2010, we announced that we expanded our existing license agreement with the University of Pennsylvania, adding exclusive worldwide licenses for technology and intellectual property for novel DNA vaccines against pandemic influenza, Chikungunya, and foot-and-mouth disease. The amendment also encompasses new chemokine and cytokine molecular adjuvant technologies. The technology was developed in the University of Pennsylvania laboratory of Professor David B. Weiner, a pioneer in the field of DNA vaccines and chairman of our scientific advisory board. Under the terms of the original license agreement completed in 2007, we obtained exclusive worldwide rights to develop multiple DNA plasmids and constructs with the potential to treat and/or prevent HIV, HCV, HPV and influenza and included molecular adjuvants. These prior and most recent agreements and amendments provide for royalty payments, based on future sales, to the University of Pennsylvania.

In March 2009, we announced an agreement with the PATH Malaria Vaccine Initiative (MVI) to evaluate in a preclinical feasibility study our SynCon ™ DNA vaccine development platform. More specifically, this collaboration was to design and test DNA vaccine candidates using target antigens from *Plasmodium* species and deliver them intradermally using the CELLECTRA ® electroporation device. The collaboration brings together vaccine development and malaria experts from the University of Pennsylvania School of Medicine and Inovio. The first program completed in February 2010. In September 2010, MVI agreed to provide follow-on funding to continue evaluation and development of our malaria DNA vaccine candidate in non-human primates.

In the prior MVI-funded feasibility study, our malaria vaccine candidate induced broad-based immunity to four pre-erythrocytic malaria antigens. In the current non-human primate study, our SynCon ™ DNA vaccine platform, which targets sporozoites and the liver stage of the parasite, is delivered using our proprietary electroporation delivery technology. Humoral (antibody) and cellular (T-cell) responses will be assessed in this follow-on program, conducted by the same collaboration of vaccine experts from the University of Pennsylvania School of Medicine and us.

Malaria continues to present a major healthcare challenge in the developing world and has been the focus of much attention by global public health agencies. Development of an effective vaccine against *Plasmodium falciparum* has been a challenge. The parasite undergoes several stages of development during its life cycle and presents different potential target antigens at each stage as it passes through its human and mosquito hosts. Our vaccine candidate targets the pre-erythrocytic stage of the parasite and focuses on induction of both humoral and cellular responses against multiple target antigens. This approach is intended to help prevent infection of liver cells and to further clear those cells that, despite the antibody response, become infected. By targeting the parasite during the first days after infection, this type of vaccine may prevent the onset of malaria symptoms and further inhibit spread of the disease.

The program funding is over a year and may have further follow-on funding.

In May 2004, we announced a licensing arrangement with Merck for the development of Merck's DNA cancer and infectious disease vaccines. The terms of the agreement include milestone and royalty payments for successful completion of the clinical development of the vaccines by Merck. Under the terms of the agreement, Merck reimbursed us for the co-development of a proprietary electroporation system for the delivery of Merck's DNA vaccines. This development and commercialization agreement was an extension of an initial evaluation agreement established in 2003. Merck received the right to use our proprietary technology for two specific antigens with an option to extend the agreement to include a limited number of additional target antigens. In addition, Merck obtained a non-exclusive license to the intellectual property related to the initial two specific antigens. Merck is responsible for all development costs and clinical programs.

In May 2005, we announced that Merck exercised an option for a non-exclusive license for an additional antigen to be used with our MedPulser ® DNA Delivery System. This option exercise was provided for under the 2004 license and research collaboration agreement, and brought the total number of antigens licensed by Merck to three. We received an option fee for the additional target antigen. Under the terms of our license agreement with Merck, we are eligible for milestone and royalty payments if certain development goals and commercialization of the device are achieved by Merck.

Market

We anticipate that over the next several years a number of key demographic and technological factors should accelerate growth in the market for vaccines and medical therapies to prevent and treat infectious diseases and cancer, particularly in our product categories. These factors include the following:

- *Rise in emerging infectious diseases and the threat of pandemics.* The attention received by the pandemic potential of avian influenza has mobilized cross-border agencies including governments, world health organizations and private and public corporations to develop effective vaccination and therapeutics strategies. Our candidate vaccines for avian influenza, Chikungunya and dengue are among those intended to serve these needs.
- *Increased consumer awareness.* In areas such as cervical cancer, increased consumer awareness related to HPV infection, the primary cause of cervical cancer, has led to renewed efforts for developing effective therapies. The current vaccines for cervical cancer prevention (Gardasil ® and Cervarix ®), while being effective measures for prevention in the unexposed population, are ineffective in people infected with HPV.
- *Large unmet need.* In areas such as HIV and HCV (prevention and therapy) there is a large unmet need with no vaccine options on the market. With the exit of several players in the recent years from the HIV vaccine development area, if our vaccines prove successful we believe we are positioned to obtain a significant market position.

We believe there is a significant unmet clinical need to develop more efficacious vaccines that stimulate cellular immunity (i.e., can induce T-cell responses) and can be applied to diseases such as cancer, hepatitis C or

HIV infection. For these applications, our scientists believe that DNA vaccines may offer an improvement over conventional vaccination. Our scientists believe that electroporation of DNA is critical to maximizing the efficiency of DNA vaccination and meeting unmet clinical needs for therapeutic vaccines, which some industry analysts consider to be a multi-billion dollar market opportunity.

Competition

We are aware of several development-stage and established enterprises, including major pharmaceutical and biotechnology firms, which are actively engaged in infectious disease and cancer vaccine research and development. These include Crucell N.V., Sanofi-Aventis, Novartis, Inc., GlaxoSmithKline plc, Merck, Pfizer, and MedImmune, Inc., a wholly owned subsidiary of AstraZeneca, Inc. We may also experience competition from companies that have acquired or may acquire technologies from companies, universities and other research institutions. As these companies develop their technologies, they may develop proprietary technologies which may materially and adversely affect our business.

In addition, a number of companies are developing products to address the same diseases that we are targeting. For example, Sanofi-Aventis, Novartis, Inc., MedImmune, GlaxoSmithKline, CSL (in collaboration with Merck), and others have products or development programs for influenza. Merck and GlaxoSmithKline have products on the market for cervical cancer for prophylaxis; Transgene/Roche have a therapeutic cervical cancer product in Phase II trials. Much of the development for a HIV vaccine is being done by government and non-government organizations such as the NIH and Bill & Melinda Gates Foundation.

We compete with companies that are developing DNA delivery technologies, such as viral delivery systems, lipid-based systems, or electroporation technology with an aim to carry out in vivo gene delivery for the treatment of various diseases. Currently there are five key DNA delivery technologies: viral, lipids, naked DNA, “gene gun” and electroporation. All of these technologies have shown promise, but they each also have their unique obstacles to overcome. We believe our electroporation system is strongly positioned to succeed as the dominant delivery method for DNA vaccines.

Viral DNA Delivery

This technology utilizes a virus as a carrier to deliver genetic material into target cells. The method is very efficient for delivering vaccine antigens and has the advantage of mimicking real viral infection so that the recipient will mount a broad immune response against the vaccine. The greatest limitation of the technology stems from problems with unwanted immune responses against the viral vector, limiting its use to patients who have not been previously exposed to the viral vector and making repeated administration difficult. In addition, complexity and safety concerns increase the cost of vaccines and complicate regulatory approval.

Ballistic DNA Delivery (Gene Gun)

This technology utilizes micron sized DNA-coated gold particles that are shot into the skin using compressed gas. The method has matured considerably over the last 15 years and has been shown to be an efficient method to deliver a number of vaccine antigens. Since the DNA is dry coated, excellent stability of the vaccine can be achieved. The method is limited to use in skin and only a few micrograms of genetic material can be delivered each time. This may limit the utility of the method for targets such as cancer where higher doses of vaccine antigens and stronger T-cell responses are needed.

Lipid DNA Delivery

A number of lipid formulations have been developed that increase the effect of DNA vaccines. These work by either increasing uptake of the DNA into cells or by acting as an adjuvant, alerting the immune system. While there has been progress in this field, lipid delivery tends to be less efficient than viral vectors and is hampered by concerns regarding toxicity and increased complexity.

"Naked" DNA Delivery

The simplest DNA delivery mode is the injection of "naked" plasmid DNA into target tissue, usually skeletal muscle. This method is safe and economical but inefficient in terms of cell transfection, the process of transferring DNA into a cell across the outer cell membrane. Unfortunately, it is the least effective way of delivering DNA since only an extremely small fraction (approximately one out of twenty million) of the DNA molecules are taken up by the cells. While the method may have provided some utility for the field of gene therapy, a number of clinical studies over the last decade have shown that the method is inadequate for delivering DNA vaccines into large animals and humans.

"Naked" DNA Delivery With Electroporation

When naked DNA injection is followed by electroporation of the target tissue, transfection is significantly greater with resultant gene expression generally enhanced a 1000-fold. This increase makes many DNA vaccine candidates potentially feasible without unduly compromising safety or cost.

In December 2004, the first patient was treated using our electroporation system to deliver a plasmid DNA-based immunotherapy and we have initiated, together with partners, additional Phase I and Phase II clinical trials using our electroporation technology to deliver DNA-based immunotherapies or DNA vaccines. To date our scientists have not observed any serious adverse events that can be attributed to the use of electroporation in these clinical DNA studies.

We believe that the greatest obstacle to making DNA vaccines and immunotherapies a reality has been the lack of safe, efficient and economical delivery of DNA plasmid constructs into target cells and that electroporation may become the method of choice for DNA delivery into cells in many applications.

There are other companies with electroporation intellectual property and devices. We believe we have significant competitive advantages over other companies focused on electroporation for multiple reasons:

- We have an extensive history and experience in developing the methods and devices that optimize the use of electroporation in conjunction with DNA-based agents. This experience has been validated with multiple sets of interim data from multiple clinical studies assessing DNA-based immunotherapies and vaccines against cancers and infectious disease. Together with our partners and collaborators, we have been the leader in establishing proof-of-principle of electroporation-delivered DNA vaccines and immunotherapies.
- We have a broad product line of electroporation instruments designed to enable DNA delivery in tumors, muscle, and skin.
- We have been very proactive in filing for patents, as well as acquiring and licensing additional patents, to expand our international patent estate.

If any of our competitors develop products with efficacy or safety profiles significantly better than our products, we may not be able to commercialize our products, and sales of any of our commercialized products could be harmed. Some of our competitors and potential competitors have substantially greater product development capabilities and financial, scientific, marketing and human resources than we do. Competitors may develop products earlier, obtain FDA approvals for products more rapidly, or develop products that are more effective than those under development by us. We will seek to expand our technological capabilities to remain competitive, however, research and development by others may render our technologies or products obsolete or noncompetitive, or result in treatments or cures superior to ours.

Our competitive position will be affected by the disease indications addressed by our product candidates and those of our competitors, the timing of market introduction for these products and the stage of development of other technologies to address these disease indications. For us and our competitors, proprietary technologies, the

ability to complete clinical trials on a timely basis and with the desired results, and the ability to obtain timely regulatory approvals to market these product candidates are likely to be significant competitive factors. Other important competitive factors will include the efficacy, safety, ease of use, reliability, availability and price of products and the ability to fund operations during the period between technological conception and commercial sales.

The FDA and other regulatory agencies may expand current requirements for public disclosure of DNA-based product development data, which may harm our competitive position with foreign and United States companies developing DNA-based products for similar indications.

Government Regulation

DNA Vaccine Product Regulation

Any pharmaceutical products we develop will require regulatory clearances prior to clinical trials and additional regulatory approvals prior to commercialization. New gene-based products for vaccine or therapeutic applications are subject to extensive regulation by the FDA and comparable agencies in other countries. The precise regulatory requirements with which we will have to comply are uncertain at this time due to the novelty of the gene-based products and indications, or uses, that are currently under development. Our potential products will be regulated either as biological products or as drugs. In the United States, drugs are subject to regulation under the Federal Food, Drug and Cosmetic Act, or the FDC Act. Biological products, in addition to being subject to provisions of the FDC Act, are regulated in the United States under the Public Health Service Act. Both statutes and related regulations govern, among other things, testing, manufacturing, safety, efficacy, labeling, storage, record keeping, advertising, and other promotional practices.

Obtaining FDA approval or comparable approval from similar agencies in other countries is a costly and time-consuming process. Generally, FDA approval requires that preclinical studies be conducted in the laboratory and in animal model systems to gain preliminary information on efficacy and to identify any major safety concerns. In the United States, the results of these studies are submitted as a part of an IND application which the FDA must review and allow before human clinical trials can start. The IND application includes a detailed description of the proposed clinical investigations.

A company must submit an IND application or equivalent application in other countries for each proposed product and must conduct clinical studies to demonstrate the safety and efficacy of the product necessary to obtain FDA approval or comparable approval from similar agencies in other countries. For example, in the United States, the FDA receives reports on the progress of each phase of clinical testing and may require the modification, suspension, or termination of clinical trials if an unwarranted risk is presented to patients.

To obtain FDA approval prior to marketing a pharmaceutical product in the United States typically requires several phases of clinical trials to demonstrate the safety and efficacy of the product candidate. Clinical trials are the means by which experimental treatments are tested in humans, and are conducted following preclinical testing. Clinical trials may be conducted within the United States or in foreign countries. If clinical trials are conducted in foreign countries, the products under development as well as the trials are subject to regulations of the FDA and/or its counterparts in the other countries. Upon successful completion of clinical trials, approval to market the treatment for a particular patient population may be requested from the FDA in the United States and/or its counterparts in other countries.

Clinical trials for therapeutic products are normally done in three phases. Phase I clinical trials are typically conducted with a small number of patients or healthy subjects to evaluate safety, determine a safe dosage range, identify side effects, and, if possible, gain early evidence of effectiveness. Phase II clinical trials are conducted with a larger group of patients to evaluate effectiveness of an investigational product for a defined patient population, and to determine common short-term side effects and risks associated with the drug. Phase III clinical

trials involve large scale, multi-center, comparative trials that are conducted to evaluate the overall benefit-risk relationship of the investigational product and to provide an adequate basis for product labeling. In some special cases where the efficacy testing of a product may present a special challenge to testing in humans, such as in the case of a vaccine to protect healthy humans from a life-threatening disease that is not a naturally occurring threat, effectiveness testing may be required in animals.

After completion of clinical trials of a new product, FDA marketing approval must be obtained or equivalent approval in comparable agencies in other countries. For the FDA, if the product is regulated as a biologic, a Biologics License Application, or BLA, is required and if the product is classified as a new drug, a New Drug Application, or NDA, is required. The NDA or BLA must include results of product development activities, preclinical studies, and clinical trials in addition to detailed chemistry, manufacturing and control information.

Applications submitted to the FDA are subject to an unpredictable and potentially prolonged approval process. Despite good-faith communication and collaboration between the applicant and the FDA during the development process, the FDA may ultimately decide, upon final review of the data, that the application does not satisfy its criteria for approval or requires additional product development or further preclinical or clinical studies. Even if FDA regulatory clearances are obtained, a marketed product is subject to continual review, and later discovery of previously unknown problems or failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions.

Before marketing clearance for a product can be secured, the facility in which the product is manufactured must be inspected by the FDA and must comply with cGMP regulations. In addition, after marketing clearance is secured, the manufacturing facility must be inspected periodically for cGMP compliance by FDA inspectors.

In addition to the FDA requirements, the NIH has established guidelines for research involving human genetic materials, including recombinant DNA molecules. The FDA cooperates in the enforcement of these guidelines, which apply to all recombinant DNA research that is conducted at facilities supported by the NIH, including proposals to conduct clinical research involving gene therapies. The NIH review of clinical trial proposals and safety information is a public process and often involves review and approval by the Recombinant DNA Advisory Committee, of the NIH.

Sponsors of clinical trials are required to register and report results for all controlled clinical investigations, other than Phase I investigations, of a product subject to FDA regulation. Trial registration may require public disclosure of confidential commercial development data resulting in the loss of competitive secrets, which could be commercially detrimental.

Medical Device Manufacturing Regulation

In addition, we are subject to regulation as a medical device manufacturer. We must comply with a variety of manufacturing, product development and quality regulations in order to be able to distribute our electroporation devices commercially around the world. In Europe, we must comply with the Medical Device Directives. We have a Quality System certified by its international Notified Body to be in compliance with the international Quality System Standard, ISO13485, and meeting the Annex II Quality System requirements of the MDD. We completed Annex II Conformity Assessment procedures to allow for the CE Mark of our electroporation devices.

In the United States, we are required to maintain facilities, equipment, processes and procedures that are in compliance with quality systems regulations. Our systems have been constructed to be in compliance with these regulations and our ongoing operations are conducted within these systems. Commercially distributed devices within the United States must be developed under formal design controls and be submitted to the FDA for clearance or approval. All development activity is performed according to formal procedures to ensure compliance with all design control regulations.

We employ modern manufacturing methods and controls to optimize performance and control costs. Internal capabilities and core competencies are strategically determined to optimize our manufacturing efficiency. We utilize contract manufacturers for key operations, such as clean room assembly and sterilization, which are not economically conducted in-house. We outsource significant sub-assemblies, such as populated printed circuit boards, for which capital requirements or manufacturing volumes do not justify vertical integration.

Other Regulations

We also are subject to various federal, state and local laws, regulations, and recommendations relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals, and the use and disposal of hazardous or potentially hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our research. The extent of government regulation that might result from any future legislation or administrative action cannot be accurately predicted.

Commercialization and Manufacturing

Because of the broad potential applications of our technologies, we intend to develop and commercialize products both on our own and through our collaborators and licensees. We intend to develop and commercialize products in well-defined specialty markets, such as infectious diseases and cancer. Where appropriate, we intend to rely on strategic marketing and distribution alliances.

We believe our plasmids can be produced in commercial quantities through uniform methods of fermentation and processing that are applicable to all plasmids. We believe we will be able to obtain sufficient supplies of plasmids for all foreseeable clinical investigations.

Relationship with VGX Int'l

We acquired an equity interest in VGX Int'l in 2005. As of December 31, 2010 we owned 19.65% of the outstanding capital stock of VGX Int'l and VGX Int'l owned 294,360 shares of our common stock. None of our current officers, directors, or key employees beneficially owns, directly or indirectly, any securities of VGX Int'l. Bryan Kim, our vice president of Asian operations, currently constitutes one of the six members of VGX Int'l's board of directors and receives customary compensation from VGX Int'l for his service in such capacity. Bryan Kim currently serves as the president and chief executive officer of VGX Int'l.

In 2008 we sold our manufacturing operations (including patent rights to certain manufacturing technology) to VGXI, Inc, a wholly-owned United States subsidiary of VGX Int'l. In connection with this transfer we entered into a Supply Agreement pursuant to which VGXI, Inc., a cGMP contract manufacturer, produces and supplies the DNA plasmids for all of our research and clinical trials. The price of the plasmids we purchase from VGXI, Inc. is determined by us and VGX Int'l at the time of order placement or, with respect to product supplied in connection with a grant contract, based on the contracted bid provided by the applicable agency. We agreed to treat VGX Int'l and its subsidiary as our most favored supplier for DNA plasmids and VGX Int'l and its subsidiary agreed to treat us as their most favored customer. Before we can manufacture DNA plasmids on our own behalf or engage a third party other than VGX Int'l or its subsidiary to manufacture DNA plasmids for us, we must first offer such manufacturing work to VGX Int'l or its subsidiary.

We have also entered into a license and collaboration agreements pursuant to which we have granted VGX Int'l exclusive rights to certain of our product candidates in certain jurisdictions. For example, VGX Int'l has exclusive rights in countries including Korea to our VGX-3400 for treatment of the avian flu. In exchange for these rights VGX Int'l shares the development costs for some of our product candidates.

For the year ended December 31, 2010, we recognized revenue from VGX Int'l of $381,000, which consisted of licensing fees, device lease and other fees. Operating expenses related to VGXI, Inc. for the year ended December 31, 2010 were $3.4 million relating to manufacturing and engineering services. At December 31, 2010 we had an accounts receivable balance of $72,000 from VGX Int'l and its subsidiaries.

Intellectual Property

Patents and other proprietary rights are essential to our business. We file patent applications to protect our technologies, inventions and improvements to our inventions that we consider important to the development of our business. We file for patent registration extensively in the United States and in key foreign markets. Although our patent filings include claims covering various features of our products and product candidates, including composition, methods of manufacture and use, our patents do not provide us with complete protection, or guarantee, against the development of competing products. In addition, some of our know-how and technology are not patentable. We thus also rely upon trade secrets, know-how, continuing technological innovations and licensing opportunities to develop and maintain our competitive position. We also require employees, consultants, advisors and collaborators to enter into confidentiality agreements, but such agreements may provide limited protection for our trade secrets, know-how or other proprietary information.

Our intellectual property portfolio covers our proprietary technologies, including electroporation delivery and vaccine related technologies. As of February 23, 2011, our patent portfolio included over 85 issued United States patents and 201 issued foreign counterpart patents.

Key vaccine related technology patents and published patent applications include the following:

- European patent no. 1809336B1, entitled, “Growth Hormone Releasing Hormone (GHRH) Enhances Vaccination Response”
- US Pat No. 7,846,720, entitled, “Optimized High Yield Synthetic Plasmids”
- International publication WO 08/014521, entitled, “Improved Vaccines and Methods for Using the Same,” which includes HCV, HPV, influenza, HIV, and cancer (hTERT) SynCon ™ DNA.
- International publication WO2009/099716, entitled, “Novel Vaccines Against Multiple Subtypes Of Dengue Virus.”
- International publication WO2009/073330, entitled, “Novel Vaccines Against Multiple Subtypes Of Influenza Virus.”
- US Pat No. 7,245,963, entitled, “Constant Current Electrode Assembly for Electroporation,” which covers the CELLECTRA ® electroporation device.

Key electroporation related patents covering range of field strengths include the following:

- US Pat No. 5,273,525 issued December 28, 1993 (expires 2013)
- US Pat No. 6,110,161 issued August 29, 2000
- US Pat No. 6,261,281 issued July 17, 2001
- US Pat No. 6,958,060 issued October 25, 2005
- US Pat No. 6,939,862 issued September 6, 2005
- European patent No. 999867 issued September 8, 2010

If we fail to protect our intellectual property rights adequately our competitors might gain access to our technology and our business would thus be harmed. In addition, defending our intellectual property rights might entail significant expense. Any of our intellectual property rights may be challenged by others or invalidated through administrative processes or litigation through the courts. In addition, our patents, or any other patents that may be issued to us in the future, may not provide us with any competitive advantages, or may be challenged by third parties. Furthermore, legal standards relating to the validity, enforceability and scope of protection of intellectual property rights are uncertain. Effective patent, trademark, copyright and trade secret protection may not be available to us in each country where we operate. The laws of some foreign countries may not be as protective of intellectual property rights as those in the United States, and domestic and international mechanisms

for enforcement of intellectual property rights in those countries may be inadequate. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our intellectual property or otherwise gaining access to our technology. We may be required to expend significant resources to monitor and protect our intellectual property rights. We may initiate claims or litigation against third parties for infringement of our proprietary rights or to establish the validity of our proprietary rights. Any such litigation, whether or not it is ultimately resolved in our favor, would result in significant expense to us and divert the efforts of our technical and management personnel.

There may be rights we are not aware of, including applications that have been filed but not published that, when issued, could be asserted against us. These third-parties could bring claims against us, and that would cause us to incur substantial expenses and, if successful against us, could cause us to pay substantial damages. Further, if a patent infringement suit were brought against us, we could be forced to stop or delay research, development, manufacturing or sales of the product or biologic drug candidate that is the subject of the suit. As a result of patent infringement claims, or in order to avoid potential claims, we may choose or be required to seek a license from the third-party. These licenses may not be available on acceptable terms, or at all. Even if we are able to obtain a license, the license would likely obligate us to pay license fees or royalties or both, and the rights granted to us might be non-exclusive, which could result in our competitors gaining access to the same intellectual property. Ultimately, we could be prevented from commercializing a product, or be forced to cease some aspect of our business operations, if, as a result of actual or threatened patent infringement claims, we are unable to enter into licenses on acceptable terms. All of the issues described above could also impact our collaborators, which would also impact the success of the collaboration and therefore us.

Important legal issues remain to be resolved as to the extent and scope of available patent protection for biologic products, including vaccines, and processes in the United States and other important markets outside the United States, such as Europe and Japan. Foreign markets may not provide the same level of patent protection as provided under the United States patent system. We recognize that litigation or administrative proceedings may be necessary to determine the validity and scope of certain of our and others' proprietary rights. Any such litigation or proceeding may result in a significant commitment of resources in the future and could force us to interrupt our operations, redesign our products or processes, or negotiate a license agreement, all of which would adversely affect our revenue. Furthermore, changes in, or different interpretations of, patent laws in the United States and other countries may result in patent laws that allow others to use our discoveries or develop and commercialize our products.

We cannot guarantee that the patents we obtain or the unpatented technology we hold will afford us significant commercial protection.

Significant Customers and Research and Development

During the year ended December 31, 2010 we derived 66% of our revenue from the NIAID; during the year ended December 31, 2009 we derived 49% of our revenue from Wyeth and 33% of our revenue from the NIAID. Revenues from Wyeth were generated under a collaboration and licensing agreement, which Wyeth terminated in July 2009.

Since our inception, virtually all of our activities have consisted of research and development efforts related to developing our electroporation technologies and DNA vaccines. Research and development expense consists of expenses incurred in performing research and development activities including salaries and benefits, facilities and other overhead expenses, clinical trials, contract services and other outside expenses. Our research and development expense was $13.3 million in 2010 and $9.4 million in 2009.

Corporate History and Headquarters

We were originally incorporated on June 29, 1983, under the laws of California as Biotechnologies & Experimental Research, Inc. The entity changed its corporate name to BTX, Inc. on December 10, 1991, and

Genetronics, Inc. on February 8, 1994. On April 14, 1994, the board of directors approved a share exchange agreement with Consolidated United Safety Technologies Inc. On September 2, 1997, we listed on the Toronto Stock Exchange as Genetronics Biomedical Ltd, under the laws of British Columbia, Canada, which wholly owned Genetronics, Inc. On June 15, 2001, we completed a change in jurisdiction of incorporation from British Columbia, Canada, to the state of Delaware and became Genetronics Biomedical Corporation, a Delaware corporation. On January 17, 2003, Genetronics voluntarily de-listed from the Toronto Stock Exchange. On March 31, 2005, our corporate name changed from Genetronics Biomedical Corporation to Inovio Biomedical Corporation. On June 1, 2009, we completed the acquisition of VGX Pharmaceuticals, Inc. ("VGX"), a privately-held company, pursuant to the terms of an Amended and Restated Agreement and Plan of Merger dated December 5, 2008, as further amended on March 31, 2009 by and among Inovio, Inovio's wholly-owned subsidiary Inovio Acquisition, LLC and VGX (the "Merger"). Upon the closing of the Merger, Inovio Acquisition, LLC assumed all of VGX's business, properties and assets and assumed its obligations, changed its name to VGX Pharmaceuticals, LLC, and remains a wholly-owned subsidiary of the Company, utilizing a single, integrated management team with Inovio. On May 14, 2010, the entity changed its corporate name to Inovio Pharmaceuticals, Inc. We conduct our business through our United States wholly-owned subsidiaries, Genetronics, Inc. and VGX Pharmaceuticals, LLC.

Our principal executive offices are located at 1787 Sentry Parkway West, Blue Bell, Pennsylvania 19422, and the telephone number is (267) 440-4200.

Available Information

Our Internet website address is *www.inovio.com* . We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, Forms 3, 4, and 5 filed on behalf of directors and executive officers, and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, or the Exchange Act, available free of charge on our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or the SEC. You can also read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. You can obtain additional information about the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet site (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us.

Information regarding our corporate governance, including the charters of our audit committee, our nomination and corporate governance committee and our compensation committee, our Code of Business Conduct and Ethics, our Corporate Governance Policy and information for contacting our board of directors is available on our Internet site (www.inovio.com). We will provide any of the foregoing information without charge upon request to Peter Kies, 11494 Sorrento Valley Road Suite A, San Diego, CA, 92121.

Our Code of Business Conduct and Ethics includes our Code of Ethics applicable to our Chief Executive Officer and Chief Financial Officer, who also serves as our principal accounting officer. Any amendments to or waivers of the Code of Ethics will be promptly posted on our Internet site (www.inovio.com) or in a report on Form 8-K, as required by applicable law.

Employees

As of March 4, 2011, we employed 41 people on a full-time basis and 3 people under consulting and project employment agreements. Of the combined total, 24 were in product research, which includes research and development, quality assurance, clinical, engineering, and manufacturing, and 20 were in general and administrative, which includes corporate development, information technology, legal, investor relations, finance, and corporate administration. None of our employees are subject to collective bargaining agreements.

ITEM 1A. RISK FACTORS

You should carefully consider the following factors regarding information included in this Annual Report. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations. If any of the following risks actually occur, our business, financial condition and operating results could be materially adversely affected.

Risks Related to Our Business and Industry

We have incurred losses since inception, expect to incur significant net losses in the foreseeable future and may never become profitable.

We have experienced significant operating losses to date; as of December 31, 2010 our accumulated deficit was approximately $194.8 million. We have generated limited revenues, primarily consisting of license and grant revenue, and interest income. We expect to continue to incur substantial additional operating losses for at least the next several years as we advance our clinical trials and research and development activities. We may never successfully commercialize our vaccine product candidates or electroporation-based DNA vaccine delivery technology and thus may never have any significant future revenues or achieve and sustain profitability.

We have limited sources of revenue and our success is dependent on our ability to develop our vaccine and other product candidates and electroporation equipment.

We do not sell any products and may not have any other products commercially available for several years, if at all. Our ability to generate future revenues depends heavily on our success in:

- developing and securing United States and/or foreign regulatory approvals for our product candidates, including securing regulatory approval for conducting clinical trials with product candidates;
- developing our electroporation-based DNA delivery technology; and
- commercializing any products for which we receive approval from the FDA and foreign regulatory authorities.

Our electroporation equipment and product candidates will require extensive additional clinical study and evaluation, regulatory approval in multiple jurisdictions, substantial investment and significant marketing efforts before we generate any revenues from product sales. We are not permitted to market or promote our electroporation equipment and product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities. If we do not receive regulatory approval for and successfully commercialize any products, we will not generate any revenues from sales of electroporation equipment and products, and we may not be able to continue our operations.

None of our human vaccine product candidates has been approved for sale, and we may not develop commercially successful vaccine products.

Our human vaccine programs are in the early stages of research and development, and currently include vaccine product candidates in discovery, pre-clinical studies and Phase I and II clinical studies. There are limited data regarding the efficiency of DNA vaccines compared with conventional vaccines, and we must conduct a substantial amount of additional research and development before any regulatory authority will approve any of our vaccine product candidates. The success of our efforts to develop and commercialize our vaccine product candidates could fail for a number of reasons. For example, we could experience delays in product development and clinical trials. Our vaccine product candidates could be found to be ineffective or unsafe, or otherwise fail to receive necessary regulatory clearances. The products, if safe and effective, could be difficult to manufacture on a large scale or uneconomical to market, or our competitors could develop superior vaccine products more quickly and efficiently or more effectively market their competing products.

In addition, adverse events, or the perception of adverse events, relating to vaccines and vaccine delivery technologies may negatively impact our ability to develop commercially successful vaccine products. For example, pharmaceutical companies have been subject to claims that the use of some pediatric vaccines has caused personal injuries, including brain damage, central nervous system damage and autism. These and other claims may influence public perception of the use of vaccine products and could result in greater governmental regulation, stricter labeling requirements and potential regulatory delays in the testing or approval of our potential products.

We will need substantial additional capital to develop our electroporation-based DNA vaccine delivery technology and vaccine and other product candidates and for our future operations.

Conducting the costly and time consuming research, pre-clinical and clinical testing necessary to obtain regulatory approvals and bring our vaccine delivery technology and product candidates to market will require a commitment of substantial funds in excess of our current capital. Our future capital requirements will depend on many factors, including, among others:

- the progress of our current and new product development programs;
- the progress, scope and results of our pre-clinical and clinical testing;
- the time and cost involved in obtaining regulatory approvals;
- the cost of manufacturing our products and product candidates;
- the cost of prosecuting, enforcing and defending against patent infringement claims and other intellectual property rights;
- competing technological and market developments; and
- our ability and costs to establish and maintain collaborative and other arrangements with third parties to assist in potentially bringing our products to market.

Additional financing may not be available on acceptable terms, or at all. Domestic and international capital markets have been experiencing heightened volatility and turmoil, making it more difficult to raise capital through the issuance of equity securities. Furthermore, as a result of the recent volatility in the capital markets, the cost and availability of credit has been and may continue to be adversely affected by illiquid credit markets and wider credit spreads. Concern about the stability of the markets generally and the strength of counterparties specifically has led many lenders and institutional investors to reduce, and in some cases cease to provide, funding to borrowers. To the extent we are able to raise additional capital through the sale of equity securities or we issue securities in connection with another transaction, the ownership position of existing stockholders could be substantially diluted. If additional funds are raised through the issuance of preferred stock or debt securities, these securities are likely to have rights, preferences and privileges senior to our common stock and may involve significant fees, interest expense, restrictive covenants and the granting of security interests in our assets. Fluctuating interest rates could also increase the costs of any debt financing we may obtain. Raising capital through a licensing or other transaction involving our intellectual property could require us to relinquish valuable intellectual property rights and thereby sacrifice long-term value for short-term liquidity.

Our failure to successfully address ongoing liquidity requirements would have a substantially negative impact on our business. If we are unable to obtain additional capital on acceptable terms when needed, we may need to take actions that adversely affect our business, our stock price and our ability to achieve cash flow in the future, including possibly surrendering our rights to some technologies or product opportunities, delaying our clinical trials or curtailing or ceasing operations.

We depend upon key personnel who may terminate their employment with us at any time and we may need to hire additional qualified personnel in order to obtain financing, pursue collaborations or develop or market our product candidates.

The success of our business strategy will depend to a significant degree upon the continued services of key management, technical and scientific personnel and our ability to attract and retain additional qualified personnel and managers, including personnel with expertise in clinical trials, government regulation, manufacturing, marketing and other areas. Competition for qualified personnel is intense among companies, academic institutions and other organizations. If we are unable to attract and retain key personnel and advisors, it may negatively affect our ability to successfully develop, test, commercialize and market our products and product candidates.

We face intense and increasing competition and many of our competitors have significantly greater resources and experience.

Many other companies are pursuing other forms of treatment or prevention for diseases that we target. For example, many of our competitors are working on developing and testing H5N1, H1N1 and universal influenza vaccines, and several H1N1 vaccines developed by our competitors have been approved for human use. Our competitors and potential competitors include large pharmaceutical and medical device companies and more established biotechnology companies. These companies have significantly greater financial and other resources and greater expertise than us in research and development, securing government contracts and grants to support research and development efforts, manufacturing, pre-clinical and clinical testing, obtaining regulatory approvals and marketing. This may make it easier for them to respond more quickly than us to new or changing opportunities, technologies or market needs. Many of these competitors operate large, well-funded research and development programs and have significant products approved or in development. Small companies may also prove to be significant competitors, particularly through collaborative arrangements with large pharmaceutical companies or through acquisition or development of intellectual property rights. Our potential competitors also include academic institutions, governmental agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for product and clinical development and marketing. Research and development by others may seek to render our technologies or products obsolete or noncompetitive.

If we lose or are unable to secure collaborators or partners, or if our collaborators or partners do not apply adequate resources to their relationships with us, our product development and potential for profitability will suffer.

We have entered into, or may enter into, distribution, co-promotion, partnership, sponsored research and other arrangements for development, manufacturing, sales, marketing and other commercialization activities relating to our products. For example, in the past we have entered into a license and collaboration agreement with Merck. The amount and timing of resources applied by our collaborators are largely outside of our control.

Wyeth terminated one of our existing collaboration agreements. If any of our other current or future collaborators breaches or terminates our agreements, or fails to conduct our collaborative activities in a timely manner, our commercialization of products could be diminished or blocked completely. It is possible that collaborators will change their strategic focus, pursue alternative technologies or develop alternative products, either on their own or in collaboration with others. Further, we may be forced to fund programs that were previously funded by our collaborators, and we may not have, or be able to access, the necessary funding. The effectiveness of our partners, if any, in marketing our products will also affect our revenues and earnings.

We desire to enter into new collaborative agreements. However, we may not be able to successfully negotiate any additional collaborative arrangements and, if established, these relationships may not be scientifically or commercially successful. Our success in the future depends in part on our ability to enter into

agreements with other highly-regarded organizations. This can be difficult due to internal and external constraints placed on these organizations. Some organizations may have insufficient administrative and related infrastructure to enable collaborations with many companies at once, which can extend the time it takes to develop, negotiate and implement a collaboration. Once news of discussions regarding possible collaborations are known in the medical community, regardless of whether the news is accurate, failure to announce a collaborative agreement or the entity's announcement of a collaboration with another entity may result in adverse speculation about us, resulting in harm to our reputation and our business.

Disputes could also arise between us and our existing or future collaborators, as to a variety of matters, including financial and intellectual property matters or other obligations under our agreements. These disputes could be both expensive and time-consuming and may result in delays in the development and commercialization of our products or could damage our relationship with a collaborator.

A small number of licensing partners and government contracts account for a substantial portion of our revenue.

We currently derive, and in the past we have derived, a significant portion of our revenue from a limited number of licensing partners and government grants and contracts. For example, during the year ended December 31, 2010, the NIAID, the PATH Malaria Vaccine Initiative (MVI) and the Department of Defense (U.S. Army grant) accounted for approximately 66%, 5%, and 6% of our consolidated revenue, respectively. If we fail to sign additional future contracts with major licensing partners and the government, if a contract is delayed or deferred, or if an existing contract expires or is cancelled and we fail to replace the contract with new business, our revenue would be adversely affected.

We have agreements with government agencies, which are subject to termination and uncertain future funding.

We have entered into agreements with government agencies, such as the NIAID and the US Army, and we intend to continue entering into these agreements in the future. Our business is partially dependent on the continued performance by these government agencies of their responsibilities under these agreements, including adequate continued funding of the agencies and their programs. We have no control over the resources and funding that government agencies may devote to these agreements, which may be subject to annual renewal and which generally may be terminated by the government agencies at any time.

Government agencies may fail to perform their responsibilities under these agreements, which may cause them to be terminated by the government agencies. In addition, we may fail to perform our responsibilities under these agreements. Many of our government agreements are subject to audits, which may occur several years after the period to which the audit relates. If an audit identifies significant unallowable costs, we could incur a material charge to our earnings or reduction in our cash position. As a result, we may be unsuccessful entering, or ineligible to enter, into future government agreements.

Our quarterly operating results may fluctuate significantly.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of expenses related to our electroporation equipment, product candidates or future development programs;
- merger integration expenses;
- addition or termination of clinical trials or funding support;
- any intellectual property infringement lawsuit in which we may become involved;

- any legal claims that may be asserted against us or any of our officers;
- regulatory developments affecting our electroporation equipment and product candidates or those of our competitors;
- our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements; and
- if any of our products receives regulatory approval, the levels of underlying demand for our products.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

If we are unable to obtain FDA approval of our products, we will not be able to commercialize them in the United States.

We need FDA approval prior to marketing our electroporation equipment and products in the United States. If we fail to obtain FDA approval to market our electroporation equipment and product candidates, we will be unable to sell our products in the United States, which will significantly impair our ability to generate any revenues.

This regulatory review and approval process, which includes evaluation of pre-clinical studies and clinical trials of our products as well as the evaluation of our manufacturing processes and our third-party contract manufacturers' facilities, is lengthy, expensive and uncertain. To receive approval, we must, among other things, demonstrate with substantial evidence from well-controlled clinical trials that our electroporation equipment and product candidates are both safe and effective for each indication for which approval is sought. Satisfaction of the approval requirements typically takes several years and the time needed to satisfy them may vary substantially, based on the type, complexity and novelty of the product. We do not know if or when we might receive regulatory approvals for our electroporation equipment and any of our product candidates currently under development. Moreover, any approvals that we obtain may not cover all of the clinical indications for which we are seeking approval, or could contain significant limitations in the form of narrow indications, warnings, precautions or contra-indications with respect to conditions of use. In such event, our ability to generate revenues from such products would be greatly reduced and our business would be harmed.

The FDA has substantial discretion in the approval process and may either refuse to consider our application for substantive review or may form the opinion after review of our data that our application is insufficient to allow approval of our electroporation equipment and product candidates. If the FDA does not consider or approve our application, it may require that we conduct additional clinical, pre-clinical or manufacturing validation studies and submit that data before it will reconsider our application. Depending on the extent of these or any other studies, approval of any applications that we submit may be delayed by several years, or may require us to expend more resources than we have available. It is also possible that additional studies, if performed and completed, may not be successful or considered sufficient by the FDA for approval or even to make our applications approvable. If any of these outcomes occur, we may be forced to abandon one or more of our applications for approval, which might significantly harm our business and prospects.

It is possible that none of our products or any product we may seek to develop in the future will ever obtain the appropriate regulatory approvals necessary for us or our collaborators to commence product sales. Any delay in obtaining, or an inability to obtain, applicable regulatory approvals would prevent us from commercializing our products, generating revenues and achieving and sustaining profitability.

Clinical trials involve a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Clinical testing is expensive and can take many years to complete, and its outcome is uncertain. Failure can occur at any time during the clinical trial process. The results of pre-clinical studies and early clinical trials of our products may not be predictive of the results of later-stage clinical trials. Results from one study may not be reflected or supported by the results of similar studies. Results of an animal study may not be indicative of results achievable in human studies. Human-use equipment and product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through pre-clinical studies and initial clinical testing. The time required to obtain approval by the FDA and similar foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials, depending upon numerous factors. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change. We have not obtained regulatory approval for any human-use products.

Our products could fail to complete the clinical trial process for many reasons, including the following:

- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our electroporation equipment and a product candidate are safe and effective for any indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate that our electroporation equipment and a product candidate's clinical and other benefits outweigh its safety risks;
- we may be unable to demonstrate that our electroporation equipment and a product candidate presents an advantage over existing therapies, or over placebo in any indications for which the FDA requires a placebo-controlled trial;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from pre-clinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a new drug application or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of us or third-party manufacturers with which we or our collaborators contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Delays in the commencement or completion of clinical testing could result in increased costs to us and delay or limit our ability to generate revenues.

Delays in the commencement or completion of clinical testing could significantly affect our product development costs. We do not know whether planned clinical trials will begin on time or be completed on schedule, if at all. In addition, ongoing clinical trials may not be completed on schedule, or at all. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- obtaining regulatory approval to commence a clinical trial;
- adverse results from third party clinical trials involving gene based therapies and the regulatory response thereto;

- reaching agreement on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- future bans or stricter standards imposed on gene based therapy clinical trials;
- manufacturing sufficient quantities of our electroporation equipment and product candidates for use in clinical trials;
- obtaining institutional review board, or IRB, approval to conduct a clinical trial at a prospective site;
- slower than expected recruitment and enrollment of patients to participate in clinical trials for a variety of reasons, including competition from other clinical trial programs for similar indications;
- conducting clinical trials with sites internationally due to regulatory approvals and meeting international standards;
- retaining patients who have initiated a clinical trial but may be prone to withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are lost to further follow-up; and
- collecting, reviewing and analyzing our clinical trial data.

Clinical trials may also be delayed as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRB overseeing the clinical trial at issue, any of our clinical trial sites with respect to that site, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;
- unforeseen safety issues; and
- lack of adequate funding to continue the clinical trial.

If we experience delays in completion of, or if we terminate, any of our clinical trials, the commercial prospects for our electroporation equipment and our product candidates may be harmed and our ability to generate product revenues will be delayed. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of a product candidate. Further, delays in the commencement or completion of clinical trials may adversely affect the trading price of our common stock.

We and our collaborators rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we and our collaborators may not be able to obtain regulatory approval for or commercialize our product candidates.

We and our collaborators have entered into agreements with CROs to provide monitors for and to manage data for our on-going clinical programs. We and the CROs conducting clinical trials for our electroporation equipment and product candidates are required to comply with current good clinical practices, or GCPs, regulations and guidelines enforced by the FDA for all of our products in clinical development. The FDA enforces GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or the CROs conducting clinical trials of our product candidates fail to comply with applicable GCPs, the clinical data generated in the clinical trials may be deemed unreliable and the FDA may require additional clinical trials before approving any marketing applications.

If any relationships with CROs terminate, we or our collaborators may not be able to enter into arrangements with alternative CROs. In addition, these third-party CROs are not our employees, and we cannot control whether or not they devote sufficient time and resources to our on-going clinical programs or perform trials efficiently. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may

also be conducting clinical studies or other drug development activities, which could harm our competitive position. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements, or for other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed. Cost overruns by or disputes with our CROs may significantly increase our expenses.

Even if our products receive regulatory approval, they may still face future development and regulatory difficulties.

Even if United States regulatory approval is obtained, the FDA may still impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. This governmental oversight may be particularly strict with respect to gene based therapies. Our products will also be subject to ongoing FDA requirements governing the labeling, packaging, storage, advertising, promotion, recordkeeping and submission of safety and other post-market information. In addition, manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current good manufacturing practices, or cGMP, regulations. If we or a regulatory agency discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue Warning Letters or untitled letters;
- impose civil or criminal penalties;
- suspend regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications filed by us;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or require us to initiate a product recall.

Even if our products receive regulatory approval in the United States, we may never receive approval or commercialize our products outside of the United States.

In order to market any electroporation equipment and product candidates outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Approval procedures vary among countries and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from that required to obtain FDA approval. The regulatory approval process in other countries may include all of the risks detailed above regarding FDA approval in the United States as well as other risks. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. Failure to obtain regulatory approval in other countries or any delay or setback in obtaining such approval could have the same adverse effects detailed above regarding FDA approval in the United States. Such effects include the risks that our product candidates may not be approved for all indications requested, which could limit the uses of our product candidates and have an adverse effect on their commercial potential or require costly, post-marketing follow-up studies.

We face potential product liability exposure and, if successful claims are brought against us, we may incur substantial liability.

The use of our electroporation equipment and DNA vaccine candidates in clinical trials and the sale of any products for which we obtain marketing approval expose us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. For example, pharmaceutical companies have been subject to claims that the use of some pediatric vaccines has caused personal injuries, including brain damage, central nervous system damage and autism, and these companies have incurred material costs to defend these claims. If we cannot successfully defend ourselves against product liability claims, we could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in:

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

We have obtained product liability insurance coverage for our clinical trials, but our insurance coverage may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. On occasion, large judgments have been awarded in class action lawsuits based on products that had unanticipated side effects. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our business.

We currently have no marketing and sales organization and have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenues.

We currently do not have a sales organization for the marketing, sales and distribution of our electroporation equipment and product candidates. In order to commercialize any products, we must build our marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. We contemplate establishing our own sales force or seeking third-party partners to sell our products. The establishment and development of our own sales force to market any products we may develop will be expensive and time consuming and could delay any product launch, and we may not be able to successfully develop this capability. We will also have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel. To the extent we rely on third parties to commercialize our approved products, if any, we will receive lower revenues than if we commercialized these products ourselves. In addition, we may have little or no control over the sales efforts of third parties involved in our commercialization efforts. In the event we are unable to develop our own marketing and sales force or collaborate with a third-party marketing and sales organization, we would not be able to commercialize our product candidates which would negatively impact our ability to generate product revenues.

If any of our products for which we receive regulatory approval does not achieve broad market acceptance, the revenues that we generate from their sales will be limited.

The commercial success of our electroporation equipment and product candidates for which we obtain marketing approval from the FDA or other regulatory authorities will depend upon the acceptance of these

products by both the medical community and patient population. Coverage and reimbursement of our product candidates by third-party payors, including government payors, generally is also necessary for optimal commercial success. The degree of market acceptance of any of our approved products will depend on a number of factors, including:

- our ability to provide acceptable evidence of safety and efficacy;
- the relative convenience and ease of administration;
- the prevalence and severity of any actual or perceived adverse side effects;
- limitations or warnings contained in a product's FDA-approved labeling, including, for example, potential "black box" warnings
- availability of alternative treatments;
- pricing and cost effectiveness;
- the effectiveness of our or any future collaborators' sales and marketing strategies;
- our ability to obtain sufficient third-party coverage or reimbursement; and
- the willingness of patients to pay out of pocket in the absence of third-party coverage.

If our electroporation equipment and product candidates are approved but do not achieve an adequate level of acceptance by physicians, health care payors and patients, we may not generate sufficient revenue from these products, and we may not become or remain profitable. In addition, our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful.

We are subject to uncertainty relating to reimbursement policies which, if not favorable to our product candidates, could hinder or prevent our products' commercial success.

Our ability to commercialize our electroporation equipment and product candidates successfully will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors establish appropriate coverage and reimbursement levels for our product candidates and related treatments. As a threshold for coverage and reimbursement, third-party payors generally require that drug products have been approved for marketing by the FDA. Third-party payors also are increasingly challenging the effectiveness of and prices charged for medical products and services. We may not be able to obtain third-party coverage or reimbursement for our products in whole or in part.

Healthcare reform measures could hinder or prevent our products' commercial success.

In both the United States and certain foreign jurisdictions there have been, and we anticipate there will continue to be, a number of legislative and regulatory changes to the healthcare system that could impact our ability to sell any of our products profitably. In the United States, the Federal government recently passed healthcare reform legislation, the Patient Protection and Affordable Care Act, or the ACA. The provisions of the ACA are effective on various dates over the next several years. While many of the details regarding the implementation of the ACA are yet to be determined, we believe there will be continuing trends towards expanding coverage to more individuals, containing health care costs and improving quality. At the same time, the rebates, discounts, taxes and other costs associated with the ACA are expected to be a significant cost to the pharmaceutical industry.

The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to make and implement healthcare reforms may adversely affect:

- our ability to set a price we believe is fair for our products;

- our ability to generate revenues and achieve or maintain profitability;
- the availability of capital; and
- our ability to obtain timely approval of our products.

If we fail to comply with applicable healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

Certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights may be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business, without limitation. The laws that may affect our ability to operate include:

- the federal healthcare program Anti-Kickback Statute, which prohibits, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs;
- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- The ACA expands the government's investigative and enforcement authority and increases the penalties for fraud and abuse, including amendments to both the False Claims Act and the Anti-Kickback Statute to make it easier to bring suit under those statutes;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and which also imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;
- the Federal Food, Drug, and Cosmetic Act, which among other things, strictly regulates drug product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Additionally, the compliance environment is changing, with more states, such as California and Massachusetts, mandating implementation of compliance programs, compliance with industry ethics codes, and spending limits, and other states, such as Vermont, Maine, and Minnesota requiring reporting to state governments of gifts, compensation, and other remuneration to physicians. Under the ACA, starting in 2012, pharmaceutical companies will be required to record any transfers of value made to doctors and teaching hospitals and to disclose such data to HHS, with initial disclosure to HHS due in 2013. These laws all provide for penalties for non-compliance. The shifting regulatory environment, along with the requirement to comply with multiple jurisdictions with different compliance and/or reporting requirements, increases the possibility that a company may run afoul of one or more laws.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Any action

against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

If we and the contract manufacturers upon whom we rely fail to produce our systems and product candidates in the volumes that we require on a timely basis, or fail to comply with stringent regulations, we may face delays in the development and commercialization of our electroporation equipment and product candidates.

We manufacture some components of our electroporation systems and utilize the services of contract manufacturers to manufacture the remaining components of these systems and our product supplies for clinical trials. The manufacture of our systems and product supplies requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers often encounter difficulties in production, particularly in scaling up for commercial production. These problems include difficulties with production costs and yields, quality control, including stability of the equipment and product candidates and quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. If we or our manufacturers were to encounter any of these difficulties or our manufacturers otherwise fail to comply with their obligations to us, our ability to provide our electroporation equipment to our partners and products to patients in our clinical trials or to commercially launch a product would be jeopardized. Any delay or interruption in the supply of clinical trial supplies could delay the completion of our clinical trials, increase the costs associated with maintaining our clinical trial program and, depending upon the period of delay, require us to commence new trials at significant additional expense or terminate the trials completely.

In addition, all manufacturers of our products must comply with cGMP requirements enforced by the FDA through its facilities inspection program. These requirements include, among other things, quality control, quality assurance and the generation and maintenance of records and documentation. Manufacturers of our products may be unable to comply with these cGMP requirements and with other FDA, state and foreign regulatory requirements. We have little control over our manufacturers' compliance with these regulations and standards. A failure to comply with these requirements may result in fines and civil penalties, suspension of production, suspension or delay in product approval, product seizure or recall, or withdrawal of product approval. If the safety of any product is compromised due to our or our manufacturers' failure to adhere to applicable laws or for other reasons, we may not be able to obtain regulatory approval for or successfully commercialize our products, and we may be held liable for any injuries sustained as a result. Any of these factors could cause a delay of clinical trials, regulatory submissions, approvals or commercialization of our products, entail higher costs or result in our being unable to effectively commercialize our products. Furthermore, if our manufacturers fail to deliver the required commercial quantities on a timely basis, pursuant to provided specifications and at commercially reasonable prices, we may be unable to meet demand for our products and would lose potential revenues.

Our failure to successfully acquire, develop and market additional product candidates or approved products would impair our ability to grow.

We may acquire, in-license, develop and/or market additional products and product candidates. The success of these actions depends partly upon our ability to identify, select and acquire promising product candidates and products.

The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of such efforts. We may not be able to acquire the rights to additional product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention to develop acquired products or technologies;
- incurrence of substantial debt or dilutive issuances of securities to pay for acquisitions;
- higher than expected acquisition and integration costs;
- increased amortization expenses;
- difficulty and cost in combining the operations and personnel of any acquired businesses with our operations and personnel;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to retain key employees of any acquired businesses.

Further, any product candidate that we acquire may require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to risks of failure typical of product development, including the possibility that a product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities.

Our business involves the use of hazardous materials and we and our third-party manufacturers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our and our third-party manufacturers' activities involve the controlled storage, use and disposal of hazardous materials, including the components of our product candidates and other hazardous compounds. We and our manufacturers are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. In the event of an accident, state or federal authorities may curtail the use of these materials and interrupt our business operations. If we are subject to any liability as a result of our or our third-party manufacturers' activities involving hazardous materials, our business and financial condition may be adversely affected.

We may be subject to stockholder litigation, which would harm our business and financial condition.

We may have actions brought against us by stockholders relating to the Merger, past transactions, changes in our stock price or other matters. Any such actions could give rise to substantial damages, and thereby have a material adverse effect on our consolidated financial position, liquidity, or results of operations. Even if an action is not resolved against us, the uncertainty and expense associated with stockholder actions could harm our business, financial condition and reputation. Litigation can be costly, time-consuming and disruptive to business operations. The defense of lawsuits could also result in diversion of our management's time and attention away from business operations, which could harm our business.

Our results of operations and liquidity needs could be materially affected by market fluctuations and general economic conditions.

Our results of operations could be materially affected by economic conditions generally, both in the United States and elsewhere around the world. Recently, concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, the United States mortgage market and a declining residential real estate market in the United States have contributed to increased volatility and diminished expectations for the economy and the markets going forward. These factors, combined with volatile oil prices, declining business and consumer

confidence and increased unemployment, have precipitated an economic recession. Domestic and international capital markets have also been experiencing heightened volatility and turmoil. These events and the continuing market upheavals may have an adverse effect on us. In the event of a continuing market downturn, our results of operations could be adversely affected. Our future cost of equity or debt capital and access to the capital markets could be adversely affected, and our stock price could decline. There may be disruption in or delay in the performance of our third-party contractors and suppliers. If our contractors, suppliers and partners are unable to satisfy their contractual commitments, our business could suffer. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits. Given the current instability of financial institutions, we may experience losses on these deposits.

Risks Related to Our Intellectual Property

It is difficult and costly to generate and protect our intellectual property and our proprietary technologies, and we may not be able to ensure their protection.

Our commercial success will depend in part on obtaining and maintaining patent, trademark, trade secret, and other intellectual property protection relating to our electroporation equipment and product candidates, as well as successfully defending these intellectual property rights against third-party challenges.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. The laws and regulations regarding the breadth of claims allowed in biotechnology patents has evolved over recent years and continues to undergo review and revision, both in the United States. The biotechnology patent situation outside the United States can be even more uncertain depending on the country. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our licensed patents, our patents or in third-party patents, nor can we predict the likelihood of our patents surviving a patent validity challenge.

The degree of future protection for our intellectual property rights is uncertain, because legal decision-making can be unpredictable, thereby often times resulting in limited protection, which may not adequately protect our rights or permit us to gain or keep our competitive advantage, or resulting in an invalid or unenforceable patent. For example:

- we, or the parties from whom we have acquired or licensed patent rights, may not have been the first to file the underlying patent applications or the first to make the inventions covered by such patents;
- the named inventors or co-inventors of patents or patent applications that we have licensed or acquired may be incorrect, which may give rise to inventorship and ownership challenges;
- others may develop similar or alternative technologies, or duplicate any of our products or technologies that may not be covered by our patents, including design-arounds;
- pending patent applications may not result in issued patents;
- the issued patents covering our products and technologies may not provide us with any competitive advantages or have any commercial value;
- the issued patents may be challenged and invalidated, or rendered unenforceable;
- the issued patents may be subject to reexamination, which could result in a narrowing of the scope of claims or cancellation of claims found unpatentable;
- we may not develop or acquire additional proprietary technologies that are patentable;
- our trademarks may be invalid or subject to a third party’s prior use; or

- our ability to enforce our patent rights will depend on our ability to detect infringement, and litigation to enforce patent rights may not be pursued due to significant financial costs, diversion of resources, and unpredictability of a favorable result or ruling.

We depend, in part, on our licensors and collaborators to protect a portion of our intellectual property rights. In such cases, our licensors and collaborators may be primarily or wholly responsible for the maintenance of patents and prosecution of patent applications relating to important areas of our business. If any of these parties fail to adequately protect these products with issued patents, our business and prospects would be harmed significantly.

We also may rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our trade secrets to competitors. Enforcing a claim that a third-party entity illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

If we or our licensors fail to obtain or maintain patent protection or trade secret protection for our product candidates or our technologies, third parties could use our proprietary information, which could impair our ability to compete in the market and adversely affect our ability to generate revenues and attain profitability.

If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in that litigation would have a material adverse effect on our business.

Other companies may have or may acquire intellectual property rights that could be enforced against us. If they do so, we may be required to alter our technologies, pay licensing fees or cease activities. If our products or technologies infringe the intellectual property rights of others, they could bring legal action against us or our licensors or collaborators claiming damages and seeking to enjoin any activities that they believe infringe their intellectual property rights.

Because patent applications can take many years to issue, and there is a period when the application remains undisclosed to the public, there may be currently pending applications unknown to us or reissue applications that may later result in issued patents upon which our products or technologies may infringe. There could also be existing patents of which we are unaware that our products or technologies may infringe. In addition, if third parties file patent applications or obtain patents claiming products or technologies also claimed by us in pending applications or issued patents, we may have to participate in interference proceedings in the United States Patent and Trademark Office to determine priority of invention. If third parties file oppositions in foreign countries, we may also have to participate in opposition proceedings in foreign tribunals to defend the patentability of our filed foreign patent applications.

If a third party claims that we infringe its intellectual property rights, it could cause our business to suffer in a number of ways, including:

- we may become involved in time-consuming and expensive litigation, even if the claim is without merit, the third party’s patent is invalid or we have not infringed;
- we may become liable for substantial damages for past infringement if a court decides that our technologies infringe upon a third party’s patent;
- we may be enjoined by a court to stop making, selling or licensing our products or technologies without a license from a patent holder, which may not be available on commercially acceptable terms, if at all, or which may require us to pay substantial royalties or grant cross-licenses to our patents; and

- we may have to redesign our products so that they do not infringe upon others' patent rights, which may not be possible or could require substantial investment or time.

If any of these events occur, our business could suffer and the market price of our common stock may decline.

Risks Related to Our Common Stock

The price of our common stock is expected to be volatile and an investment in our common stock could decline substantially in value.

In light of our small size and limited resources, as well as the uncertainties and risks that can affect our business and industry, our stock price is expected to be highly volatile and can be subject to substantial drops, with or even in the absence of news affecting our business. Period to period comparisons are not indicative of future performance. The following factors, in addition to the other risk factors described in this annual report, and the potentially low volume of trades in our common stock, may have a significant impact on the market price of our common stock, some of which are beyond our control:

- developments concerning any research and development, clinical trials, manufacturing, and marketing efforts or collaborations;
- fluctuating public or scientific interest in the potential for influenza pandemic or other applications for our vaccine or other product candidates;
- our announcement of significant acquisitions, strategic collaborations, joint ventures or capital commitments;
- fluctuations in our operating results
- announcements of technological innovations;
- new products or services that we or our competitors offer;
- the initiation, conduct and/or outcome of intellectual property and/or litigation matters;
- changes in financial or other estimates by securities analysts or other reviewers or evaluators of our business;
- conditions or trends in bio-pharmaceutical or other healthcare industries;
- regulatory developments in the United States and other countries;
- negative perception of gene based therapy;
- changes in the economic performance and/or market valuations of other biotechnology and medical device companies;
- additions or departures of key personnel;
- sales or other transactions involving our common stock;
- sales or other transactions by executive officers or directors involving our common stock;
- changes in accounting principles;
- global unrest, terrorist activities, and economic and other external factors; and
- catastrophic weather and/or global disease pandemics.

The stock market in general has recently experienced relatively large price and volume fluctuations. In particular, the market prices of securities of smaller biotechnology and medical device companies have experienced dramatic fluctuations that often have been unrelated or disproportionate to the operating results of

these companies. Continued market fluctuations could result in extreme volatility in the price of the common stock, which could cause a decline in the value of the common stock. In addition, price volatility may increase if the trading volume of our common stock remains limited or declines.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock.

Our amended and restated certificate of incorporation contains provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- the authority of our board of directors to issue shares of undesignated preferred stock and to determine the rights, preferences and privileges of these shares, without stockholder approval;
- all stockholder actions must be effected at a duly called meeting of stockholders and not by written consent; and
- the elimination of cumulative voting.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors, including to delay or impede a merger, tender offer or proxy contest involving our company. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

We have never paid cash dividends on our common stock and we do not anticipate paying dividends in the foreseeable future.

We have paid no cash dividends on our common stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any future debt or credit facility may preclude or limit our ability to pay any dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of potential gain for the foreseeable future.

ITEM 1B. UNRESOLVED STAFF COMMENTS

We have no unresolved written comments from the SEC staff regarding our filings under the Exchange Act.

ITEM 2. PROPERTIES

We own no real property and have no plans to acquire any real property in the future. Our corporate headquarters is located at 1787 Sentry Park West in Blue Bell, Pennsylvania. This lease was signed on December 19, 2009 and runs through April 30, 2016. The annual rent for the approximately 6,442 square feet property will be $122,000 for the first year, $126,000 for the second year, $129,000 for the third year, $132,000 for the fourth year, $135,000 for the fifth year and $139,000 for the sixth year. At the end of the lease term, we have the option of renewing this lease for an additional three-year lease term at an annual rate equal to the fair market rental value of the property, as defined in the lease agreement.

The corporate office in San Diego is located at 11494 Sorrento Valley Road in San Diego, California. The lease was amended in December 2010 to increase the leased space to approximately 13,000 square feet. The lease runs through August 31, 2013 and the annual rent based on the new lease terms will be $221,000 in the first year,

$255,000 in the second year and $184,000 for the partial third year. At the end of the lease term, we have the option of renewing this lease for an additional five-year lease term at an annual rate equal to the fair market rental value of the property, as defined in the lease agreement.

During 2010 we consolidated operations previously performed in The Woodlands, Texas to our Blue Bell and San Diego locations. As a result, in November 2010 we transferred our facility lease in The Woodlands, Texas to a wholly-owned subsidiary of our affiliated entity, VGX Int'l.

We believe our current facilities will be adequate to meet our operating needs for the foreseeable future. Should we need additional space, we believe we will be able to secure additional space at commercially reasonable rates.

ITEM 3. LEGAL PROCEEDINGS

Not applicable.

ITEM 4. RESERVED.

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is listed and traded on the NYSE Amex under the symbol "INO." The following table sets forth the quarterly high and low per share closing prices of our common stock for the two most recent fiscal years.

	Year Ended December 31,			
	2010		2009	
Period:	High	Low	High	Low
First Quarter	$1.49	$1.00	$0.56	$0.28
Second Quarter	$1.45	$1.01	$0.95	$0.31
Third Quarter	$1.26	$0.78	$3.18	$0.66
Fourth Quarter	$1.31	$1.10	$1.69	$1.04

As of February 23, 2011, we had approximately 578 common stockholders of record. This figure does not include beneficial owners who hold shares in nominee name. The closing price per share of our common stock on February 23, 2011 was $1.16, as reported on the NYSE Amex.

Dividends

The payment of any dividends on our common stock is within the discretion of our board of directors. We have not paid cash dividends on our common stock and the board of directors does not expect to declare cash dividends on the common stock in the foreseeable future.

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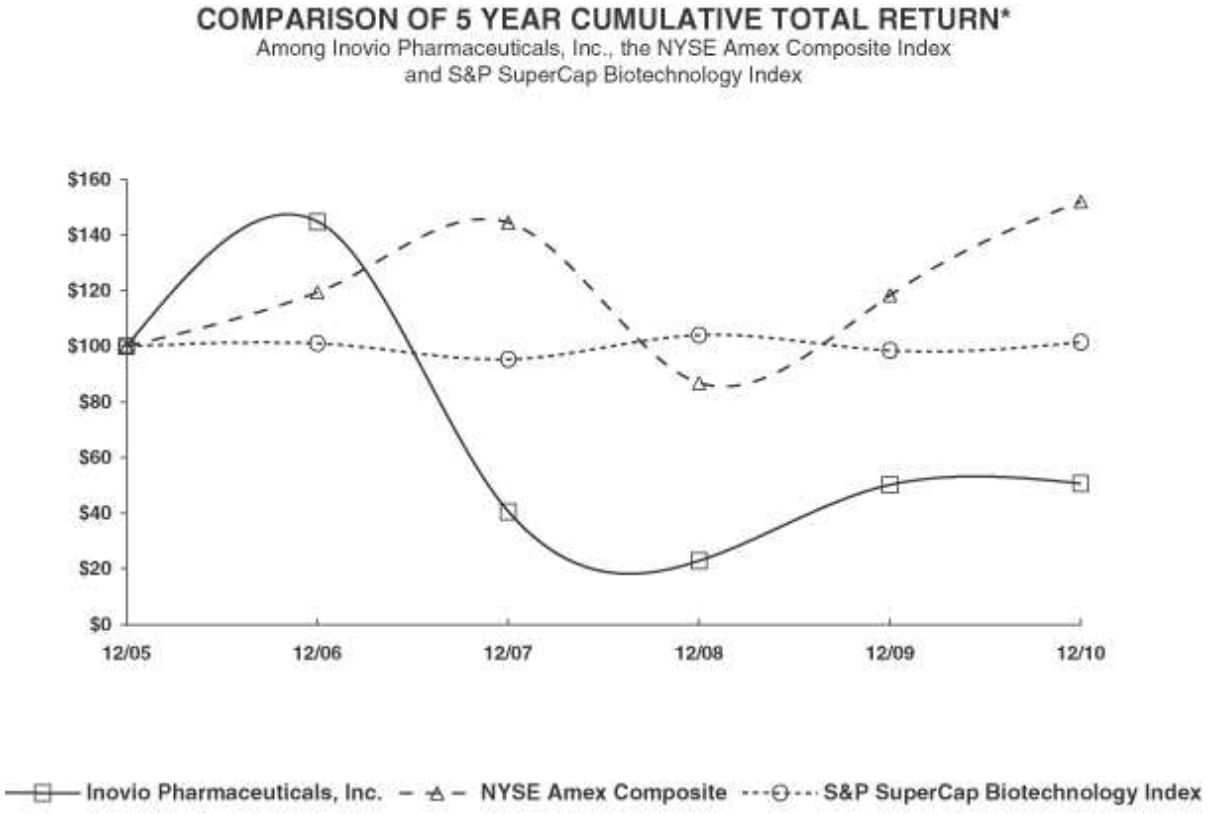
Performance Graph

The graph below matches Inovio Pharmaceuticals, Inc.'s cumulative 5-year total shareholder return on common stock with the cumulative total returns of the NYSE Amex Composite index and the S & P SuperCap Biotechnology index. The graph assumes that the value of the investment in our common stock and in each of the indexes (including reinvestment of dividends) was $100 on December 31, 2005 and tracks it through December 31, 2010.



*$100 invested on 12/31/05 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

	12/05	12/06	12/07	12/08	12/09	12/10
Inovio Pharmaceuticals, Inc.	100.00	144.93	40.52	22.91	50.22	50.66
NYSE Amex Composite	100.00	119.54	144.62	87.02	118.50	152.13
S&P SuperCap Biotechnology	100.00	101.08	95.44	104.19	98.51	101.58

The stock price performance included in this graph is not necessarily indicative of future stock price performance.

ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth our selected consolidated financial data for the periods indicated, derived from consolidated financial statements prepared in accordance with United States generally accepted accounting principles.

	Year Ended December 31, 2010	Year Ended December 31, 2009	Year Ended December 31, 2008	Year Ended December 31, 2007	Year Ended December 31, 2006
Operations Data:					
License fee and milestone payments	$ 527,222	$ 4,929,309	$ 791,401	$ 2,793,478	$ 1,337,105
Revenue under collaborative research & development arrangements	—	125,996	1,077,967	1,854,303	962,207
Grants & miscellaneous revenue	5,617,483	4,064,806	228,264	159,948	1,168,866
Total revenues	6,144,705	9,120,111	2,097,632	4,807,729	3,468,178
Loss from operations	(19,220,162)	(13,957,755)	(13,658,464)	(15,898,420)	(13,346,194)
Interest & other income (expense), net	2,551,330	(1,256,555)	692,842	4,693,977	1,002,252
Loss from investment in affiliated entity	(969,914)	(9,244,614)	—	—	—
Net loss	(17,638,746)	(24,458,924)	(12,965,622)	(11,204,443)	(12,343,942)
Net loss attributable to non-controlling interest	24,950	47,439	—	—	—
Imputed & declared dividends on preferred stock	—	—	—	(23,335)	(2,005,664)
Net loss attributable to Inovio Pharmaceuticals, Inc.	$ (17,613,796)	$ (24,411,485)	$ (12,965,622)	$ (11,227,778)	$ (14,349,606)
Per common share—basic & diluted:					
Net loss	$ (0.17)	$ (0.33)	$ (0.30)	$ (0.27)	$ (0.40)
Imputed & declared dividends preferred stock	—	—	—	—	(0.06)
Net loss attributable to common stockholders	$ (0.17)	$ (0.33)	$ (0.30)	$ (0.27)	$ (0.46)
Balance Sheet Data:					
Cash and cash equivalents	$ 19,998,489	$ 30,296,215	$ 14,115,281	$ 10,250,929	$ 8,321,606
Short-term investments	1,846,271	10,397,530	—	16,999,600	14,700,000
Long-term investments	—	—	9,169,471	—	—
Total assets	56,067,391	80,628,917	38,987,028	39,775,021	35,949,615
Current liabilities	6,436,708	19,350,038	14,709,582	3,354,499	6,859,722
Accumulated deficit	(194,838,229)	(177,224,433)	(152,812,948)	(139,847,326)	(128,619,548)
Total stockholders' equity	47,100,911	61,184,947	19,106,147	31,034,754	18,151,864

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This report contains forward-looking statements. These statements relate to future events or our future financial performance. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "potential" or "continue," the negative of such terms or other comparable terminology. These statements are only predictions. Actual events or results may differ materially.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. Moreover, neither we, nor any other person, assume responsibility for the accuracy and completeness of the forward-looking statements. We are under no obligation to update any of the forward-looking statements after the filing of this Annual Report to conform such statements to actual results or to changes in our expectations.

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes and other financial information appearing elsewhere in this Annual Report. Readers are also urged to carefully review and consider the various disclosures made by us which attempt to advise interested parties of the factors which affect our business, including without limitation the disclosures made in Item 1A of Part I of this Annual Report under the Caption "Risk Factors."

Risk factors that could cause actual results to differ from those contained in the forward-looking statements include but are not limited to: our history of losses; our lack of products that have received regulatory approval; uncertainties inherent in clinical trials and product development programs, including but not limited to the fact that pre-clinical and clinical results may not be indicative of results achievable in other trials or for other indications, that results from one study may not necessarily be reflected or supported by the results of other similar studies, that results from an animal study may not be indicative of results achievable in human studies, that clinical testing is expensive and can take many years to complete, that the outcome of any clinical trial is uncertain and failure can occur at any time during the clinical trial process, and that our electroporation technology and DNA vaccines may fail to show the desired safety and efficacy traits in clinical trials; the availability of funding; the ability to manufacture vaccine candidates; the availability or potential availability of alternative therapies or treatments for the conditions targeted by us or our collaborators, including alternatives that may be more efficacious or cost-effective than any therapy or treatment that we and our collaborators hope to develop; whether our proprietary rights are enforceable or defensible or infringe or allegedly infringe on rights of others or can withstand claims of invalidity; and the impact of government healthcare proposals.

Overview

We are engaged in the discovery, development, and delivery of a new generation of vaccines, called DNA vaccines, focused on cancers and infectious diseases. Our SynCon ™ technology enables the design of "universal" DNA-based vaccines capable of providing cross-protection against new, unmatched strains of pathogens such as influenza. Our electroporation DNA delivery technology uses brief, controlled electrical pulses to increase cellular DNA vaccine uptake. Initial human data has shown this method can safely and significantly increase gene expression and immune responses. Our clinical programs include HPV/cervical cancer (therapeutic), avian influenza (preventative), HCV and HIV vaccines. We are advancing preclinical research for a universal seasonal/pandemic influenza vaccine as well as other products. Our partners and collaborators include University of Pennsylvania, National Microbiology Laboratory of the Public Health Agency of Canada, MVI (PATH), NIAID (NIH), Merck, ChronTech, University of Southampton, and HIV Vaccines Trial Network ("HVTN").

All of our potential human products are in research and development phases. No revenues have been generated from the sale of any such products, nor are any such revenues expected for at least the next several years. We earn revenue from license fees and milestone revenue, collaborative research and development agreements, grants and government contracts. Our product candidates will require significant additional research

and development efforts, including extensive preclinical and clinical testing. All product candidates that we advance to clinical testing will require regulatory approval prior to commercial use, and will require significant costs for commercialization. We may not be successful in our research and development efforts, and we may never generate sufficient product revenue to be profitable.

On June 1, 2009, we completed the Merger resulting in our acquisition of VGX. We believe the Merger advances our ability to play a leadership role in the discovery, development, and delivery of DNA vaccines.

On May 14, 2010, we amended our Certificate of Incorporation to change our name from "Inovio Biomedical Corporation" to "Inovio Pharmaceuticals, Inc."

Recent Developments

On January 27, 2011, we entered into investor purchase agreements with investors relating to the issuance and sale of (a) 21,130,400 shares of common stock, and (b) warrants to purchase a total of 10,565,200 shares of common stock with an exercise price of $1.40 per share, for an aggregate purchase price of approximately $24.3 million. The shares of common stock and warrants were sold in units, consisting of one share of common stock and a warrant to purchase 0.50 of a share of common stock, at a purchase price of $1.15 per unit. The warrants have a five-year term from the date of issuance and are first exercisable commencing on the 180th day after the date of issuance. We may call the warrants if the closing bid price of the common stock has been at least $2.80 over 20 trading days and certain other conditions are met. We received net proceeds from the transaction of approximately $23.0 million, after deducting the placement agent's fee and other estimated offering expenses.

On March 24, 2010, we entered into the Agreement with VGX Int'l. Under the Agreement, we granted VGX Int'l an exclusive license to the Product, i.e., Inovio's SynCon ™ universal influenza vaccine delivered with electroporation to be developed in certain countries in Asia.

As consideration for the license granted to VGX Int'l, we have received payment of $3.0 million as a research and development initiation fee, and will receive research support, annual license maintenance fees and royalties on net product sales. In addition, contingent upon achievement of clinical and regulatory milestones, we will receive development payments over the term of the Agreement. The Agreement also provides us with exclusive rights to supply devices for clinical and commercial purposes (including single use components) to VGX Int'l for use in the Product.

The term of the Agreement commenced upon execution and will extend on a country by country basis until the last to expire of all Royalty Periods for the territory (as such term is defined in the Agreement) for any Product in that country, unless the Agreement is terminated earlier in accordance with its provisions as a result of breach, by mutual agreement, or by VGX Int'l's right to terminate without cause upon prior written notice.

In January 2010, we announced that we expanded our existing license agreement with the University of Pennsylvania, adding exclusive worldwide licenses for technology and intellectual property for novel DNA vaccines against pandemic influenza, Chikungunya, and foot-and-mouth disease. The amendment also encompasses new chemokine and cytokine molecular adjuvant technologies. The technology was developed in the University of Pennsylvania laboratory of Professor David B. Weiner, a pioneer in the field of DNA vaccines, and chairman of our scientific advisory board. Under the terms of the original license agreement completed in 2007, we obtained exclusive worldwide rights to develop multiple DNA plasmids and constructs with the potential to treat and/or prevent HIV, HCV, HPV and influenza and included molecular adjuvants. These prior and most recent agreements and amendments provide for royalty payments, based on future sales, to the University of Pennsylvania.

As of December 31, 2010, we had an accumulated deficit of $194.8 million. We expect to continue to incur substantial operating losses in the future due to our commitment to our research and development programs, the funding of preclinical studies, clinical trials and regulatory activities and the costs of general and administrative activities.

Critical Accounting Policies

The SEC defines critical accounting policies as those that are, in management's view, important to the portrayal of our financial condition and results of operations and require management's judgment. Our discussion and analysis of our financial condition and results of operations is based on our audited consolidated financial statements, which have been prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP"). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses. We base our estimates on experience and on various assumptions that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from those estimates. Our critical accounting policies include:

Revenue Recognition. License fees are comprised of initial fees and milestone payments derived from collaborative licensing arrangements. We continue to recognize non-refundable milestone payments upon the achievement of specified milestones upon which we have earned the milestone payment, provided the milestone payment is substantive in nature and the achievement of the milestone was not reasonably assured at the inception of the agreement. We defer payments for milestone events which are reasonably assured and recognize them ratably over the minimum remaining period of our performance obligations. Payments for milestones that are not reasonably assured are treated as the culmination of a separate earnings process and are recognized as revenue when the milestones are achieved.

We have adopted a strategy of co-developing or licensing our gene delivery technology for specific genes or specific medical indications. Accordingly, we have entered into collaborative research and development agreements and have received funding for pre-clinical research and clinical trials. Payments under these agreements, which are non-refundable, are recorded as revenue as the related research expenditures are incurred pursuant to the terms of the agreements and provided collectability is reasonably assured.

We receive non-refundable grants under available government programs. Government grants towards current expenditures are recorded as revenue when there is reasonable assurance that we have complied with all conditions necessary to receive the grants, collectability is reasonably assured, and as the expenditures are incurred.

Research and development expenses. Since our inception, virtually all of our activities have consisted of research and development efforts related to developing our electroporation technologies and DNA vaccines. Research and development expenses consist of expenses incurred in performing research and development activities including salaries and benefits, facilities and other overhead expenses, clinical trials, contract services and other outside expenses. Research and development expenses are charged to operations as they are incurred.

Valuation and Impairment Evaluations of Goodwill and Intangible Assets. Goodwill represents the excess of acquisition cost over the fair value of the net assets of acquired businesses. As of December 31, 2010, our intangible assets resulting from the acquisition of VGX and Inovio AS, and additional intangibles including previously capitalized patent costs and license costs, net of accumulated amortization, totaled $11.2 million. Intangible assets are amortized over their estimated useful lives ranging from 5 to 18 years. We are concurrently conducting Phase I and pre-clinical trials using acquired intangibles, and we have entered into certain significant licensing agreements for use of these acquired intangibles.

Historically we have recorded patents at cost and amortized these costs using the straight-line method over the expected useful lives of the patents or 17 years, whichever is less. Patent costs consist of the consideration paid for patents and related legal costs. Effective June 1, 2009, in connection with our acquisition of VGX, all new patent costs will be expensed as incurred. Patent costs currently capitalized will continue to be amortized over the expected life of the patent. The effect of this change was immaterial to prior periods. License costs are recorded based on the fair value of consideration paid and amortized using the straight-line method over the shorter of the expected useful life of the underlying patents or the term of the related license agreement.

The determination of the value of such intangible assets requires management to make estimates and assumptions that affect our consolidated financial statements. We assess potential impairments to intangible assets when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset may not be recovered. Our judgments regarding the existence of impairment indicators and future cash flows related to intangible assets are based on operational performance of our acquired businesses, market conditions and other factors. If impairment is indicated, we reduce the carrying value of the intangible asset to fair value. While our current and historical operating and cash flow losses are potential indicators of impairment, we believe the future cash flows to be received from our intangible assets will exceed the intangible assets' carrying value, and accordingly, we have not recognized any impairment losses through December 31, 2010.

Goodwill and intangible assets with indefinite lives are not amortized but instead are measured for impairment annually, or when events indicate that impairment exists. Our accounting policy with respect to reviewing goodwill for impairment is a two step process. The first step of the impairment test compares the fair value of our reporting unit with its carrying value including allocated goodwill. If the carrying value of our reporting unit exceeds its fair value, then the second step of the impairment test is performed to measure the impairment loss, if any. We test goodwill for impairment at the entity level, which is considered our reporting unit. Our estimate of fair value is determined using both the Discounted Cash Flow method of the Income Approach and the Guideline Public Company method of the Market Approach. The Discounted Cash Flow method estimates future cash flows of our business for a certain discrete period and then discounts them to their present value. The Guideline Public Company method computes value indicators ("multiples") from the operating data of the selected publicly traded guideline companies. After these multiples were evaluated, appropriate value indicators were selected and applied to the operating statistics of the reporting unit to arrive at indications of value. Specifically, we relied upon the application of Total Invested Capital based valuation multiples for each guideline company. In applying the Income and Market Approaches, premiums and discounts were determined and applied to estimate the fair values of the reporting unit. To arrive at the indicated value of equity under each approach, we then assigned a relative weighting to the resulting values from each approach to determine whether the carrying value of the reporting unit exceeds its fair value, thus requiring step two of the impairment test.

We conduct the impairment test annually on November 30th for each fiscal year for which goodwill is evaluated for impairment. We are also aware of the requirement to evaluate goodwill for impairment at other times should circumstances arise. To date, we have concluded that the fair value of the reporting unit significantly exceeded the carrying value and therefore, step two of the impairment test has never been performed.

Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use are consistent with our internal planning. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on all or a portion of our goodwill and intangible assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values. Future events could cause us to conclude that impairment indicators exist and that goodwill or other intangible assets associated with our acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on our results of operations.

Stock-based Compensation. Stock-based compensation cost is estimated at the grant date based on the fair-value of the award and is recognized as an expense ratably over the requisite service period of the award. Determining the appropriate fair-value model and calculating the fair value of stock-based awards at the grant date requires considerable judgment, including estimating stock price volatility, expected option life and forfeiture rates. We develop our estimates based on historical data. If factors change and we employ different assumptions in future periods, the compensation expense that we record may differ significantly from what we have recorded in the current period. A small change in the estimates used may have a relatively large change in the estimated valuation. We use the Black-Scholes pricing model to value stock option awards. We recognize compensation expense using the straight-line amortization method.

Registered Common Stock Warrants. We account for registered common stock warrants pursuant to the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the registered warrants require the issuance of registered securities upon exercise and do not sufficiently preclude an implied right to net cash settlement. We classify registered warrants on the consolidated balance sheet as a current liability which is revalued at each balance sheet date subsequent to the initial issuance. Determining the appropriate fair-value model and calculating the fair value of registered warrants requires considerable judgment including estimating stock price volatility and expected warrant life. We develop our estimates based on historical data. A small change in the estimates used may have a relatively large change in the estimated valuation. We use the Black-Scholes pricing model to value the registered warrants. Changes in the fair market value of the warrants are reflected in the consolidated statement of operations as "Other income/(expense), net."

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements is contained in Note 3 to the Consolidated Financial Statements, included elsewhere in this report.

Results of Operations

Comparison of Years Ended December 31, 2010 and 2009

The audited consolidated financial data for the years ended December 31, 2010 and December 31, 2009 is presented in the following table and the results of these two periods are used in the discussion thereafter.

	December 31, 2010	December 31, 2009	Increase/ (Decrease) $	Increase/ (Decrease) %
Revenues:				
License fee and milestone payments	$ 527,222	$ 4,929,309	$(4,402,087)	(89)%
Revenue under collaborative research and development arrangements	—	125,996	(125,996)	(100)
Grants and miscellaneous revenue	5,617,483	4,064,806	1,552,677	38
Total revenues	6,144,705	9,120,111	(2,975,406)	(33)
Operating expenses:				
Research and development	13,256,606	9,408,457	3,848,149	41
General and administrative	12,108,261	13,669,409	(1,561,148)	(11)
Total operating expenses	25,364,867	23,077,866	2,287,001	10
Loss from operations	(19,220,162)	(13,957,755)	(5,262,407)	(38)
Other income/(expense), net	2,476,816	(1,258,848)	3,735,664	297
Interest income, net	74,514	2,293	72,221	3150
Loss from investment in affiliated entity	(969,914)	(9,244,614)	8,274,700	90
Net loss	(17,638,746)	(24,458,924)	6,820,178	28
Net loss attributable to non-controlling interest	24,950	47,439	(22,489)	(47)
Net loss attributable to Inovio Pharmaceuticals, Inc.	$(17,613,796)	$(24,411,485)	$ 6,797,689	28%

Revenue

Our revenue consists of license fees, milestone payments, and amounts received from collaborative research and development arrangements and grants.

Our total revenue decreased $3.0 million or 33% for the year ended December 31, 2010, as compared to the year ended December 31, 2009 due to decreases in license fees and revenue from collaborative research and development arrangements offset by an increase in grants and miscellaneous revenue.

The $4.4 million decrease in license fees and milestone payments for the year ended December 31, 2010 as compared to 2009 was primarily due to no revenues recognized in 2010 under the Wyeth collaboration and licensing agreement. In 2009 we accelerated and recognized $4.1 million of deferred revenue due to the cancellation of the Wyeth agreement in July 2009. The decrease was also attributable to less revenue recognized from other smaller license agreements. These decreases were partially offset by revenues recognized in 2010 from the VGX Int'l Collaboration and License Agreement.

The $126,000 decrease in revenue under collaborative research and development arrangements during the year ended December 31, 2010 as compared to 2009 was due to no revenues recognized under our research and collaboration agreement with Merck, as we have provided the majority of the required device development for use in their clinical trials. We believe that development activities will be limited until trial results are obtained.

The $1.6 million increase in grant and miscellaneous revenue for the year ended December 31, 2010 as compared to 2009, was primarily due to higher revenues recognized from our contract with the NIAID of $4.1 million for the year ended December 31, 2010 as compared to $3.0 million for 2009. The NIAID contract, which was modified in September 2010, has an initial term of five years with two one-year options (period of performance is September 30, 2008 – September 29, 2015 including the two options). The current value of the contract for the five years is $24.6 million with option years six and seven valued at $1.3 million and $1.0 million, respectively, for a total potential value of $26.9 million, and will fund research and development for HIV DNA-based vaccines delivered via our proprietary electroporation system. The increase is also attributed to the $733,000 grant awarded in October 2010 under The Patient Protection and Affordable Care Act of 2010 ("PPACA"). The grant was related to three of our projects, including the Phase II clinical trial of VGX-3100, a therapeutic vaccine for cervical dysplasia and cancer as well as development projects for SynCon ™ universal flu and dengue vaccines. The PPACA provides small and mid-sized biotech, pharmaceutical and medical device companies with up to a 50% tax credit for investments in qualified therapeutic discoveries for tax years 2009 and 2010, or a grant for the same amount tax-free. These increases were partially offset by less revenue recognized under our PATH Malaria Vaccine Initiative ("MVI") contract and from the Department of Defense ("U.S. Army") grant. PATH is an international nonprofit organization funded by private donors. We have a research program and agreement with the PATH MVI to evaluate in a preclinical feasibility study our SynCon ™ DNA vaccine development platform to target antigens from *Plasmodium* species and deliver them intradermally using the CELLECTRA ® electroporation device. The initial agreement with MVI was for $685,000 and was completed in February 2010. In September 2010 we entered into an amended agreement with PATH to further this study in non-human primates. The amended agreement has a total value of $804,000 and is expected to be completed by August 2011. The U.S. Army grant had a total value of $933,000 and was completed in May 2010. This project funded research and development of DNA-based vaccines delivered via our proprietary electroporation system and focused on identifying DNA vaccine candidates with the potential to provide rapid, robust immunity to protect against bio-warfare and bioterror attacks.

Research and Development Expenses

The $3.8 million increase in research and development expenses for the year ended December 31, 2010 as compared to 2009, was primarily due to higher costs related to work performed for the NIAID contract, higher outside services and contract labor expenses related to research and development projects, higher outside engineering professional services related to CELLECTRA ® development, higher clinical trial costs and higher personnel costs due to greater employee headcount on average throughout the year. The increase was partially offset by a decrease in expenses incurred by our Norwegian subsidiaries as these entities ceased operations in 2009 as well as lower stock based compensation expense.

Our research and development activities reflect our efforts to advance our products through the various stages of product development. The expenditures that will be necessary to execute our development plans are subject to numerous uncertainties, which may affect our research and development expenditures and capital resources. Even if earlier results are positive, we may obtain different results in later stages of development, which could impact our development expenditures for a particular product. Although we spend a considerable amount of time planning our development activities, we may be required to alter our plan based on new circumstances or events. Any deviation from our plan may require us to incur additional expenditures or accelerate or delay the timing of our development spending.

General and Administrative Expenses

General and administrative expenses include business development expenses and the amortization of intangible assets. The $1.6 million decrease in general and administrative expenses for the year ended December 31, 2010 as compared to the year ended December 31, 2009, was primarily due to lower legal and related fees associated with the Merger and other corporate matters. Upon closing of the Merger in 2009, we incurred costs such as Merger related compensation to key employees, higher accounting, audit and valuation fees, higher insurance costs, and higher employee stock based compensation due to the accelerated vesting of all Inovio stock options. The decrease was also attributable to a decrease in expenses incurred by our Norwegian subsidiaries as these entities ceased operations in 2009. These decreases were partially offset by an increase in recurring operating expenses including the amortization of intangible assets acquired in the Merger due to a full year operating as a combined company in 2010 when compared to a partial year in 2009.

Stock-based Compensation.

Stock-based compensation cost is measured at the grant date, based on the fair value of the award reduced by estimated forfeitures, and is recognized as expense over the employee's requisite service period. Total compensation cost for our stock plans for the years ended December 31, 2010 and 2009 was $898,000 and $1.8 million, of which $281,000 and $595,000 was included in research and development expenses and $617,000 and $1.2 million was included in general and administrative expenses, respectively. At December 31, 2010, there was $928,000 of total unrecognized compensation cost, related to unvested stock options, which we expect to recognize over a weighted-average period of 1.7 years, as compared to $1.4 million for the year ended December 31, 2009 expected to be recognized over a weighted-average period of 2.5 years. Total stock-based compensation for options granted to non-employees for the years ended December 31, 2010 and 2009 was $277,000 and $339,000, respectively.

Other Income/(Expense), net

We recorded other income/(expense), net, for the years ended December 31, 2010 and 2009 of $2.5 million and $(1.3 million), respectively. The increase in other income (expense), net, is primarily due to the revaluation of registered common stock warrants issued by us in October 2006, August 2007 and July 2009. We revalue the warrants at each balance sheet date to fair value. If unexercised, the warrants will expire at various dates between October 2011 and July 2014.

Interest Income, net

Interest income/(expense), net, for the years ended December 31, 2010 and 2009 was $75,000 and $2,000, respectively. The increase in interest income/(expense), net, for the year ended December 31, 2010 as compared to the year ended December 31, 2009, was primarily due to a decrease in interest expense related to the convertible debt obtained in connection with the Merger which was converted to common stock in August 2009, offset by lower interest income earned due to a lower cash and investments balance.

Gain (Loss) from investment in affiliated entity

Gain (loss) is a result of the change in the fair market value of the investment in VGX Int'l as of December 31, 2010.

Income Taxes

Since inception, we have incurred operating losses and accordingly have not recorded a provision for income taxes for any of the periods presented. As of December 31, 2010, we had net operating loss carry forwards for federal, California and Pennsylvania income tax purposes of approximately $71.6 million, $24.7 million and $39.8 million, respectively, net of the net operating losses that will expire due to IRC Section 382 limitations. We also had federal and California research and development tax credits of approximately $550,000 and $1.6 million, respectively, net of the federal research and development credits that will expire due to IRC Section 383 limitations. If not utilized, the net operating losses and credits will begin to expire in 2011. Utilization of net operating losses and credits are subject to a substantial annual limitation due to ownership change limitations provided by the Internal Revenue Code of 1986, as amended.

Comparison of Years Ended December 31, 2009 and 2008

The audited consolidated financial data for the years ended December 31, 2009 and December 31, 2008 is presented in the following table and the results of these two periods are used in the discussion thereafter.

	December 31, 2009	December 31, 2008	Increase/ (Decrease) $	Increase/ (Decrease) %
Revenues:				
License fee and milestone payments	$ 4,911,087	$ 791,401	$ 4,119,686	521%
License fee and milestone payments from affiliated entity	18,222	—	18,222	100
Revenue under collaborative research and development arrangements	125,996	1,077,967	(951,971)	(88)
Grants and miscellaneous revenue	4,023,941	228,264	3,795,677	1,663
Grants and miscellaneous revenue from affiliated entity	40,865	—	40,865	100
Total revenues	9,120,111	2,097,632	7,022,479	335
Operating expenses:				
Research and development	9,408,457	5,750,494	3,657,963	64
General and administrative	13,669,409	10,005,602	3,663,807	37
Total operating expenses	23,077,866	15,756,096	7,321,770	46
Loss from operations	(13,957,755)	(13,658,464)	(299,291)	(2)
Other income/(expense), net	(1,258,848)	49,006	(1,307,854)	(2,669)
Interest income/(expense), net	2,293	643,836	(641,543)	(100)
Loss from investment in affiliated entity	(9,244,614)	—	(9,244,614)	(100)
Net loss	(24,458,924)	(12,965,622)	(11,493,302)	(89)
Net loss attributable to non-controlling interest	47,439	—	47,439	100
Net loss attributable to Inovio Pharmaceuticals, Inc.	$(24,411,485)	$(12,965,622)	$(11,445,863)	(88)%

Revenue

Our revenue consists of license fees, milestone payments, and amounts received from collaborative research and development arrangements and grants.

Our total revenue increased $7.0 million or 335% for the year ended December 31, 2009, as compared to the year ended December 31, 2008 due to increases in license fee revenues and increase in grants and miscellaneous revenue, offset by a decrease in revenues under collaborative research and development arrangements.

The $4.1 million increase in license fees and milestone payments for the year ended December 31, 2009 as compared to 2008 was primarily due to the acceleration of $4.1 million of deferred revenues recognized as a result of the cancellation of the Wyeth collaboration and licensing agreement in July 2009. Revenue from other license agreements remained consistent during the years ended December 31, 2009 and 2008.

The $952,000 decrease in revenue under collaborative research and development arrangements during the year ended December 31, 2009 as compared to 2008 was due to a decrease in Merck collaborative research billings of $506,000, as well as no billings to Wyeth in 2009 from our collaborative agreement related to the commercialization of the Elgen device. Revenues from collaborative research and development arrangements are expected to continue to decline, as Wyeth terminated its collaboration and licensing agreement as of July 2009 and under our research and collaboration agreement with Merck, we have provided the majority of the required device development for use in their clinical trials and we believe that development activities will be limited until trial results are obtained.

The $3.8 million increase in grant and miscellaneous revenue for the year ended December 31, 2009 as compared to 2008 was primarily due to revenues recognized from our contract with the NIAID and the PATH Malaria Vaccine Initiative (“MVI”) of $3.0 million and $440,000, respectively, since June 1, 2009, and higher revenues recognized from the U.S. Army grant of $373,000. At December 31, 2009, the original NIAID contract was for five years with two one-year options (period of performance is September 30, 2008 – September 29, 2015 including the two options). The value for the five years was $21.3 million with option years six and seven valued at $1.2 million and $1.1 million, respectively, for a total potential value of $23.6 million, and will fund research and development for HIV DNA-based vaccines delivered via our proprietary electroporation system. PATH is an international nonprofit organization funded by private donors. We have a research program and agreement with the PATH MVI to evaluate in a preclinical feasibility study our SynCon ™ DNA vaccine development platform to target antigens from *Plasmodium* species and deliver them intradermally using the CELLECTRA ® electroporation device. The original agreement with MVI was for $685,000 and ran through February 2010. The U.S. Army grant had a total value of $933,000, funded research and development of DNA-based vaccines delivered via our proprietary electroporation system and ran through May 2010. This project focused on identifying DNA vaccine candidates with the potential to provide rapid, robust immunity to protect against bio-warfare and bioterror attacks. During the years ended December 31, 2009 and 2008, we recognized revenue of $57,000 and $135,000, respectively, attributable to the operations of our Norwegian subsidiary, Inovio AS, which amounted to approximately 1% and 6% of our total revenue. Inovio AS’ revenue primarily consists of amounts received from grants and licensing revenue. Inovio AS was dissolved in December 2009. Operating activities for Inovio AS are now conducted in the United States.

Research and Development Expenses

The $3.7 million increase in research and development expenses for the year ended December 31, 2009 as compared to the year ended December 31, 2008, was primarily due to higher costs related to work performed for the NIAID contract as well as higher other outside services and contract labor expenses related to research and development projects. The increase was partially offset by a decrease in research and development expenses incurred by our Norwegian subsidiaries as these entities were winding down operations during 2009, as well as a decrease in outside lab testing and lab and engineering supply purchases. Research and development expenses attributable to Inovio AS were $311,000 and $751,000 for the years ended December 31, 2009 and 2008, respectively.

Our research and development activities reflect our efforts to advance our products through the various stages of product development. The expenditures that will be necessary to execute our development plans are

subject to numerous uncertainties, which may affect our research and development expenditures and capital resources. Even if earlier results are positive, we may obtain different results in later stages of development, which could impact our development expenditures for a particular product. Although we spend a considerable amount of time planning our development activities, we may be required to alter our plan based on new circumstances or events. Any deviation from our plan may require us to incur additional expenditures or accelerate or delay the timing of our development spending.

General and Administrative Expenses

General and administrative expenses include business development expenses and the amortization of intangible assets. The $3.7 million increase in general and administrative expenses for the year ended December 31, 2009, as compared to the year ended December 31, 2008, was primarily due to higher legal and related fees associated with the Merger and other corporate matters. Upon closing of the Merger, we also incurred costs that would have not been incurred in the prior year, such as Merger related compensation to key employees, higher amortization expense as a result of the intangible assets that were acquired from VGX, and higher employee stock based compensation due to the accelerated vesting of all Inovio stock options. The increase was also attributed to higher accounting, audit and valuation fees related to the Merger and the combined company. These increases were partially offset by a decrease in outside consulting services related to partnering our SECTA therapy program and other corporate advisory services. Additionally, as a result of the dissolution of our Norwegian subsidiaries, general and administrative expenses were offset by the reversal of an $887,000 deferred tax liability previously recorded in connection with the original acquisition of the Norwegian entity. General and administrative costs attributable to Inovio AS were $341,000 and $376,000 for the years ended December 31, 2009 and 2008, respectively.

Stock-based Compensation.

Stock-based compensation cost is measured at the grant date, based on the fair value of the award reduced by estimated forfeitures, and is recognized as expense over the employee's requisite service period. Total compensation cost for our stock plans for the years ended December 31, 2009 and 2008 was $1.8 million and $1.0 million, of which $595,000 and $286,000 was included in research and development expenses and $1.2 million and $746,000 was included in general and administrative expenses, respectively. At December 31, 2009, there was $1.4 million of total unrecognized compensation cost, related to unvested stock options, which we expect to recognize over a weighted-average period of 2.5 years, as compared to $752,000 for the year ended December 31, 2008. Total stock-based compensation for options granted to non-employees for the years ended December 31, 2009 and 2008 was $339,000 and $58,000, respectively.

Other Income (Expense), net

We recorded other income (expense), net, for the years ended December 31, 2009 and 2008 of $(1.3 million) and $49,000, respectively. The increase in other income (expense), net, is primarily due to the revaluation of registered common stock warrants issued by us in October 2006, August 2007 and July 2009. We revalue the warrants at each balance sheet date to fair value. If unexercised, these warrants have or will expire at various dates through July 2014.

Interest Income (Expense), net

Interest income (expense), net, for the years ended December 31, 2009 and 2008 was $2,000 and $644,000, respectively. The decrease in interest income (expense), net, for the year ended December 31, 2009 as compared to the year ended December 31, 2008, was primarily due to a lower average cash and investments balance and lower average interest rate during the year, as well as an increase in interest expense related to the convertible debt obtained in connection with the Merger. This debt was converted to common stock in August 2009.

Gain (Loss) from investment in affiliated entity

Gain (loss) is a result of the change in the investment fair market value as of December 31, 2009.

Income Taxes

Since inception, we have incurred operating losses and accordingly have not recorded a provision for income taxes for any of the periods presented. As of December 31, 2009, we had net operating loss carry forwards for federal, California and Pennsylvania income tax purposes of approximately $106.2 million, $67.5 million and $33.9 million, respectively. We also had federal and California research and development tax credits of approximately $2.6 million and $1.6 million, respectively. If not utilized, the net operating losses and credits will begin to expire in 2013. Utilization of net operating losses and credits are subject to a substantial annual limitation due to ownership change limitations provided by the Internal Revenue Code of 1986, as amended.

Liquidity and Capital Resources

Historically, our primary uses of cash have been to finance research and development activities including clinical trial activities in the oncology, DNA vaccines and other immunotherapy areas of our business. Since inception, we have satisfied our cash requirements principally from proceeds from the sale of equity securities.

Working Capital and Liquidity

As of December 31, 2010, we had working capital of $16.4 million, as compared to $25.2 million as of December 31, 2009. The decrease in working capital during the year ended December 31, 2010 was primarily due to expenditures related to our research and development activities, as well as various general and administrative expenses related to legal, consultants, accounting and audit, and corporate development. These expenditures were offset by the $3.0 million received from VGX Int'l in connection with the March 2010 Collaboration and License Agreement, as well as a decrease in the valuation of registered common stock warrants.

In January 2011, the Company entered into investor purchase agreements with investors relating to the issuance and sale of (a) 21,130,400 shares of common stock, and (b) warrants to purchase a total of 10,565,200 shares of common stock with an exercise price of $1.40 per share, for an aggregate purchase price of approximately $24.3 million. The shares of common stock and warrants were sold in units, consisting of one share of common stock and a warrant to purchase 0.50 of a share of common stock, at a purchase price of $1.15 per unit. The Company received net proceeds from the transaction of approximately $23.0 million, after deducting the placement agent's fee and estimated offering expenses payable by the Company.

Net cash used in operating activities was $11.9 million and $14.1 million for the years ended December 31, 2010 and 2009, respectively. The decrease in net cash used in operating activities for the year ended December 31, 2010, compared with the prior year, was primarily the result of the $3.0 million received from VGX Int'l in connection with the March 2010 Collaboration and License Agreement as well as a decrease in legal and other expenses paid associated with the Merger and other corporate matters offset by increased spending on clinical, engineering and other research and development activities to support our programs.

Prior to July 1, 2010 we held Auction Rate Securities ("ARS"), which were municipal debt obligations with an underlying long-term maturity. Due to conditions in the global credit markets these securities were not liquid as of December 31, 2009. In December 2008, we, via our wholly-owned subsidiary Genetronics, which held the ARS, accepted an offer of ARS Rights from UBS which permitted us to require UBS to purchase our ARS at par value at any time during the period of June 30, 2010 through July 2, 2012. On July 1, 2010, we exercised the ARS Rights, and we sold the remaining ARS at par value.

In conjunction with the acceptance of the ARS Rights, we also amended our existing loan agreement with UBS Bank USA, increasing the existing credit line up to $12.1 million, with the ARS pledged as collateral. We fully drew down on the line of credit in December 2008. On July 1, 2010, upon exercise of our ARS Rights, the line of credit was paid in full.

We initiated an At-The-Market Equity Distribution Agreement in August 2010 and raised $2.3 million net of expenses, as of December 31, 2010. In January 2011 we raised an additional $1.4 million, net of expenses, through this program.

As of December 31, 2010, we had an accumulated deficit of $194.8 million. We have operated at a loss since 1994, and we expect to continue to operate at a loss for some time. The amount of the accumulated deficit will continue to increase, as it will be expensive to continue research and development efforts. If these activities are successful and if we receive approval from the FDA to market our DNA vaccine products, then even more funding will be required to market and sell the approved vaccine products and equipment. We cannot predict the outcome of the above matters at this time. We are evaluating potential collaborations as an additional way to fund operations. We will continue to rely on outside sources of financing to meet our capital needs beyond 2013.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenue, expenses, and results of operations, liquidity, capital expenditures or capital resources.

Contractual Obligations

As of December 31, 2010, we did not have any other material long-term debt or other known contractual obligations, except for the operating leases for our facilities, which expire in 2013 through 2017, and operating leases for copiers, which expire in 2011.

We are contractually obligated to make the following operating lease payments as of December 31, 2010:

	Total	Less than 1 year	1 – 3 years	3 – 5 years	More than 5 years
Operating lease obligations	$1,344,596	$325,368	$701,423	$271,637	$ 46,168

In the normal course of business, we are a party to a variety of agreements pursuant to which we may be obligated to indemnify the other party. It is not possible to predict the maximum potential amount of future payments under these types of agreements due to the conditional nature of our obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by us under these types of agreements have not had a material effect on our business, consolidated results of operations or financial condition.

ITEM 7A. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Market risk represents the risk of loss that may impact our consolidated financial position, results of operations or cash flows due to adverse changes in financial and commodity market prices and rates. We are exposed to market risk primarily in the area of changes in United States interest rates and conditions in the credit markets, and the recent fluctuations in interest rates and availability of funding in the credit markets primarily impact the performance of our investments. We do not have any material foreign currency or other derivative financial instruments. Under our current policies, we do not use interest rate derivative instruments to manage exposure to interest rate changes. We attempt to increase the safety and preservation of our invested principal funds by limiting default risk, market risk and reinvestment risk. We mitigate default risk by investing in investment grade securities.

Fair Value measurements

We account for our common stock warrants pursuant to the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the registered warrants require the issuance of registered securities upon exercise and do not sufficiently preclude an implied right to net cash settlement. We classify registered warrants on the consolidated balance sheet as a current liability that is revalued at each balance sheet date subsequent to the initial issuance.

As of December 31, 2010, we no longer hold trading securities. Previously, we classified all of our investment securities consisting of ARS issued primarily by municipalities as trading securities and reported them on the consolidated balance sheet at market value.

In December 2008, we, via our wholly-owned subsidiary Genetronics, which held the ARS, accepted an offer of ARS Rights from our investment advisor, UBS Financial Services, Inc., a subsidiary of UBS AG, or UBS. The ARS Rights permitted us to require UBS to purchase our ARS at par value at any time during the period of June 30, 2010 through July 2, 2012. On July 1, 2010 we exercised the ARS Rights, and we sold the remaining ARS held by us at par value.

Foreign Currency Risk

We have operated primarily in the United States and most transactions during the year ended December 31, 2010, have been made in United States dollars. Accordingly, we have not had any material exposure to foreign currency rate fluctuations, with the exception of the valuation of our equity investment in VGX Int'l which is denominated in South Korean Won. We do not have any foreign currency hedging instruments in place.

Certain transactions related to us are denominated primarily in foreign currencies, including Euros, British Pounds, Canadian Dollars, South Korean Won and Singapore Dollars. As a result, our financial results could be affected by factors such as changes in foreign currency exchange rates or weak economic conditions in foreign markets where we conduct business, including the impact of the existing crisis in the global financial markets in such countries and the impact on both the United States dollar and the noted foreign currencies.

We do not use derivative financial instruments for speculative purposes. We do not engage in exchange rate hedging or hold or issue foreign exchange contracts for trading purposes. Currently, we do not expect the impact of fluctuations in the relative fair value of other currencies to be material in 2011.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by this Item 8 is incorporated by reference to our Consolidated Financial Statements and the Report of Independent Registered Public Accounting Firm beginning at page F-1 of this report.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of December 31, 2010, we carried out an evaluation, with the participation of our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures (as defined in

Rule 13a-15(e) under the Exchange Act). Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report in recording, processing, summarizing and reporting, on a timely basis, information required to be disclosed in reports that we file or submit under the Exchange Act and our disclosure controls and procedures were also effective to ensure that information we disclose in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

Internal Control Over Financial Reporting

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. Our internal control over financial reporting is a process designed under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with United States generally accepted accounting principles.

As of December 31, 2010, management, with the participation of the Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting based on the criteria for effective internal control over financial reporting established in "Internal Control—Integrated Framework," issued by the Committee of Sponsoring Organizations ("COSO") of the Treadway Commission. Based on the assessment, management determined that we maintained effective internal control over financial reporting as of December 31, 2010.

Changes in Internal Control over Financial Reporting

There have not been any changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fourth quarter of our fiscal year ended December 31, 2010, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Attestation Report of Independent Registered Public Accounting Firm

The independent registered public accounting firm that audited the consolidated financial statements that are included in this Annual Report on Form 10-K has issued an audit report on the effectiveness of our internal control over financial reporting as of December 31, 2010. The report appears below.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Inovio Pharmaceuticals, Inc.

We have audited Inovio Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2010, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Inovio Pharmaceuticals, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit 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 effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Inovio Pharmaceuticals, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Inovio Pharmaceuticals, Inc. as of December 31, 2010 and 2009, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2010 and our report dated March 16, 2011 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

San Diego, California
March 16, 2011

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item 10 is hereby incorporated by reference from our definitive proxy statement, to be filed pursuant to Regulation 14A within 120 days after the end of our 2010 fiscal year.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item 11 is hereby incorporated by reference from our definitive proxy statement, to be filed pursuant to Regulation 14A within 120 days after the end of our 2010 fiscal year.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item 12 is hereby incorporated by reference from our definitive proxy statement, to be filed pursuant to Regulation 14A within 120 days after the end of our 2010 fiscal year.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Director independence and other information required by this Item 13 is hereby incorporated by reference from our definitive proxy statement, to be filed pursuant to Regulation 14A within 120 days after the end of our 2010 fiscal year.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item 14 is hereby incorporated by reference from our definitive proxy statement, to be filed pursuant to Regulation 14A within 120 days after the end of our 2010 fiscal year.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

1. Financial Statements

Consolidated financial statements required to be filed hereunder are indexed on Page F-2 hereof.

2. Financial Statement Schedules

Schedules not listed herein have been omitted because the information required to be set forth therein is not applicable or is included in the Financial Statements or notes thereto.

3. Exhibits

The following exhibits are filed as part of this annual report on Form 10-K:

Exhibit Number	Description of Document
3.1(a)	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the registrant's Registration Statement on Form S-3 (File No. 333-108752) filed on September 12, 2003).
(b)	Certificate of Amendment to Amended and Restated Certificate of Incorporation as filed with the Delaware Secretary of State on September 10, 2004 (incorporated by reference to Exhibit 3.1 of the registrant's Form 8-K current report filed September 16, 2004).
(c)	Certificate of Amendment to the Amended and Restated Certificate of Incorporation as filed with the Delaware Secretary of State on March 31, 2005 (incorporated by reference to Exhibit 3.1 of the registrant's Form 8-K current report filed on April 4, 2005).
(d)	Certificate of Amendment to the Amended and Restated Certificate of Incorporation as filed with the Delaware Secretary of State on May 14, 2010 (incorporated by reference to Exhibit 3.1 of the registrant's on Form 10-Q quarterly report for the quarter ended March 31, 2010 filed on May 17, 2010).
3.2(a)	Certificate of Designations, Rights and Preferences of Series C Convertible Preferred Stock of registrant (incorporated by reference to Exhibit 3.3 of the registrant's Registration Statement on Form S-3 filed on June 21, 2004).
(b)	Certificate of Decrease of Shares of Series C Cumulative Convertible Preferred Stock of registrant (incorporated by reference to Exhibit 3.4 of the registrant's Registration Statement on Form S-3 filed on June 21, 2004).
3.3	Amended and Restated Bylaws of Inovio Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.6 to the registrant's Form 8-K current report filed on August 18, 2009).
4.12	Form of Common Stock Purchase Warrant dated as of September 15, 2006 by and between the registrant and each of the purchasers listed on Schedule 1 to the Securities Purchase Agreement (Exhibit 10.23 herein) (incorporated by reference to Exhibit 4.3 of the registrant's Form 8-K current report filed on September 20, 2006).
4.13	Registration Rights Agreement dated as of September 15, 2006 by and among registrant and certain investors indicated on a schedule thereto (incorporated by reference to Exhibit 10.5 of the registrant's Form 10-Q quarterly report for the quarter ended September 30, 2010 filed on November 9, 2006).

Exhibit Number	Description of Document
4.14	Form of Common Stock Purchase Warrant to be used by and between the registrant and each of the purchasers listed on Schedule 1 to the Securities Purchase and Exchange Agreement (Exhibit 10.25 herein) (incorporated by reference to Exhibit 4.24 of the registrant's Form 10-K annual report for the year ended December 31, 2006 filed on March 16, 2007).
4.16+	Form of Restricted Stock Award Grants under the 2007 Omnibus Stock Incentive Plan (incorporated by reference to Exhibit 4.3 to the registrant's Registration Statement on Form S-8 filed on May 14, 2007).
4.17+	Form of Incentive and Non-Qualified Stock Option Grants under the 2007 Omnibus Stock Incentive Plan (incorporated by reference to Exhibit 4.4 to the registrant's Registration Statement on Form S-8 filed with on May 14, 2007).
4.18	Form of Common Stock Warrant issued by Inovio Pharmaceuticals, Inc. (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K current report filed on January 24, 2011).
10.1	Lease Agreement by and between the registrant and 1787 Sentry Park West LLC dated December 10, 2009 (incorporated by reference to Exhibit 10.1 of the registrant's Form 10-K annual report for the year ended December 31, 2009 filed on March 26, 2010).
10.2†	License Agreement dated September 20, 2000 by and between the registrant and the University of South Florida Research Foundation, Inc. (incorporated by reference to Exhibit 10.5 of the registrant's Form 10-Q quarterly report for the quarter ended September 30, 2000 filed on November 9, 2000).
10.3†	Non-Exclusive License and Research Collaboration Agreement dated as of May 21, 2004 by and among the registrant and Merck & Co., Inc. and Genetronics, Inc., a subsidiary of the registrant (incorporated by reference to Exhibit 10.1 to the registrant's Form 10-Q quarterly report for the quarter ended June 30, 2004 filed on August 13, 2004).
10.4	Form of Warrant to Purchase Common Stock (incorporated by reference to Exhibit 4.2 of the registrant's Form 8-K current report filed on August 6, 2007).
10.5+	Employment Agreement dated as of December 27, 2010 between Inovio Pharmaceuticals, Inc. and Peter Kies (filed herewith).
10.6	Voting Trust Agreement dated June 1, 2009 by and among Inovio Pharmaceuticals, Inc., the stockholders listed on Schedule I thereto, Simon Benito, Tee Khiang Ng and Dr. Morton Collins (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K current report filed on June 1, 2009).
10.8	Securities Purchase Agreement dated July 29, 2009 by and among Inovio Pharmaceuticals, Inc. and the purchasers identified on the signature pages thereto (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K current report filed on July 30, 2009).
10.9	Form of Indemnification Agreement for Directors and Officers of Inovio Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.1 to the registrant's Form 10-Q quarterly report for the quarterly period ended June 30, 2009, filed on August 19, 2009).
10.10+	Amended and Restated Employment Agreement dated October 6, 2009 by and between Inovio Pharmaceuticals, Inc. and Dr. Avtar Dhillon (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K current report filed on October 6, 2009).
10.11#	Amended and Restated 2007 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.2 to the registrant's Form 10-Q quarterly report for the quarterly period ended September 30, 2009, filed on November 13, 2009).

Exhibit Number	Description of Document
10.12#	Amended and Restated 2007 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.1 to the registrant's Form 10-Q quarterly report for the quarterly period ended March 31, 2010, filed on May 17, 2010).
10.13†	License Agreement dated June 26, 2000 by and among Baylor College of Medicine, Valentis, Inc. and Applied Veterinary Systems, Inc., as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.14†	License Agreement dated January 25, 2001 by and between Baylor College of Medicine and Applied Veterinary Systems, Inc. as assigned to VGX Pharmaceuticals, Inc., as amended by First Amendment dated April 17, 2002, Second Amendment dated May 29, 2002, Third amendment dated March 5, 2002, Fourth Amendment dated April 14, 2004 and Fifth Amendment dated February 15, 2007 (incorporated by reference to Exhibit 10.27 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.15†	License Agreement dated November 5, 2001 by and between The Trustees of the University of Pennsylvania and VGX Pharmaceuticals, Inc., as amended by First Amendment dated August 15, 2005 (incorporated by reference to Exhibit 10.29 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.16†	R&D Alliance Agreement dated December 19, 2005 by and between Ganial Immunotherapeutics, Inc. and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.31 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.17†	Asset Purchase Agreement dated February 21, 2007 by and among Ronald O. Bergan, Mary Alice Bergan, and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.32 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.18†	License Agreement dated May 9, 2007 by and between Baylor University and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.34 as filed with the registrant's registration statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.20†	Non-Exclusive License Agreement dated September 1, 2007 by and between VGX Animal Health, Inc. and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.36 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.21†	License Agreement dated September 1, 2007 by and between VGX Animal Health, Inc. and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.37 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.22	Assignment of Contingent Payments Agreement dated October 20, 2007 by and among Ronald O. Bergan, Mary Alice Bergan, VGX Animal Health, Inc., and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.38 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.23†	R&D Collaboration and License Agreement dated December 18, 2006 by and between VGX International, Inc. and VGX Pharmaceuticals, Inc., as amended by First Amendment dated October 31, 2007 and as amended by Second Amendment dated August 4, 2008 (incorporated by reference to Exhibit 10.39 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.24†	Sales and Marketing Agreement dated February 28, 2008 by and between VGX International and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.42 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).

Exhibit Number	Description of Document
10.25+	Employment Agreement dated March 31, 2008 by and between J. Joseph Kim, Ph.D. and VGX Pharmaceuticals, Inc., as amended by First Amendment of Employment Agreement dated March 31, 2008 (incorporated by reference to Exhibit 10.43 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.26†	CELLECTRA ® Device License Agreement dated April 16, 2008 by and between VGX International and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.44 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.27	Asset Purchase Agreement dated June 10, 2008 by and among VGXI, Inc. and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.48 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.29†	Patent License Agreement dated April 27, 2007 by and between The Trustees of the University of Pennsylvania and VGX Pharmaceuticals, Inc., as amended by First Amendment dated June 12, 2008 (incorporated by reference to Exhibit 10.50 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.30+	2001 Equity Compensation Plan for VGX Pharmaceuticals, Inc., as amended (incorporated by reference to Exhibit 10.62 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.31+	2007 Equity Compensation Plan for VGX Animal Health, Inc. (incorporated by reference to Exhibit 10.63 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.32	Memorandum of NIH Research Grant Agreement by and between National Institute of Allergy and Infectious Diseases and VGX Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.66 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.33	Form of Warrant to Purchase Common Stock issued by VGX Pharmaceuticals, Inc. since 2003 (incorporated by reference to Exhibit 10.67 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.34	Form of Warrant Purchase Agreement for Warrants to Purchase Common Stock issued by VGX Pharmaceuticals, Inc. since 2003 (incorporated by reference to Exhibit 10.68 as filed with the registrant's Registration Statement on Form S-4 (File No. 333-156035) on April 27, 2009).
10.35†	License and Collaboration Agreement dated March 24, 2010 between Inovio Pharmaceuticals, inc. and VGX International, Inc. (incorporated by reference to Exhibit 10.2 as filed with the registrant's Form 10-Q quarterly report for the quarter ended March 31, 2010 filed on May 17, 2010).
10.36	Equity Distribution Agreement dated August 27, 2010 between Inovio Pharmaceuticals, Inc. and Roth Capital Partners, LLC (incorporated by reference to Exhibit 1.1 as filed with the registrant's Form 8-K current report filed on August 27, 2010).
10.37	Placement Agent Agreement dated January 24, 2011 between Inovio Pharmaceuticals, inc. and Roth Capital Partners, LLC (incorporated by reference to Exhibit 1.1 as filed with the registrant's Form 8-K current report filed on January 24, 2011).
21.1	Subsidiaries of the registrant.
23.1	Consent of Independent Registered Public Accounting Firm.
24.1	Power of Attorney (included on signature page).

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Exhibit Number	Description of Document
31.1	Certification of the Chief Executive Officer pursuant Securities Exchange Act Rule 13a-14(a).
31.2	Certification of the Chief Financial Officer pursuant Securities Exchange Act Rule 13a-14(a).
32.1	Certification pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

The registrant hereby agrees to furnish the staff, on a confidential basis, a supplemental copy of any omitted schedule upon the staff's request.

\+ Designates management contract, compensatory plan or arrangement.

† We have applied with the Secretary of the Securities and Exchange Commission for confidential treatment of certain information pursuant to Rule 24b-2 of the Securities Exchange Act of 1934. We have filed separately with our application a copy of the exhibit including all confidential portions, which may be made available for public inspection pending the Securities and Exchange Commission's review of the application in accordance with Rule 24b-2.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on March 16, 2011.

Inovio Pharmaceuticals, Inc.

By: /s/ J. J OSEPH K IM
J. Joseph Kim
President, Chief Executive Officer and Director

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints J. Joseph Kim and Peter Kies, and each of them severally, his or her true and lawful attorney-in-fact with power of substitution and resubstitution to sign in his or her name, place and stead, in any and all capacities, to do any and all things and execute any and all instruments that such attorney may deem necessary or advisable under the Securities Exchange Act of 1934 and any rules, regulations and requirements of the United States Securities and Exchange Commission in connection with the Annual Report on Form 10-K and any and all amendments hereto, as fully for all intents and purposes as he or she might or could do in person, and hereby ratifies and confirms all said attorneys-in-fact and agents, each acting alone, and his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ J. J OSEPH K IM **J. Joseph Kim**	President, Chief Executive Officer and Director (Principal Executive Officer)	March 16, 2011
/s/ A VTAR D HILLON **Avtar Dhillon**	Executive Chairman	March 16, 2011
/s/ P ETER K IES **Peter Kies**	Chief Financial Officer (Principal Accounting Officer and Principal Financial Officer)	March 16, 2011
/s/ S IMON X. B ENITO **Simon X. Benito**	Director	March 16, 2011
/s/ M ORTON C OLLINS **Morton Collins**	Director	March 16, 2011
/s/ D AVID W ILLIAMS **David Williams**	Director	March 16, 2011
/s/ K EITH W ELLS **Keith Wells**	Director	March 16, 2011

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INOVIO PHARMACEUTICALS, INC.

Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Inovio Pharmaceuticals, Inc.

We have audited the accompanying consolidated balance sheets of Inovio Pharmaceuticals, Inc. as of December 31, 2010 and 2009, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2010. 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes 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 financial statements referred to above present fairly, in all material respects, the consolidated financial position of Inovio Pharmaceuticals, Inc. at December 31, 2010 and 2009, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2010, in conformity with United States generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Inovio Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2010, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 16, 2011 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

San Diego, California
March 16, 2011

Inovio Pharmaceuticals, Inc.

CONSOLIDATED BALANCE SHEETS

	December 31, 2010	December 31, 2009
ASSETS		
Current assets:		
Cash and cash equivalents	$ 19,998,489	$ 30,296,215
Short-term investments-certificates of deposit	1,846,271	—
Short-term investments-auction rate securities	—	10,397,530
Auction rate security rights	—	3,145,156
Accounts receivable	32,887	259,207
Accounts receivable from affiliated entity	72,149	58,853
Prepaid expenses and other current assets	273,975	409,845
Prepaid expenses and other current assets from affiliated entity	653,436	—
Total current assets	22,877,207	44,566,806
Fixed assets, net	276,795	343,457
Intangible assets, net	11,180,002	12,968,934
Goodwill	10,113,371	10,113,371
Investment in affiliated entity	11,360,888	12,330,802
Other assets	259,128	305,547
Total assets	$ 56,067,391	$ 80,628,917
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$ 3,410,610	$ 3,445,750
Accounts payable and accrued expenses due to affiliated entity	1,680,947	445,091
Accrued clinical trial expenses	178,328	299,261
Line of credit	—	12,114,760
Common stock warrants	370,926	2,774,850
Deferred revenue	420,897	270,326
Deferred revenue from affiliated entity	375,000	—
Total current liabilities	6,436,708	19,350,038
Deferred revenue, net of current portion	72,780	82,594
Deferred revenue from affiliated entity, net of current portion	2,336,694	—
Deferred rent, net of current portion	67,112	11,338
Deferred tax liabilities	53,186	—
Total liabilities	8,966,480	19,443,970
Commitments and contingencies		
Inovio Pharmaceuticals, Inc. stockholders' equity:		
Preferred stock—par value $0.001; Authorized shares: 10,000,000, issued and outstanding: 26 and 26 at December 31, 2010 and December 31, 2009, respectively	—	—
Common stock—par value $0.001; Authorized shares: 300,000,000, issued and outstanding: 105,038,192 at December 31, 2010 and 102,746,058 at December 31, 2009	105,038	102,746
Additional paid-in capital	241,233,334	237,577,970
Accumulated deficit	(194,838,229)	(177,224,433)
Accumulated other comprehensive income	2,850	105,796
Total Inovio Pharmaceuticals, Inc. stockholders' equity	46,502,993	60,562,079
Non-controlling interest	597,918	622,868
Total stockholders' equity	47,100,911	61,184,947
Total liabilities and stockholders' equity	$ 56,067,391	$ 80,628,917

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

Inovio Pharmaceuticals, Inc.

CONSOLIDATED STATEMENTS OF OPERATIONS

	For the Years ended December 31,		
	2010	2009	2008
Revenues:			
License fee and milestone revenue	$ 213,916	$ 4,929,309	$ 791,401
License fee and milestone revenue from affiliated entity	313,306	18,222	—
Revenue under collaborative research and development arrangements	—	125,996	1,077,967
Grants and miscellaneous revenue	5,549,583	4,005,719	228,264
Miscellaneous revenue from affiliated entity	67,900	40,865	—
Total revenues	6,144,705	9,120,111	2,097,632
Operating expenses:			
Research and development	13,256,606	9,408,457	5,750,494
General and administrative	12,108,261	13,669,409	10,005,602
Total operating expenses	25,364,867	23,077,866	15,756,096
Loss from operations	(19,220,162)	(13,957,755)	(13,658,464)
Other income (expense):			
Other income/(expense), net	2,476,816	(1,258,848)	49,006
Interest income, net	74,514	2,293	643,836
Loss from investment in affiliated entity	(969,914)	(9,244,614)	—
Net loss	(17,638,746)	(24,458,924)	(12,965,622)
Net loss attributable to non-controlling interest	24,950	47,439	—
Net loss attributable to Inovio Pharmaceuticals, Inc.	$ (17,613,796)	$(24,411,485)	$(12,965,622)
Loss per common share—basic and diluted:			
Net loss per share attributable to Inovio Pharmaceuticals, Inc. stockholders	$ (0.17)	$ (0.33)	$ (0.30)
Weighted average number of common shares outstanding—basic and diluted	103,201,880	74,714,138	43,914,004

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

Inovio Pharmaceuticals, Inc.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Preferred stock		Common stock					Accumulated other		
	Number of shares	Amount	Number of shares	Amount	Additional paid-in capital	Receivables from stockholders	Accumulated deficit	comprehensive (loss) income	Non-controlling interest	Total stockholders' equity
Balance at December 31, 2007	113,382	$ 113	43,814,739	$ 43,815	$170,730,621	$ (50,000)	$(139,847,326)	$ 157,531	—	$ 31,034,754
Exercise of stock options for cash	—	—	1,250	1	1,087	—	—	—	—	1,088
Conversions of preferred stock to common stock	(113,311)	(113)	113,311	113	—	—	—	—	—	—
Reserve for stockholder note receivable	—	—	—	—	—	50,000	—	—	—	50,000
Issuance of common stock for consulting services	—	—	56,250	55	46,520	—	—	—	—	46,575
Stock-based compensation	—	—	37,500	38	1,090,686	—	—	—	—	1,090,724
Comprehensive loss:										
Net loss attributable to common stockholders	—	—	—	—	—	—	(12,965,622)	—	—	(12,965,622)
Unrealized loss on investments	—	—	—	—	—	—	—	(9,945)	—	(9,945)
Foreign currency translation loss	—	—	—	—	—	—	—	(141,427)	—	(141,427)
Total comprehensive loss	—	—	—	—	—	—	—	—	—	(13,116,994)
Balance at December 31, 2008	71	—	44,023,050	$ 44,022	$171,868,914	—	$(152,812,948)	$ 6,159	—	$ 19,106,147
Issuance of common stock to VGX Pharmaceutical Shareholders	—	—	41,492,757	41,493	26,098,943	—	—	—	—	26,140,436
Stock options and warrants assumed in connection with Merger	—	—	—	—	5,137,038	—	—	—	—	5,137,038
Non-controlling interest assumed in connection with merger	—	—	—	—	—	—	—	—	670,307	670,307
Issuance of common stock and warrants for cash, net of financing costs of $1.6 million	—	—	11,111,110	11,111	28,395,245	—	—	—	—	28,406,356
Fair value of common stock warrants issued in connection with equity financing	—	—	—	—	(1,263,384)	—	—	—	—	(1,263,384)
Exercise of stock options for cash	—	—	794,043	795	357,945	—	—	—	—	358,740
Cashless exercise of stock options	—	—	519,491	519	(519)	—	—	—	—	—
Conversions of preferred stock to common stock	(45)	—	66,176	66	(66)	—	—	—	—	—
Conversion of convertible debt to common stock	—	—	4,600,681	4,601	4,826,114	—	—	—	—	4,830,715
Stock-based compensation	—	—	138,750	139	2,157,740	—	—	—	—	2,157,879
Comprehensive loss:										
Net loss attributable to common stockholders	—	—	—	—	—	—	(24,411,485)	—	(47,439)	(24,458,924)
Foreign currency translation gain	—	—	—	—	—	—	—	99,637	—	99,637
Total comprehensive loss	—	—	—	—	—	—	—	—	—	(24,359,287)
Balance at December 31, 2009	26	—	102,746,058	$102,746	$237,577,970	—	$(177,224,433)	$ 105,796	$ 622,868	$ 61,184,947
Issuance of common stock for cash, net of financing costs of $71,839	—	—	1,994,672	1,995	2,312,129	—	—	—	—	2,314,124
Exercise of stock options for cash	—	—	297,462	297	168,368	—	—	—	—	168,665
Stock-based compensation	—	—	—	—	1,174,867	—	—	—	—	1,174,867
Comprehensive loss:										
Net loss attributable to common stockholders	—	—	—	—	—	—	(17,613,796)	—	(24,950)	(17,638,746)
Foreign currency translation loss	—	—	—	—	—	—	—	(102,946)	—	(102,946)
Total comprehensive loss	—	—	—	—	—	—	—	—	—	(17,741,692)
Balance at December 31, 2010	26	—	105,038,192	$105,038	$241,233,334	—	$(194,838,229)	$ 2,850	$ 597,918	$ 47,100,911

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

Inovio Pharmaceuticals, Inc.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the Years ended December 31,		
	2010	2009	2008
Cash flows from operating activities:			
Net loss	$ (17,638,746)	$ (24,458,924)	$ (12,965,622)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	194,629	237,222	195,285
Amortization of intangible assets	1,913,912	1,439,756	797,742
Change in value of common stock warrants	(2,403,924)	1,286,884	(142,489)
Change in value of short-term investments—auction rate securities	(3,152,470)	—	—
Change in value of auction rate security rights	3,145,156	(1,228,059)	—
Gain on long-term investments	—	1,136,338	—
Unrealized loss on trading securities	—	—	4,380,529
Recognition of auction rate securities rights	—	—	(4,281,494)
Stock-based compensation	1,174,867	2,157,879	1,090,724
Compensation for services paid in common stock	—	—	46,575
Interest converted into common stock	—	430,715	—
Interest expense accrued on line of credit	61,152	166,178	—
Interest income accrued on short-term investments-certificates of deposit	(6,271)	—	—
Reserve for inventory purchased from related parties	—	177,969	—
Recognition/(amortization) of deferred tax liabilities	53,186	(887,250)	(63,000)
Deferred rent	55,774	(131,020)	(61,946)
Impairment of long term investments	25,000	—	114,750
Loss on disposal of fixed assets	21,182	26,404	9,792
Loss from investment in affiliated entity	969,914	9,244,614	—
Gain from long-term investment in affiliated entity	—	(5,502)	—
Accretion of discount on available-for-sale securities	—	—	(60,345)
Changes in operating assets and liabilities:			
Accounts receivable	226,320	288,155	464,825
Accounts receivable from affiliated entity	(13,296)	1,103,925	—
Prepaid expenses and other current assets	35,890	242,325	19,518
Prepaid expenses and other current assets from affiliated entity	(553,456)	—	—
Other assets	21,419	(18,400)	—
Accounts payable and accrued expenses	(156,073)	(1,043,838)	(583,841)
Accounts payable and accrued expenses due to affiliated entity	1,235,856	428,353	—
Deferred revenue	140,757	(4,673,916)	(87,521)
Deferred revenue from affiliated entity	2,711,694	—	—
Net cash used in operating activities	(11,937,528)	(14,080,192)	(11,126,518)
Cash flows from investing activities:			
Purchases of short-term investments-certificates of deposit	(8,000,000)	—	—
Sale of short-term investments-certificates of deposit	6,160,000	—	—
Sale of short-term investments-auction rate securities	13,550,000	—	—
Purchases of long-term investments	—	—	(4,500,000)
Maturities of long-term investments	—	—	8,000,000
Purchases of capital assets	(181,649)	(48,368)	(121,946)
Sale of capital assets	32,500	—	—
Net cash provided by acquisition	—	1,611,280	—
Acquired intangible assets and other assets	(124,980)	(116,567)	(461,852)
Net cash provided by investing activities	11,435,871	1,446,345	2,916,202
Cash flows from financing activities:			
Proceeds from issuance of common stock, net of issuance costs	2,314,124	28,406,356	—
Proceeds from stock option exercises	168,665	358,740	1,088
Proceeds from line of credit	—	—	12,220,494
Repayment of line of credit	(12,175,912)	(160,841)	(111,071)
Reserve for stockholder note receivable	—	—	50,000
Net cash (used in) provided by financing activities	(9,693,123)	28,604,255	12,160,511
Effect of exchange rate changes on cash and cash equivalents	(102,946)	210,526	(85,843)
(Decrease) Increase in cash and cash equivalents	(10,297,726)	16,180,934	3,864,352
Cash and cash equivalents, beginning of period	30,296,215	14,115,281	10,250,929
Cash and cash equivalents, end of period	$ 19,998,489	$ 30,296,215	$ 14,115,281

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

INOVIO PHARMACEUTICALS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. The Company

Inovio Pharmaceuticals, Inc. (the "Company" or "Inovio") is engaged in the discovery, development, and delivery of a new generation of vaccines, called DNA vaccines, focused on cancers and infectious diseases. The Company's SynCon ™ technology enables the design of "universal" DNA-based vaccines capable of providing cross-protection against new, unmatched strains of pathogens such as influenza. The Company's electroporation DNA delivery technology uses brief, controlled electrical pulses to increase cellular DNA vaccine uptake. Initial human data has shown this method can safely and significantly increase gene expression and immune responses. The Company's clinical programs include human papillomavirus ("HPV")/cervical cancer (therapeutic), avian influenza (preventative), hepatitis C virus ("HCV") and human immunodeficiency virus ("HIV") vaccines. The Company is advancing preclinical research for a universal seasonal/pandemic influenza vaccine and other product candidates. The Company's partners and collaborators include University of Pennsylvania, Drexel University, National Microbiology Laboratory of the Public Health Agency of Canada, Program for Appropriate Technology in Health/Malaria Vaccine Initiative ("PATH" or "MVI"), National Institute of Allergy and Infectious Diseases ("NIAID"), Merck, ChronTech, University of Southampton, United States Military HIV Research Program ("USMHRP"), U.S. Army Medical Research Institute of Infectious Diseases ("USAMRIID") and HIV Vaccines Trial Network ("HVTN").

On May 14, 2010, the Company amended its Certificate of Incorporation to change its name from "Inovio Biomedical Corporation" to "Inovio Pharmaceuticals, Inc."

2. VGX Pharmaceuticals Business Acquisition

On June 1, 2009 (the "Acquisition Date") the Company completed the acquisition of VGX Pharmaceuticals, Inc. ("VGX"), a privately-held company, pursuant to the terms of an Amended and Restated Agreement and Plan of Merger dated December 5, 2008, as further amended on March 31, 2009 (the "Merger Agreement") by and among Inovio, Inovio's wholly-owned subsidiary Inovio Acquisition, LLC and VGX (the "Merger").

Upon the closing of the Merger, based on an exchange ratio of 0.9812 (the "Merger Exchange Ratio"), and on terms and conditions as set forth in the Merger Agreement,

- all of the issued and outstanding shares of common stock of VGX were canceled and converted into the right to receive shares of common stock of Inovio,
- all outstanding options to purchase shares of VGX common stock became exercisable for shares of Inovio's common stock,
- all outstanding warrants to purchase shares of VGX common stock became exercisable for shares of Inovio's common stock, and
- all outstanding convertible debt of VGX became debt convertible into Inovio's common stock on existing terms.

As of the Acquisition Date, an aggregate of 41,492,757 shares of Inovio's common stock were issued to the former stockholders of VGX, and an additional 18,794,187 shares of Inovio's common stock were reserved for issuance upon exercise of the assumed options and warrants and conversion of the principal of and maximum interest payable on the VGX convertible debt. Immediately following the Acquisition Date the continuing holders of Inovio securities owned approximately 51.59% of Inovio's issued and outstanding common stock and the former holders of VGX securities owned approximately 48.41% of Inovio's issued and outstanding common stock.

Upon the closing of the Merger, Inovio Acquisition, LLC succeeded to all of VGX's business, properties and assets and assumed its obligations (other than the outstanding options and warrants to purchase shares of VGX common stock that became exercisable to purchase shares of Inovio common stock), changed its name to VGX Pharmaceuticals, LLC, and remains a wholly-owned subsidiary of the Company, utilizing a single, integrated management team with Inovio.

Prior to the date of the Merger Agreement, Inovio's sole relationship with VGX was as a party to a licensing agreement with VGX, entered into in the ordinary course of business, and as a holder of 25,000 shares of VGX common stock acquired in relation to such agreement. The shares of VGX common stock held by Inovio were cancelled upon closing of the Merger.

After a review of relevant factors and in accordance with the guidance regarding business combinations, Inovio was determined to be the accounting acquirer. The Merger was accounted for using the purchase method of accounting for business combinations under U.S. GAAP. Accordingly, the historical consolidated financial statements of Inovio were carried forward at their historical cost and the purchase price allocated to VGX's identifiable assets and liabilities was based on their estimated fair values at the Acquisition Date.

The final determination of the purchase price allocation was based on the fair values of major classes of assets acquired, including identifiable intangibles and the fair value of liabilities assumed as of the Acquisition Date. The excess purchase price of the acquired entity over the fair value of assets and liabilities was recognized by the Company as goodwill on the accompanying consolidated balance sheet.

As a result of the Merger, Inovio acquired VGX's developed technology, which consists of VGX's CELLECTRA ® technology and GHRH technology.

The purchase price allocation for acquisitions requires extensive use of accounting estimates and judgments to allocate the purchase price to the identifiable tangible and intangible assets acquired, including in-process research and development, and liabilities assumed based on their respective fair values. Additionally, the Company must determine whether an acquired entity is considered to be a business or a set of net assets, because a portion of the purchase price can only be allocated to goodwill in a business combination.

Management estimated the fair value of the VGX developed technology using reasonable assumptions based on historical experience. The valuation methodology used to estimate the value of the technologies was the excess earnings method. This method reflects the present value of the operating cash flows generated by the technologies after taking into account the cost to realize the revenue, and an appropriate discount rate to reflect the time value and risk associated with the assets. First, yearly revenues for each technology were forecasted for a projected period of time of 10 years. Related cost of sales and operating expenses were then deducted from the revenue stream. Next, in order to value the technology, the value and required rate of return for other assets that contribute to the generation of the revenue earned by that particular technology asset were determined. The required returns on these other assets (the other asset classes identified were: net working capital, fixed assets, and assembled workforce) were "charged to" (or rather deducted from) the future net operating income to determine the returns specifically earned by the technology. Then, a discount rate was applied that considered the reasonable expectation of the risk profile of the proprietary technology in order to bring the future income to a present value. In the case of CELLECTRA ® technology, a discount rate of 45% was used for the core technology and 60% for the milestone and royalty; for the GHRH technology, a 45% discount rate was utilized.

There was no purchase price amount allocated to acquired in-process research and development.

The total purchase price of the acquisition is estimated as follows:

Value of Inovio shares issued	$26,156,188
Value of vested warrants and options assumed	5,137,038
	$31,293,226

The fair value of the Inovio shares used in determining the purchase price was $0.63 per share based on the closing price of Inovio common stock on June 1, 2009.

The purchase price has been allocated to each major class of identifiable assets acquired and liabilities assumed based on their fair values as of June 1, 2009. The allocation to identifiable assets and liabilities is summarized below:

	Fair Value
Identifiable assets acquired	$25,012,941
Intangible assets (developed technology)	8,441,583
Goodwill	6,212,658
Assumed liabilities	(7,703,649)
Assumed noncontrolling interest	(670,307)
Total	$31,293,226

The excess of the purchase price over the fair value of net assets acquired resulted in goodwill of approximately $6.2 million.

The percentage of non-controlling ownership interest consists of 12% in VGX Animal Health (“VGX AH”) and 88% ownership by the Company. The estimated fair value utilized was based on the last round of financing by VGX AH in late 2007, in which that entity issued shares of its common stock to a third party. There had been no subsequent financing rounds. The Company updated the valuation model to reflect current assumptions and due to the fact that there had been no additional milestone events, such as additional marketing approval, significant licensing agreements, material adverse events, or large sales contracts that would have materially changed any of the key assumptions used in the last valuation of VGX AH.

The Company’s investment in an affiliated entity represents the Company’s ownership interest in VGX International, Inc. (“VGX Int’l”) and is measured at fair value. The fair market value of the Company’s interest in VGX Int’l was determined using the closing price of VGX Int’l’s shares of common stock as listed on the Korean Stock Exchange as of June 1, 2009.

The following unaudited pro forma financial information combines the results of operations of Inovio and VGX assuming the Merger was consummated on January 1, 2008. The pro forma results are not necessarily indicative of what would have occurred if the Merger had been in effect for the periods presented. In addition, they are not intended to be a projection of future results and do not reflect any synergies that might be achieved from combined operations.

	Year Ended December 31, 2010	Year Ended December 31, 2009	Year Ended December 31, 2008
Revenue	$ 6,144,705	$ 11,182,062	$ 5,213,204
Net loss attributable to common stockholders	$(17,557,879)	$(29,835,182)	$(28,274,069)
Net loss per common share	$ (0.17)	$ (0.32)	$ (0.33)

3. Summary of Significant Accounting Policies

Basis of Presentation

Inovio incurred a net loss from operations of $17.6 million for the year ended December 31, 2010. Inovio had working capital of $16.4 million and an accumulated deficit of $194.8 million as of December 31, 2010. The Company’s ability to continue its operations is dependent upon its ability to obtain additional capital in the future

and achieve profitable operations. The Company expects to continue to rely on outside sources of financing to meet its capital needs and the Company may never achieve positive cash flow. These consolidated financial statements do not include any adjustments to the specific amounts and classifications of assets and liabilities, which might be necessary should Inovio be unable to continue in business. Inovio's consolidated financial statements as of and for the year ended December 31, 2010 have been prepared on a going concern basis, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business for the foreseeable future. The Company has evaluated subsequent events after the balance sheet date through the date it issued these financial statements.

In January 2011, the Company entered into investor purchase agreements with investors relating to the issuance and sale of (a) 21,130,400 shares of common stock, and (b) warrants to purchase a total of 10,565,200 shares of common stock with an exercise price of $1.40 per share, for an aggregate purchase price of approximately $24.3 million. The shares of common stock and warrants were sold in units, consisting of one share of common stock and a warrant to purchase 0.50 of a share of common stock, at a purchase price of $1.15 per unit. The Company received net proceeds from the transaction of approximately $23.0 million, after deducting the placement agent's fee and estimated offering expenses payable by the Company.

Consolidation

The accompanying consolidated financial statements include the accounts of Inovio Pharmaceuticals, Inc. and its domestic and foreign subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Variable Interest Entities

In June 2009, the Financial Accounting Standards Board ("FASB") issued authoritative guidance that requires companies to perform a qualitative analysis to determine whether a variable interest in another entity represents a controlling financial interest in a variable interest entity. A controlling financial interest in a variable interest entity is characterized by having both the power to direct the most significant activities of the entity and the obligation to absorb losses or the right to receive benefits of the entity. This guidance also requires on-going reassessments of variable interests based on changes in facts and circumstances. This guidance became effective for fiscal years beginning after November 15, 2009. The Company adopted the provisions of the guidance in the first quarter of 2010 and determined that none of the entities with which the Company currently conducts business and collaborations are variable interest entities, except VGXI (a wholly-owned subsidiary of VGX Int'l). The Company determined that VGX Int'l is the primary beneficiary to consolidate VGXI.

Reorganization

In October 2010, the Company began liquidation of its inactive wholly-owned subsidiary Inovio Asia Pte. Ltd. ("IAPL"). The Company expects liquidation to be complete in the second quarter of 2011 and does not expect any impact on financial position.

In April 2009, the Company's Board of Directors implemented a reduction in force which impacted our Norwegian operations. In connection with this decision, operations previously performed in Norway ceased as of July 31, 2009, and are continuing in the United States. As of December 31, 2009, both of our wholly-owned Norwegian subsidiaries, Inovio AS and Inovio Tec AS, had been dissolved.

Foreign currencies

The Company translates the financial statements of its non-United States operations using the end-of-period exchange rates for assets and liabilities and the average exchange rates for each reporting period for results of

operations. Net gains and losses resulting from the translation of foreign financial statements and the effect of exchange rates on intercompany receivables and payables of a long-term investment nature are recorded as a separate component of stockholders' equity under the caption "Accumulated other comprehensive income". These adjustments will affect net income upon the sale or liquidation of the underlying investment. Through December 31, 2010 there have been no material net foreign currency exchange gains or losses.

Use of estimates

The preparation of consolidated financial statements in accordance with United States generally accepted accounting principles requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. Inovio bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making 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. On an ongoing basis, the Company reviews its estimates to ensure that these estimates appropriately reflect changes in the business or as new information becomes available.

Cash and cash equivalents

Cash equivalents are considered by the Company to be highly liquid investments purchased with original maturities of three months or less from the date of purchase and are stated at cost, which approximates market value. At December 31, 2010 and 2009 cash equivalents included $16.9 million and $24.1 million held in money market funds, respectively.

Accounts receivable

Accounts receivable are recorded at invoiced amounts and do not bear interest. Inovio performs ongoing credit evaluations of our customers' financial condition. Credit is extended to customers as deemed necessary and generally does not require collateral. Management believes that the risk of loss is significantly reduced due to the quality and financial position of our customers. No allowance for doubtful accounts was deemed necessary at December 31, 2010 and 2009.

Fixed assets

Property and equipment are stated at cost and depreciated using the straight-line method over the estimated useful life of the assets, generally three to five years. Leasehold improvements are amortized over the shorter of the remaining term of the related leases or the estimated economic useful lives of the improvements. Repairs and maintenance are expensed as incurred.

Long-lived assets

All long-lived assets are reviewed for impairment in value when changes in circumstances dictate, based upon undiscounted future operating cash flows, and appropriate losses are recognized and reflected in current earnings, to the extent the carrying amount of an asset exceeds its estimated fair value determined by the use of appraisals, discounted cash flow analyses or comparable fair values of similar assets. The Company has not recognized any losses on long-lived assets through December 31, 2010.

Valuation of Goodwill and Intangible Assets

Goodwill represents the excess of acquisition cost over the fair value of the net assets of acquired businesses. Intangible assets are amortized over their estimated useful lives ranging from 5 to 18 years. Acquired intangible assets are continuously being developed for the future economic viability contemplated at the time of acquisition. The Company is concurrently conducting Phase I and pre-clinical trials using the acquired intangibles, and has entered into certain significant licensing agreements for use of these acquired intangibles.

Historically the Company has recorded patents at cost and amortized these costs using the straight-line method over the expected useful lives of the patents or 17 years, whichever is less. Patent cost consists of the consideration paid for patents and related legal costs. Effective June 1, 2009, in connection with the acquisition of VGX, all new patent costs are being expensed as incurred. Patent cost currently capitalized will continue to be amortized over the expected life of the patent. The effect of this change was immaterial to prior periods. License costs are recorded based on the fair value of consideration paid and amortized using the straight-line method over the shorter of the expected useful life of the underlying patents or the term of the related license agreement. As of December 31, 2010, the Company's intangible assets resulting from the acquisition of VGX and Inovio AS, and additional intangibles including previously capitalized patent costs and license costs, net of accumulated amortization, totaled $11.2 million.

The determination of the value of such intangible assets requires management to make estimates and assumptions that affect the Company's consolidated financial statements. The Company assesses potential impairments to intangible assets when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset may not be recovered. The Company's judgments regarding the existence of impairment indicators and future cash flows related to intangible assets are based on operational performance of our acquired businesses, market conditions and other factors. If impairment is indicated, the Company will reduce the carrying value of the intangible asset to fair value. While current and historical operating and cash flow losses are potential indicators of impairment, the Company believes the future cash flows to be received from its intangible assets will exceed the intangible assets' carrying value, and accordingly, the Company has not recognized any impairment losses through December 31, 2010.

Goodwill and intangible assets with indefinite lives are not amortized but instead are measured for impairment annually, or when events indicate that impairment exists. The Company's accounting policy with respect to reviewing goodwill for impairment is a two step process. The first step of the impairment test compares the fair value of our reporting unit with its carrying value including allocated goodwill. If the carrying value of the Company's reporting unit exceeds its fair value, then the second step of the impairment test is performed to measure the impairment loss, if any. The Company tests goodwill for impairment at the entity level, which is considered our reporting unit. The Company's estimate of fair value is determined using both the Discounted Cash Flow method of the Income Approach and the Guideline Public Company method of the Market Approach. The Discounted Cash Flow method estimates future cash flows of our business for a certain discrete period and then discounts them to their present value. The Guideline Public Company method computes value indicators ("multiples") from the operating data of the selected publicly traded guideline companies. After these multiples were evaluated, appropriate value indicators were selected and applied to the operating statistics of the reporting unit to arrive at indications of value. Specifically, the Company relied upon the application of Total Invested Capital based valuation multiples for each guideline company. In applying the Income and Market Approaches, premiums and discounts were determined and applied to estimate the fair values of the reporting unit. To arrive at the indicated value of equity under each approach, the Company then assigned a relative weighting to the resulting values from each approach to determine whether the carrying value of the reporting unit exceeds its fair value, thus requiring step two of the impairment test.

The Company conducts the impairment test annually on November 30th for each fiscal year for which goodwill is evaluated for impairment. The Company is also aware of the requirement to evaluate goodwill for impairment at other times should circumstances arise. To date, the Company has concluded that the fair value of the reporting unit significantly exceeded the carrying value and therefore, step two of the impairment test has never been performed.

Although there are inherent uncertainties in this assessment process, the estimates and assumptions the Company is using are consistent with its internal planning. If these estimates or their related assumptions change in the future, the Company may be required to record an impairment charge on all or a portion of our goodwill and intangible assets. Furthermore, the Company cannot predict the occurrence of future impairment triggering events nor the impact such events might have on its reported asset values. Future events could cause the Company to

conclude that impairment indicators exist and that goodwill or other intangible assets associated with its acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on the Company's results of operations. See Note 8 for further discussion of the Company's goodwill and intangible assets.

Income taxes

The Company recognizes deferred tax assets and liabilities for temporary differences between the financial reporting basis and the tax basis of the Company's assets and liabilities along with net operating loss and tax credit carryovers. The Company records a valuation allowance against its deferred tax assets to reduce the net carrying value to an amount that it believes is more likely than not to be realized. When the Company establishes or reduces the valuation allowance against its deferred tax assets, its provision for income taxes will increase or decrease, respectively, in the period such determination is made.

Valuation allowances against the Company's deferred tax assets were $37.1 million and $51.0 million at December 31, 2010 and December 31, 2009, respectively. Changes in the valuation allowances, when they are recognized in the provision for income taxes, are included as a component of the estimated annual effective tax rate.

Revenue recognition

License fees are comprised of initial fees and milestone payments derived from collaborative licensing arrangements. Inovio continues to recognize non-refundable milestone payments upon the achievement of specified milestones, provided the milestone payment is substantive in nature and the achievement of the milestone was not reasonably assured at the inception of the agreement. Inovio defers payments for milestone events which are reasonably assured and recognizes them ratably over the minimum remaining period of the performance obligations. Payments for milestones which are not reasonably assured are treated as the culmination of a separate earnings process and are recognized as revenue when the milestones are achieved.

Inovio has adopted a strategy of co-developing or licensing its gene delivery technology for specific genes or specific medical indications. Accordingly, Inovio has entered into collaborative research and development agreements and has received funding for pre-clinical research and clinical trials. Payments under these agreements, which are non-refundable, are recorded as revenue as the related research expenditures are incurred pursuant to the terms of the agreements and provided collectability is reasonably assured.

Inovio receives non-refundable grants under available government programs. Inovio records government grants applicable towards current expenditures as revenue when there is reasonable assurance that the Company has complied with all conditions necessary to receive the grants, collectability is reasonably assured, and the related expenditures have been incurred.

Research and development expenses

Since Inovio's inception, virtually all of the Company's activities have consisted of research and development efforts related to developing electroporation technologies. Research and development expenses consist of expenses incurred in performing research and development activities including salaries and benefits, facilities and other overhead expenses, clinical trials, contract services and other outside expenses. Research and development expenses are charged to operations as they are incurred. Inovio reviews and accrues clinical trials expense based on work performed, which relies on estimates of total costs incurred based on patient enrollment, completion of studies and other events.

Net loss per share

Basic net loss per share is computed by dividing the net loss for the year by the weighted average number of common shares outstanding during the year. Diluted loss per share is calculated in accordance with the treasury

stock method and reflects the potential dilution that would occur if securities or other contracts to issue common stock were exercised or converted to common stock. Since the effect of the assumed exercise of common stock options and other convertible securities was anti-dilutive for all periods presented, basic and diluted loss per share are the same.

The following table summarizes potential common shares that were excluded from historical basic and diluted net loss per share calculation because of their anti-dilutive effect:

Common stock equivalents	As of December 31, 2010	As of December 31, 2009	As of December 31, 2008
Options to purchase common stock	12,649,968	13,142,039	4,616,714
Warrants to purchase common stock	7,771,133	14,161,360	6,890,448
Convertible preferred stock	38,233	38,233	104,409
Non-vested restricted common stock	—	—	138,750
Total	20,459,334	27,341,632	11,750,321

Leases

Leases are classified as either capital or operating leases. Leases which transfer substantially all of the benefits and risks incidental to the ownership of assets are accounted for as if there was an acquisition of an asset and incurrence of an obligation at the inception of the lease. All other leases are accounted for as operating leases. Inovio's Blue Bell, PA headquarters and San Diego, CA facility leases, which have escalating payments, are both expensed on a straight-line basis over the term of the lease. These leases represent the primary expense and commitment as indicated in Note 12 "Commitments" below. Other leases exist for office machinery, such as copiers, wherein lease expense is recorded as incurred.

Stock-based compensation

The Company recognizes compensation expense for all share-based awards made to employees and directors. Inovio estimates the fair value of stock options granted using the Black-Scholes option pricing model. The Black-Scholes option pricing model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions, including the expected stock price volatility and expected option life. Inovio amortizes the fair value of the awards on a straight-line basis. All option grants are amortized over the requisite service period of the awards. Expected volatility is based on historical volatility. The expected life of options granted is based on historical expected life. The risk-free interest rate is based on the United States Treasury yield in effect at the time of grant with maturities appropriate for the expected term of the stock option. The forfeiture rate is based on historical data and Inovio records stock-based compensation expense only for those awards that are expected to vest. The dividend yield is based on the fact that no dividends have been paid on common stock historically, and none are currently expected to be paid.

Assumptions used in the Black-Scholes model are presented below:

	Year Ended December 31,		
	2010	2009	2008
Risk-free interest rate	1.09% – 2.65%	1.37% – 1.88%	1.38% – 3.18%
Expected volatility	134%	96% – 132%	69% – 91%
Expected life in years	4	4	4
Dividend yield	—	—	—

Other Accumulated Comprehensive Loss

Components of comprehensive loss are reported in the consolidated financial statements in the period in which they are recognized. The components of comprehensive loss for us include net loss, unrealized gains and losses on investments and foreign currency translation adjustments. The components of accumulated other comprehensive loss are indicated on the Consolidated Statements of Stockholder's Equity.

Pending Adoption of Recent Accounting Pronouncements

We describe below recent pronouncements that may have a significant effect on our financial statements. We do not discuss recent pronouncements that are not anticipated to have an impact on or are unrelated to our financial condition, results of operations, or related disclosures.

Accounting Standards Update 2009-13 —In September 2009, the Financial Accounting Standards Board ("FASB") ratified the final consensus reached by the Emerging Issues Task Force ("EITF") that revised the authoritative guidance for revenue arrangements with multiple deliverables. The guidance addresses how to determine whether an arrangement involving multiple deliverables contains more than one unit of accounting and how the arrangement consideration should be allocated among the separate units of accounting. We adopted the provisions of this guidance on a prospective basis on January 1, 2011, the effect of which will be dependent on the terms of any new or materially modified arrangements subsequent to adoption.

Accounting Standards Update 2010-17 —In April 2010, the FASB ratified the final consensus that offers an alternative method of revenue recognition for milestone payments. The guidance states that an entity can make an accounting policy election to recognize a payment that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. The guidance will be effective for fiscal years, and interim periods within those years, beginning on or after June 15, 2010 with early adoption permitted, provided that the revised guidance is applied retrospectively to the beginning of the year of adoption. The guidance may be applied retrospectively or prospectively for milestones achieved after the adoption date. We are currently evaluating the effects, if any, the adoption of this guidance will have on our consolidated financial statements.

4. Marketable Securities and Fair Value Measurements

The guidance regarding fair value measurements establishes a three-tier fair value hierarchy which prioritizes the inputs used in measuring fair value. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions.

The following table presents the Company's financial assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2010:

	Fair Value Measurements at December 31, 2010			
	Total	Using Quoted Prices in Active Markets for Identical Assets (Level 1)	Using Significant Other Unobservable Inputs (Level 2)	Using Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds	$16,852,609	$ 16,852,609	$ —	$ —
Certificates of deposit	1,846,271	—	1,846,271	—
Investment in affiliated entity	11,360,888	11,360,888	—	—
Total Assets	$30,059,768	$ 28,213,497	$ 1,846,271	$ —
Liabilities:				
Common stock warrants	$ 370,926	$ —	$ —	$ 370,926
Total Liabilities	$ 370,926	$ —	$ —	$ 370,926

The following table presents the Company's financial assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2009:

	Total	Using Quoted Prices in Active Markets for Identical Assets (Level 1)	Using Significant Unobservable Inputs (Level 3)
Assets:			
Money market funds	$24,082,073	$ 24,082,073	$ —
Short-term investments	10,397,530	—	10,397,530
Auction rate securities rights	3,145,156	—	3,145,156
Investment in affiliated entity	12,330,802	12,330,802	—
Total Assets	$49,955,561	$ 36,412,875	$ 13,542,686
Liabilities:			
Common stock warrants	$ 2,774,850	$ —	$ 2,774,850
Total Liabilities	$ 2,774,850	$ —	$ 2,774,850

Level 1 assets at December 31, 2010 and 2009 include money market funds held by the Company which are valued at quoted market prices, as well as the Company's investment in VGX Int'l, for which the fair value is based on the market value of 8,075,775 common shares on December 31, 2010 listed on the Korean Stock Exchange.

Level 2 assets at December 31, 2010 include one certificate of deposit held by the Company with a maturity of 12 months. The Company determines fair value through broker quotations with reasonable levels of price transparency. Certificates of deposit are initially valued at the transaction price and subsequently valued, at the end of each reporting period, typically utilizing market observable data. There were no Level 2 assets at December 31, 2009.

There are no Level 3 assets as of December 31, 2010. Level 3 assets held as of December 31, 2009 include municipal debt obligations known as auction rate securities ("ARS"). Due to conditions in the global credit markets, these securities, representing a par value of $13.6 million, were not liquid. In December 2008, the Company, via its wholly-owned subsidiary Genetronics, Inc. ("Genetronics"), which held the ARS, accepted an offer of ARS Rights from UBS. The ARS Rights permitted the Company to require UBS to purchase the Company's ARS at par value at any time during the period of June 30, 2010 through July 2, 2012. On July 1, 2010, the Company exercised these ARS Rights and the ARS were sold at the par value.

Level 3 liabilities held as of December 31, 2010 and 2009 consist of common stock warrant liabilities associated with warrants to purchase the Company's common stock issued in October 2006, August 2007 and July 2009. If unexercised, the warrants will expire at various dates between October 2011 and July 2014.

There have been no transfers of assets or liabilities between the fair value measurement classifications.

The following table presents a summary of changes in fair value of the Company's total Level 3 financial assets for the years ended December 31, 2010 and 2009:

	Year Ended December 31, 2010	Year Ended December 31, 2009
Balance at beginning of year	$ 13,542,686	$13,450,965
Sale of auction rate securities	(13,550,000)	—
Change in value of auction rate securities	3,152,470	1,228,059
Change in value of auction rate security rights	(3,145,156)	(1,136,338)
Balance at end of year	$ —	$13,542,686
Realized gain included in other income/(expense), net	$ 7,314	$ 91,721

As of December 31, 2010 and 2009, the Company recorded a $371,000 and $2.8 million common stock warrant liability, respectively. The Company reassesses the fair value of the common stock warrants at each reporting date utilizing a Black-Scholes pricing model. Inputs used in the pricing model include estimates of stock price volatility, expected warrant life and risk-free interest rate. The Company develops its estimates based on historical data. As a result of these calculations, the Company recorded a net gain of $2.4 million and net loss of ($2.6 million) for the years ended December 31, 2010 and 2009, respectively. The net gain/(loss) is reflected in the Company's consolidated statement of operations as a component of other income/(expense), net.

The following table presents the changes in fair value of the Company's total Level 3 financial liabilities for the years ended December 31, 2010 and 2009:

	Year Ended December 31, 2010	Year Ended December 31, 2009
Balance at beginning of year	$ 2,774,850	$ 224,582
Fair value gain included in other income/ (expense), net	(2,403,924)	2,550,268
Balance at end of year	$ 370,926	$2,774,850

5. Line of Credit

On August 26, 2008, the Company received notice from UBS Bank USA ("UBS") that the Company's application had been approved for a $5.0 million uncommitted demand revolving line of credit ("Line of Credit") secured by ARS held by the Company in an account with UBS Financial Services, Inc. (the "Collateral Account"), to provide additional working capital. On December 19, 2008, the Company amended its existing loan agreement with UBS Bank USA, increasing the existing credit line up to $12.1 million, with the ARS pledged as collateral. The Company fully drew down on the line of credit on December 23, 2008. Advances under the Line of Credit accrued interest at LIBOR plus 1.00% (the "Spread Over LIBOR"). The loan was treated as a "no net cost loan", as it accrued interest at a rate equal to the average rate of interest paid to the Company on the pledged ARS, and the net interest cost to the Company was zero. During the year ended December 31, 2010, the Company sold all of the ARS held at par value and the line of credit was paid off in full.

6. Major Customers and Concentration of Credit Risk

Customer	2010	% of Total Revenue	2009	% of Total Revenue	2008	% of Total Revenue
Wyeth	$ 75,000	1%	$4,496,153	49%	$ 846,693	40%
NIAID	4,064,319	66	2,985,595	33	—	—
PATH/MVI	303,417	5	439,894	5	—	—
U.S Army grant	373,315	6	466,181	5	92,954	4
VGX Int'l (affiliated entity)	381,206	6	59,087	1	—	—
Merck	—	—	125,996	1	631,549	30
United States Government grant—Patient Protection and Affordable Care Act of 2010 ("PPACA")	733,438	12	—	—	—	—
All other	214,010	4	547,205	6	526,436	26
Total Revenue	$6,144,705	100%	$9,120,111	100%	$2,097,632	100%

During the years ended December 31, 2010, 2009 and 2008, the Company recognized revenue from various license fees and milestone payments, collaborative research and development agreements and grants and government contracts. As of December 31, 2009, $211,000 or 81% of our total consolidated accounts receivable balance of $259,000 was attributable to the US Army. As of December 31, 2010, none of our accounts receivable balance was attributable to the US Army.

There is minimal credit risk with these customers based upon collection history, their size and financial condition. Accordingly, the Company does not consider it necessary to record a reserve for uncollectible accounts receivable.

7. Fixed Assets

Fixed assets at December 31, 2010 and 2009 consist of the following:

	Cost	Accumulated depreciation and amortization	Net book value
As of December 31, 2010			
Machinery, equipment and office furniture	$1,685,487	$(1,485,576)	$199,911
Leasehold improvements	393,064	(316,180)	76,884
	$2,078,551	$(1,801,756)	$276,795
As of December 31, 2009			
Machinery, equipment and office furniture	$1,778,990	$(1,499,153)	$279,837
Leasehold improvements	341,133	(277,513)	63,620
	$2,120,123	$(1,776,666)	$343,457

Depreciation expense for the years ended December 31, 2010, 2009 and 2008 was $195,000, $237,000 and $195,000, respectively. The Company determined that the carrying value of these long-lived assets was not impaired for the periods presented.

8. Goodwill and Intangible Assets

The following sets forth the goodwill and intangible assets by major asset class:

	Useful Life (Yrs)	December 31, 2010			December 31, 2009		
		Gross	Accumulated Amortization	Net Book Value	Gross	Accumulated Amortization	Net Book Value
Non-Amortizing:							
Goodwill(a)		$10,113,371	$ —	$10,113,371	$10,113,371	$ —	$10,113,371
Amortizing:							
Patents	8 – 17	5,802,528	(4,151,955)	1,650,573	5,802,528	(3,727,747)	2,074,781
Licenses	8 – 17	1,323,761	(989,374)	334,387	1,198,781	(965,907)	232,874
CELLECTRA ® (b)	5 – 11	8,106,270	(1,915,126)	6,191,144	8,106,270	(705,573)	7,400,697
GHRH(b)	11	335,314	(50,166)	285,148	335,314	(18,482)	316,832
Other(c)	18	4,050,000	(1,331,250)	2,718,750	4,050,000	(1,106,250)	2,943,750
Total intangible assets		19,617,873	(8,437,871)	11,180,002	19,492,893	(6,523,959)	12,968,934
Total goodwill and intangible assets		$29,731,244	$(8,437,871)	$21,293,373	$29,606,264	$(6,523,959)	$23,082,305

(a) Goodwill was recorded from the Inovio AS acquisition in January 2005 and from the acquisition of VGX in June 2009 for $3.9 million and $6.2 million, respectively.
(b) CELLECTRA ® and GHRH are developed technologies which were recorded from the acquisition of VGX.
(c) Other intangible assets represent the fair value of acquired contracts and intellectual property from the Inovio AS acquisition.

Aggregate amortization expense on intangible assets was $1.9 million, $1.4 million and $798,000 for the years ended December 31, 2010, 2009 and 2008, respectively. Amortization expense related to intangible assets at December 31, 2010 for each of the next five fiscal years and beyond is expected to be incurred as follows:

2011	$ 1,869,517
2012	1,821,170
2013	1,770,538
2014	942,718
2015	870,200
Thereafter	3,905,817
	$11,179,960

In accordance with the guidance regarding goodwill and other non-amortizing intangible assets, the Company has completed its annual impairment test and fair value analysis for goodwill held throughout the year. The Company conducts the impairment test annually on November 30 th . There was no impairment or impairment indicator present and no loss was recorded during the years ended December 31, 2010, 2009 and 2008, respectively.

9. Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses at December 31, 2010 and 2009 consist of the following:

	As of December 31, 2010	As of December 31, 2009
Trade accounts payable	$ 703,196	$1,127,390
Trade accounts payable due to affiliated entity	861,048	445,091
Accrued compensation	1,508,436	1,130,968
Other accrued expenses	1,377,305	1,486,653
Other accrued expenses due to affiliated entity	819,900	—
	$5,269,885	$4,190,102

10. Deferred Revenue

The Company defers revenue recognition of cash receipts from licensing and other agreements and recognizes them ratably over the minimum remaining period of our performance obligations. The combined current and long-term deferred revenue balance of $3.2 million as of December 31, 2010 consists primarily of cash received from our collaboration and license agreement with VGX Int'l as well as cash receipts from various licensing and other agreements. The combined current and long-term deferred revenue balance of $353,000 as of December 31, 2009 consists primarily of cash received from various licensing and other agreements.

11. Stockholders' Equity

Preferred Stock

	Authorized	Issued	Outstanding as of December 31, 2010	Outstanding as of December 31, 2009
Series A Preferred Stock, par $0.001	1,000	817	—	—
Series B Preferred Stock, par $0.001	1,000	750	—	—
Series C Preferred Stock, par $0.001	1,091	1,091	26	26
Series D Preferred Stock, par $0.001	1,966,292	1,966,292	—	—

The following is a summary of changes in the number of outstanding shares of our preferred stock for the years ended December 31, 2008, 2009 and 2010:

	Series C	Series D
Shares Outstanding as of January 1, 2008	71	113,311
Preferred Shares converted	—	(113,311)
Shares Outstanding as of December 31, 2008	71	—
Preferred Shares converted	(45)	—
Shares Outstanding as of December 31, 2009	26	—
Shares Outstanding as of December 31, 2010	26	—

No shares of the Company's preferred stock were converted during the year ended December 31, 2010. During the year ended December 31, 2009, 45 shares of the Company's Series C preferred stock were converted into 66,176 shares of the Company's common stock.

The shares of the Company's outstanding Series C Preferred Stock have the following pertinent rights and privileges, as set forth in the Company's Amended and Restated Certificate of Incorporation and its Certificates of Designations, Rights and Preferences related to the various series of preferred stock.

Rights on Liquidation

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company (a "liquidation event"), before any distribution of assets of the Company shall be made to or set apart for the holders of common stock, the holders of Series C Preferred Stock, pari passu, are entitled to receive payment of such assets of the Company in an amount equal to $10,000 per share of such series of preferred stock, plus any accumulated and unpaid dividends thereon (whether or not earned or declared).

If the assets of the Company available for distribution to stockholders exceed the aggregate amount of the liquidation preferences payable with respect to all shares of each series of preferred stock then outstanding, then, after the payment of such preferences is made or irrevocably set aside, the holders of the Company's common stock are entitled to receive a pro rata portion of such assets based on the aggregate number of shares of common stock held by each such holder. The holders of the Company's outstanding preferred stock shall participate in such a distribution on a pro-rata basis, computed based on the number of shares of common stock which would be held by such preferred holders if immediately prior to the liquidation event all of the outstanding shares of the preferred stock had been converted into shares of common stock at the then current conversion value applicable to each series.

A Change of Control of the Company (as defined in the Certificates of Designations, Rights and Preferences) is not a liquidation event triggering the preferences described above, and is instead addressed by separate terms in the Series C Certificates of Designations, Rights, and Preferences.

Although the liquidation preferences are in excess of the par value of $0.001 per share of the Company's preferred stock, these preferences are equal to or less than the stated value of such shares based on their original purchase price.

Voting Rights

The holders of all series of the Company's preferred stock outstanding have full voting rights and powers equal to the voting rights and powers of holders of the Company's common stock and are entitled to notice of any stockholders' meeting in accordance with the Company's Bylaws. Holders of the Company's preferred stock are entitled to vote on any matter upon which holders of the Company's common stock have the right to vote, including, without limitation, the right to vote for the election of directors together with the holders of common stock as one class.

Conversion Rights

The Series C Preferred Stock each provide the holder of such shares an optional conversion right and provide a mandatory conversion upon certain triggering events.

Right to Convert The holder of any share or shares of Series C Preferred Stock has the right at any time, at such holder's option, to convert all or any lesser portion of such holder's shares of the Preferred Stock into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing (i) the aggregate Liquidation Preference applicable to the particular series of preferred shares, plus accrued and unpaid dividends thereon by (ii) the applicable Conversion Value (as defined in the relevant series' Certificate of Designations, Rights and Preferences) then in effect for such series of preferred shares. The Company is not obligated to issue any fractional shares or scrip representing fractional shares upon such conversion and instead shall pay the holder an amount in cash equal to such fraction multiplied by the current market price per share of the Company's common stock.

Mandatory Conversion The Company has the option upon thirty (30) days prior written notice, to convert all of the outstanding shares of the Series C Preferred Stock into such number of fully paid and non-assessable shares of common stock as is determined by dividing (i) the aggregate Liquidation Preference of the shares of the relevant series of preferred stock to be converted plus accrued and unpaid dividends thereon by (ii) the applicable Conversion Value (as defined in the relevant series' Certificate of Designations, Rights and Preferences) then in effect, if at any time after twelve months following the Original Issue Date of each such series of preferred stock all of the following triggering events occur:

(i) The registration statement covering all of the shares of common stock into which the particular series of preferred stock is convertible is effective (or all of the shares of common stock into which the preferred stock is convertible may be sold without restriction pursuant to Rule 144 under the Securities Act of 1933, as amended);

(ii) the Daily Market Price (as defined in the applicable Certificates of Designations, Rights and Preferences) of the common stock crosses a specified pricing threshold for twenty of the thirty consecutive trading days prior to the date the Company provides notice of conversion to the holders; and

(iii) the average daily trading volume (subject to adjustment for stock dividends, subdivisions and combinations) of the common stock for at least twenty of the thirty consecutive trading days prior to the date the Company provides notice of conversion to the holders exceeds 25,000 shares.

As of December 31, 2010, our outstanding shares of the Series C Preferred Stock were convertible into 38,233 shares of our common stock at a conversion price of $6.80 per share, and the applicable Daily Market Price of the common stock for triggering mandatory conversion equaled $18.00 per share.

Convertible Subordinated Promissory Notes

On June 1, 2009, the Company consummated the transactions contemplated by the Merger Agreement. VGX had an aggregate of $4,400,000 in principal amount of convertible subordinated promissory notes, and an aggregate of $468,000 in accrued and unpaid interest on such notes, as of June 30, 2009. Pursuant to the Merger Agreement the notes were convertible at the selling stockholders' option into our common stock; the notes also automatically converted into the Company's common stock in the event that the Company's common stock traded at or above $2.10 per share for five consecutive trading days. The conversion price of the notes was $1.05 per share. As of August 4, 2009, the Company's common stock had traded at or above $2.10 per share for five consecutive trading days, and the notes were automatically converted into 4,600,681 shares of Inovio's common stock.

Common Stock

In January 2011, the Company entered into investor purchase agreements with investors relating to the issuance and sale of (a) 21,130,400 shares of common stock, and (b) warrants to purchase a total of 10,565,200 shares of common stock with an exercise price of $1.40 per share, for an aggregate purchase price of

approximately $24.3 million. The shares of common stock and warrants were sold in units, consisting of one share of common stock and a warrant to purchase 0.50 of a share of common stock, at a purchase price of $1.15 per unit. The Warrants have a five-year term from the date of issuance and are first exercisable commencing on the 180th day after the date of issuance. The Company may call the warrants if the closing bid price of the common stock has been at least $2.80 over 20 trading days and certain other conditions are met. The Company received net proceeds from the transaction of approximately $23.0 million, after deducting the placement agent's fee and estimated offering expenses payable by the Company.

In August 2010, the Company entered into an At-The-Market Equity Distribution Agreement (the "Agreement") with an outside placement agent (the "Placement Agent"), under which the Company may, from time to time, offer and sell its common stock having aggregate sales proceeds of up to $25.0 million through or to the Placement Agent, for resale. Sales of the Company's common stock through the Placement Agent, if any, will be made by means of ordinary brokers' transactions on the NYSE Amex or otherwise at market prices prevailing at the time of sale or as otherwise agreed upon by the Company and the Placement Agent. The Placement Agent will use commercially reasonable efforts to sell the Company's common stock from time to time, based upon instructions from the Company. The Company will pay the Placement Agent a commission, or allow a discount, as the case may be, in each case equal to 3.0% of the gross sales proceeds of any common stock sold through the Placement Agent under the Agreement. The Company has agreed to reimburse the Placement Agent for certain expenses incurred by them in connection with the transactions contemplated by the Agreement, up to an aggregate of $30,000, plus up to an additional $5,000 per calendar quarter related to ongoing maintenance, due diligence expenses and other expenses associated therewith.

As of December 31, 2010, the Company has sold a total of 1,994,672 shares of common stock under the Agreement. The sales were made at a weighted average price of $1.20 per share with net proceeds to the Company of $2.3 million, after deducting commissions and other fees.

In July 2009, the Company entered into a securities purchase agreement with certain institutional investors relating to the sale and issuance of (a) 11,111,110 shares of common stock and (b) warrants to purchase a total of 2,777,776 shares of common stock with an exercise price of $3.50 per share, for an aggregate purchase price of approximately $30 million. The warrants issued expired in August 2010, unexercised. The shares of common stock and warrants were sold in units, consisting of one share of common stock and a warrant to purchase 0.25 of a share of common stock, at a purchase price of $2.70 per unit. The Company received net proceeds from the transaction of approximately $28.4 million, after deducting offering expenses.

Upon the closing of the Merger in June 2009, an aggregate of 41,492,757 shares of the Company's common stock were issued to the former stockholders of VGX, and an additional 18,794,187 shares of the Company's common stock were reserved for issuance upon exercise of the assumed options and warrants and conversion of the principal of and maximum interest payable on the VGX convertible debt. In August 2009 the VGX convertible debt was automatically converted into 4,600,681 shares of the Company's common stock. VGX warrants assumed were ten-year warrants to purchase an aggregate of 4,923,406 shares of the Company's common stock with an exercise price ranging from $0.26 to $1.28 per share, exercisable at various dates from March 25, 2013 through April 28, 2016. As of December 31, 2010, none of these warrants have been exercised.

In August 2007, the Company entered into an agreement with an outside consulting advisor pursuant to which the Company issued 230,000 registered shares of common stock and registered warrants to purchase 150,000 shares of common stock, as payment of a non-refundable retainer in connection with the engagement of its services. The warrants issued have an exercise price of $3.00 per share, and are exercisable through August 3, 2012. As of December 31, 2010, none of these warrants have been exercised.

In January 2007, the Company exchanged 2,201,644 restricted shares of common stock and warrants to purchase up to 770,573 restricted shares of common stock for 2,201,644 ordinary shares of its Singapore

subsidiary Inovio Asia Pte. Ltd. (IAPL), pursuant to the terms of the Securities Purchase and Exchange Agreement under which the ordinary shares were originally issued by IAPL in October 2006 for $5.3 million. The warrants issued have an exercise price of $2.87 per share and are exercisable through October 13, 2011. As of December 31, 2010, none of these warrants have been exercised.

The Company accounts for registered common stock warrants issued in October 2006, August 2007 and July 2009 under the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the registered warrants require the issuance of registered securities upon exercise and do not sufficiently preclude an implied right to net cash settlement. The Company classifies registered warrants on the consolidated balance sheet as a current liability which is revalued at each balance sheet date subsequent to the initial issuance. Determining the appropriate fair-value model and calculating the fair value of registered warrants requires considerable judgment, including estimating stock price volatility and expected warrant life. The Company develops its estimates based on historical data. A small change in the estimates used may have a relatively large change in the estimated valuation. The Company uses the Black-Scholes pricing model to value the registered warrants. Changes in the fair market value of the warrants are reflected in the consolidated statement of operations as "Other income/ (expense), net."

Warrants

In addition to warrants granted as discussed above, the Company provides the following additional information regarding other warrants.

Participants in our October 2006 registered offering with foreign investors received five-year warrants to purchase an aggregate of 1,593,821 shares of our common stock with an exercise price of $2.87 per share, exercisable through October 13, 2011. As of December 31, 2010, none of these warrants have been exercised.

In December 2010, warrants expired to purchase 3,462,451 shares of our common stock issued in connection with our December 2005 private placement.

In September 2010, warrants expired to purchase 150,000 shares of our common stock, which were issued in connection with a license agreement with the University of South Florida Research Foundation, Inc. (USF).

In December 2009, a warrant expired to purchase 50,000 shares of our common stock, which was issued in connection with the leasing of our corporate headquarters.

In May 2009, warrants expired to purchase 713,603 shares of our common stock, which were issued in connection with our Series C Preferred Stock offering.

In July 2008, warrants expired to purchase 2,001,552 shares of our common stock, which were issued in connection with our Series A and B Preferred Stock offerings.

Stock options

The Company has one active stock and cash-based incentive plan, the Amended and Restated 2007 Omnibus Incentive Plan (the "Incentive Plan"), pursuant to which the Company has granted stock options and restricted stock awards to executive officers, directors and employees. The plan was adopted on March 31, 2007, approved by the stockholders on May 4, 2007, approved by the stockholders as amended on May 2, 2008, and approved by the stockholders as amended and restated on August 25, 2009 and May 14, 2010. On May 14, 2010 the stockholders approved to increase the aggregate number of shares available for grant under the Incentive Plan by 2,000,000 and to provide that the aggregate number of shares available for grant under the plan will be increased on January 1 of each year beginning in 2011 by a number of shares equal to the lesser of (1) 2,055,331

or (2) such lesser number of shares as may be determined by the Board. At December 31, 2010, the Incentive Plan reserves 5,750,000 shares of common stock for issuance as or upon exercise of incentive awards granted and to be granted at future dates. At December 31, 2010, the Company had 2,140,103 shares of common stock available for future grant under the plan, and 240,000 shares of vested restricted stock and options to purchase 3,054,684 shares of common stock outstanding under the plan. The awards granted and available for future grant under the Incentive Plan generally vest over three years and have a maximum contractual term of ten years. The Incentive Plan terminates by its terms on March 31, 2017.

The Incentive Plan supersedes all of the Company's previous stock option plans, which include the Amended 2000 Stock Option Plan, under which the Company had options to purchase 1,846,433 shares of common stock outstanding at December 31, 2010. The terms and conditions of the options outstanding under these plans remain unchanged.

Total compensation cost for our stock plans recognized in the consolidated statement of operations for the years ended December 31, 2010, 2009 and 2008 was $898,000, $1.8 million, and $1.0 million, respectively, of which $281,000, $595,000 and $286,000 was included in research and development expenses and $617,000, $1.2 million and $746,000 was included in general and administrative expenses, respectively.

At December 31, 2010 and 2009, there was $928,000 and $1.4 million of total unrecognized compensation cost, respectively, related to unvested stock options, which is expected to be recognized over a weighted-average period of 1.7 years and 2.5 years, respectively.

The fair value of options granted to non-employees at the measurement dates were estimated using the Black-Scholes pricing model. Total stock-based compensation for options granted to non-employees for the years ended December 31, 2010, 2009 and 2008 was $277,000, $339,000 and $58,000, respectively. As of December 31, 2010 and 2009, 4,404,200 and 4,159,619 non-employee options remained outstanding, respectively.

The following table summarizes total stock options outstanding at December 31, 2010:

	Options outstanding			Options exercisable	
Exercise price	Options outstanding	Weighted-average remaining contractual life (in years)	Weighted average exercise price	Options exercisable	Weighted-average exercise price
$0.00 – $1.00	1,533,965	4.7	$ 0.32	1,528,340	$ 0.32
$1.01 – $2.00	9,451,730	6.4	$ 1.35	8,138,075	$ 1.34
$2.01 – $4.00	1,338,024	4.7	$ 2.96	1,338,024	$ 2.96
$4.01 – $6.00	276,249	2.8	$ 4.94	276,249	$ 4.94
$6.01 – $6.12	50,000	3.2	$ 6.12	50,000	$ 6.12
	12,649,968	5.9	$ 1.49	11,330,688	$ 1.50

At December 31, 2010, the aggregate intrinsic value of options outstanding was $1.3 million, the aggregate intrinsic value of options exercisable was $1.3 million, and the weighted average remaining contractual term of options exercisable was 5.7 years.

At December 31, 2009, the aggregate intrinsic value of options outstanding was $1.5 million, the aggregate intrinsic value of options exercisable was $1.5 million, and the weighted average remaining contractual term of options exercisable was 6.1 years.

Stock option activity under our stock option plans was as follows:

	Number of shares	Weighted-average exercise price
Balance, December 31, 2007	3,465,462	$ 3.15
Granted	1,474,500	0.86
Exercised	(1,250)	0.87
Cancelled	(321,998)	3.14
Balance, December 31, 2008	4,616,714	2.42
Stock options assumed in Merger	9,082,681	1.04
Granted	1,902,000	1.52
Exercised	(1,428,475)	0.57
Cancelled	(1,030,881)	2.58
Balance, December 31, 2009	13,142,039	1.54
Granted	442,500	1.12
Exercised	(297,462)	0.57
Cancelled	(637,109)	2.75
Balance, December 31, 2010	12,649,968	$ 1.49

The weighted average exercise price was $2.87 for the 433,561 options which expired during the year ended December 31, 2010, $3.01 for the 742,094 options which expired during the year ended December 31, 2009 and $3.56 for the 233,185 options which expired during the year ended December 31, 2008.

The weighted average grant date fair value per share was $0.93 for options granted during the year ended December 31, 2010, $1.21 for options granted during the year ended December 31, 2009 and $0.46 for options granted during the year ended December 31, 2008.

The aggregate intrinsic value of options exercised was $193,000 during the year ended December 31, 2010, $1.6 million during the year ended December 31, 2009 and $0 during the year ended December 31, 2008.

The Company has no non-vested restricted shares as of December 31, 2010 and December 31, 2009.

As of December 31, 2010, there was no unrecognized compensation cost related to nonvested stock-based compensation arrangements.

VGX Animal Health (“VGX AH”) has adopted a 2007 equity incentive plan for the issuance of options to employees and consultants. There were no options granted under the plan during the year ended December 31, 2010. There were 145,000 options granted during the year ended December 31, 2009 with a weighted average exercise price of $0.75. At December 31, 2010, there were 1,800,167 options outstanding, 1,716,834 options exercisable and 199,833 options available for future grants under the plan. There were no options exercised or cancelled during the year ending December 31, 2010 and 2009.

12. Commitments

Our corporate headquarters is located at 1787 Sentry Parkway West in Blue Bell, Pennsylvania. Our corporate office in Blue Bell is leased space for approximately 6,442 square feet and expires on April 30, 2016. The annual rent will be $122,000 for the first year, $126,000 for the second year, $129,000 for the third year, $132,000 for the fourth year, $135,000 for the fifth year and $139,000 for the sixth year. At the end of the lease term, we have the option of renewing this lease for an additional three-year lease term at an annual rate equal to the fair market rental value of the property, as defined in the lease agreement.

The corporate office in San Diego is located at 11494 Sorrento Valley Road in San Diego, California. This lease was amended in December 2010 to include approximately 13,000 square feet and will run through August 31, 2013. The annual rent based on the new lease terms will be $221,000 in the first year, $255,000 in the second year and $184,000 for the partial third year. At the end of the lease term, we have the option of renewing this lease for an additional five-year lease term at an annual rate equal to the fair market rental value of the property, as defined in the lease agreement.

During 2010 the Company consolidated operations previously performed in The Woodlands, Texas to its Blue Bell and San Diego locations. As a result, in November 2010 the Company transferred its facility lease in The Woodlands, Texas to a wholly-owned subsidiary of its affiliated entity, VGX Int'l. The Company has no further obligations under the lease.

Rent expense was $607,000, $599,000, and $422,000 for the years ended December 31, 2010, 2009 and 2008, respectively. This amount is net of sublease income of $269,000, 346,000 and $103,000, respectively. Future minimum lease payments under non-cancelable operating leases as of December 31, 2010 are as follows:

2011	$ 325,368
2012	386,633
2013	314,790
2014	134,208
2015	137,429
Thereafter	46,168
Total	$1,344,596

In the normal course of business, the Company is a party to a variety of agreements pursuant to which they may be obligated to indemnify the other party. It is not possible to predict the maximum potential amount of future payments under these types of agreements due to the conditional nature of our obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by us under these types of agreements have not had a material effect on our business, consolidated results of operations or financial condition.

13. Investment in Affiliated Entity

The Company's investment in an affiliated entity represents the Company's 19.65% ownership interest in the Korean based company, VGX Int'l. This investment is measured at fair value on a recurring basis. The fair market value of the Company's interest in VGX Int'l was determined using the closing price of VGX Int'l's shares of common stock as listed on the Korean Stock Exchange as of December 31, 2010.

14. Income Taxes

In accordance with the guidance pursuant to accounting for income taxes, a deferred tax asset or liability is determined based on the difference between the financial statement and tax basis of assets and liabilities as measured by the enacted tax rates which will be in effect when these differences reverse. The Company provides a valuation allowance against net deferred tax assets unless, based upon the available evidence, it is more likely than not that the deferred tax asset will be realized.

The components of the (benefit) provision for income taxes are presented in the following table:

	As of December 31, 2010	As of December 31, 2009	As of December 31, 2008
Current:			
Federal	$ (4,000)	$ (30,000)	$ —
State	22,000	—	—
Foreign	—	—	—
	$ 18,000	$ (30,000)	$ —
Deferred:			
Federal	$ 36,000	$ —	$ —
State	17,000	—	—
Foreign	—	(887,000)	(63,000)
	53,000	(887,000)	(63,000)
	71,000	(917,000)	$ (63,000)

The reconciliation of income taxes attributable to operations computed at the statutory tax rates to income tax expense (recovery), using a 35% statutory tax rate, is:

	Year ended December 31, 2010	Year ended December 31, 2009	Year ended December 31, 2008
Income (benefit) taxes at statutory rates	$ (6,154,000)	$(8,859,000)	$(4,538,000)
State income tax, net of federal benefit	(1,189,000)	(1,287,000)	(668,000)
Change in valuation allowance	(13,877,000)	6,134,000	5,328,000
IRC Section 382/383 limitation	20,758,000	—	—
Fair value warrant	(841,000)	450,000	50,000
Stock compensation	343,000	470,000	304,000
Change in state tax rate	998,000	—	—
Other	33,000	2,175,000	(539,000)
	$ 71,000	$ (917,000)	$ (63,000)

The income tax expense (recovery) has been recorded as a reduction to general and administrative expenses, as its effect is immaterial.

Significant components of the Company's deferred tax assets and liabilities as of December 31, 2010 and 2009 are shown below:

	As of December 31, 2010	As of December 31, 2009
Deferred tax assets:		
Capitalized research expense	$ 4,856,000	$ 5,402,000
Net operating loss carry forwards	28,423,000	42,405,000
Research and development and other tax credits	1,582,000	2,518,000
Other	5,704,000	4,754,000
	40,565,000	55,079,000
Valuation allowance	(37,116,000)	(50,958,000)
Total deferred tax assets	3,449,000	4,121,000
Deferred tax liabilities:		
Acquired intangibles	$ (2,634,000)	$ (2,899,000)
Investment in affiliated entity	(868,000)	(1,222,000)
Net deferred tax liabilities	(53,000)	—

We have established a valuation allowance for all deferred tax assets including those for net operating loss ("NOL") and tax credit carryforwards. Such a valuation allowance is recorded when it is more likely than not that the deferred tax assets will not be realized. The Company maintains a deferred tax liability related to goodwill that is not netted against the deferred tax assets, as reversal of the taxable temporary difference cannot serve as a source of income for realization of the deferred tax assets, because the deferred tax liability will not reverse until the asset is sold or written down due to impairment.

As of December 31, 2010, the Company had federal, California and Pennsylvania tax net operating loss carry forwards of approximately $71.6 million, $24.7 million and $39.8 million, respectively, net of the net operating losses that will expire due to IRC Section 382 limitations. The federal loss carry forwards will begin to expire in 2011 unless previously utilized. The California loss carry forwards will begin to expire in 2016 and the Pennsylvania loss carry forwards will begin to expire in 2021.

In addition, we had federal and state research tax credit carryforwards of approximately $550,000 and $1.6 million, respectively, net of the federal research and development credits that will expire due to IRC Section 383 limitations. The federal tax credit carryforwards will begin to expire in 2011. The California research tax credits do not expire.

Utilization of the NOL and tax credit carryforwards will be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986, and similar state provisions due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes will limit the amount of NOL and tax credit carryforwards and other deferred tax assets that can be utilized to offset future taxable income and tax, respectively. In general, an ownership change, as defined by Section 382, results from transactions increasing ownership of certain stock holders or public groups in the stock of the corporation by more than 50 percentage points over a three-year period.

The Company is in the process of updating the Section 382/383 study for the Company and VGX, both of which experienced ownership changes under Section 382 as a result of the Merger on June 1, 2009. Based upon the preliminary results of the study, it is estimated that approximately $33.5 million of tax benefits related to NOL and tax credit carryforwards will expire unused. Accordingly, the related NOL and R&D credit carryforwards have been removed from deferred tax assets accompanied by a corresponding reduction of the valuation allowance. Upon completion of the study, deferred tax assets relating to NOL and R&D credit carryforwards for

the Company and VGX may need to be adjusted with a corresponding adjustment to the valuation allowance. Due to the existence of the valuation allowance, limitations created by current and future ownership changes, if any, related to our operations in the United States will not impact our effective tax rate. Any additional ownership changes, may further limit the ability to use the net operating losses and credits carryovers.

The following table summarizes the activity related to our unrecognized tax benefits:

	2010	2009	2008
Balance at beginning of the year	$629,000	—	—
Increases related to current year tax positions	—	—	—
Increases related to prior year tax positions	—	$629,000	—
Expiration of the statue of limitations for the assessment of taxes	—	—	—
Other	—	—	—
Balance at end of the year	$629,000	$629,000	—

The amount of unrecognized tax benefit that, if recognized and realized would affect the effective tax rate is $585,000 as of December 31, 2010. The Company has not recorded any interest and penalties on the unrecognized tax positions as the Company has continued to generate net operating losses after accounting for the unrecognized tax benefits. The Company does not anticipate that the total amount of unrecognized tax benefits will significantly increase or decrease within twelve months of the reporting date.

The Company and its subsidiaries are subject to United States federal income tax as well as income tax in multiple state and foreign jurisdictions. With few exceptions, the Company is no longer subject to United States federal income tax examinations for years before 2007; state and local income tax examinations before 2006; and foreign income tax examinations before 2007. However, to the extent allowed by law, the tax authorities may have the right to examine prior periods where net operating losses were generated and carried forward, and make adjustments up to the amount of the net operating loss carryforward amount. The Company is not currently under Internal Revenue Service ("IRS"), state or local tax examination.

15. 401(k) Plan

In 1995, the Company's United States subsidiary adopted a 401(k) Profit Sharing Plan (the "Plan") covering substantially all of its employees. The defined contribution plan allows the employees to contribute a percentage of their compensation each year. The Company currently matches 50% of its employees' contributions, up to 6% of their annual compensation. The Company's contributions are recorded as expense in the accompanying consolidated statements of operations and totaled $103,000, $41,000 and $58,000 for the years ended December 31, 2010, 2009 and 2008, respectively.

16. Segment Information

In the fourth quarter of 2009, the Company's wholly-owned Norwegian subsidiaries, Inovio AS and Inovio Tec AS were dissolved and operations transferred to the United States. Prior to the dissolution of these subsidiaries, the Company operated in one business segment in the United States and Europe. Revenues are attributable to the geographical area based on the location of the customer. During the year ending December 31, 2010, all revenues were attributable to the United States. During the year ending December 31, 2009, revenues in Europe and the United States totaled $57,000 and $9.1 million, respectively. During the year ending December 31, 2008, revenues in Europe and the United States totaled $285,000 and $1.8 million, respectively. As of December 31, 2010 and 2009 all long-lived assets totaling $21.3 million and $23.1 million, respectively, exist within the United States. Prior to the dissolution of our Norwegian operations, long-lived assets within the United States consisted primarily of patents and other intellectual property and outside the United States consisted primarily of goodwill and intangible assets. As of December 31, 2008, long-lived assets in Europe and the United States totaled $7.1 million and $2.7 million, respectively.

17. Related Party Transactions

The Company conducts transactions with its affiliated entity, VGX Int'l (See Note 13).

For the year ended December 31, 2010 and 2009, the Company recognized revenue from VGX Int'l of $381,000 and $59,000, respectively, which consisted of licensing fees, device lease and other fees. Operating expenses related to VGX Int'l for the year ended December 31, 2010 include $3.4 million related to manufacturing and engineering services. Operating expenses related to VGX Int'l for the year ended December 31, 2009 include $1.7 million related to manufacturing and engineering services as well as $56,000 for regulatory and technical support and other consulting services received. At December 31, 2010 and 2009 we had an accounts receivable balance of $72,000 and $59,000, respectively, from VGX Int'l and its subsidiaries.

For the years ended December 31, 2010 and 2009, the Company received sublease income from VGX Int'l of $232,000 and $126,000, respectively, for the facility in The Woodlands, TX, which offset the Company's lease expense.

On March 24, 2010, the Company entered into a Collaboration and License Agreement (the "Agreement") with VGX Int'l. Under the Agreement, the Company granted VGX Int'l an exclusive license to Inovio's SynCon ™ universal influenza vaccine delivered with electroporation to be developed in certain countries in Asia (the "Product"). As consideration for the license granted to VGX Int'l, the Company received payment of $3.0 million, and will receive research support, annual license maintenance fees and royalties on net product sales. The $3.0 million has been recorded as deferred revenue from affiliated entity, and will be recognized as revenue over the eight year expected period of the Company's performance obligation. In addition, contingent upon achievement of clinical and regulatory milestones, the Company will receive development payments over the term of the Agreement. The Agreement also provides Inovio with exclusive rights to supply devices for clinical and commercial purposes (including single use components) to VGX Int'l for use in the Product. The term of the Agreement commenced upon execution and will extend on a country by country basis until the last to expire of all Royalty Periods for the territory (as such term is defined in the Agreement) for any Product in that country, unless the Agreement is terminated earlier in accordance with its provisions as a result of breach, by mutual agreement, or by VGX Int'l's right to terminate without cause upon prior written notice.

As of December 31, 2010, Bryan Kim, the Company's vice president of Asian operations, constitutes one of the six members of VGX Int'l's board of directors and receives customary compensation from VGX Int'l for his service in such capacity. Bryan Kim currently serves as the president and chief executive officer of VGX Int'l. In September 2010, Young Park, a member of VGX Int'l's board of directors, terminated his employment with the Company as general counsel.

In August 2010, Dr. J. Joseph Kim, the Company's CEO, resigned from his position on the VGX Int'l board of directors. Dr. Kim previously served as chief executive officer of VGX Int'l prior to the Company's acquisition of VGX Pharmaceuticals, Inc. in June 2009.

18. Supplemental Disclosures of Cash Flow Information

	Year ended December 31, 2010	Year ended December 31, 2009	Year ended December 31, 2008
Supplemental schedule of financing activities:			
Interest paid	$ 61,152	$ 166,178	$ 31,170
Supplemental schedule of non-cash activities:			
Issuance of common stock and stock options and warrants assumed in connection with acquisition of VGX Pharmaceuticals, Inc.	$ —	$31,293,226	$ —
Conversion of long-term debt and accrued interest to common stock.	$ —	$ 4,830,715	$ —
Conversions of preferred stock to common stock	$ —	$ 66	$ 113
Leasehold improvements financed by landlord	$ —	$ —	$ 35,211

19. Quarterly Financial Information (Unaudited)

The following unaudited quarterly financial information reflects all normal recurring adjustments, which are, in the opinion of management, necessary for a fair statement of the results of the interim periods. The four quarters for per share figures may not add for the year because of the different number of shares outstanding during the year. The results of operations for any period are not necessarily indicative of the results to be expected for any future period. Summarized unaudited quarterly data for the years ended December 31, 2010 and 2009, are as follows:

	Quarter Ended December 31, 2010	Quarter Ended September 30, 2010	Quarter Ended June 30, 2010	Quarter Ended March 31, 2010
Consolidated Statement of Operations:				
Revenue:				
License fee and milestone payments	$ 145,841	$ 133,080	$ 174,691	$ 73,610
Revenue under collaborative research and development arrangements	—	—	—	—
Grants and miscellaneous revenue	2,214,073	1,143,463	960,168	1,299,779
Total revenue	2,359,914	1,276,543	1,134,859	1,373,389
Operating Expenses:				
Research and development	4,491,715	2,951,067	3,083,229	2,730,595
General and administrative	3,148,516	2,881,994	3,027,593	3,050,158
Total operating expenses	7,640,231	5,833,061	6,110,822	5,780,753
Loss from operations	(5,280,317)	(4,556,518)	(4,975,963)	(4,407,364)
Interest income/(expense), net	11,645	14,714	13,594	34,561
Other income/(expense), net	249,884	522,760	676,179	1,027,993
(Loss)/gain from investment in affiliated entity	(1,290,641)	2,604,311	(3,327,758)	1,044,174
Net loss	$ (6,309,429)	$ (1,414,733)	$ (7,613,948)	$ (2,300,636)
Net loss (gain) attributable to non-controlling interest	15,905	4,585	(2,490)	6,950
Net loss attributable to Inovio Pharmaceuticals, Inc.	$ (6,293,524)	$ (1,410,148)	$ (7,616,438)	$ (2,293,686)
Loss per common share—basic and diluted:				
Net loss attributable to Inovio Pharmaceuticals, Inc. stockholders	$ (0.06)	$ (0.01)	$ (0.07)	$ (0.02)
Weighted average number of common shares—basic and diluted	104,302,170	102,928,096	102,811,417	102,757,083

	Quarter Ended December 31, 2009	Quarter Ended September 30, 2009	Quarter Ended June 30, 2009	Quarter Ended March 31, 2009
Consolidated Statement of Operations:				
Revenue:				
License fee and milestone payments	$ 297,598	$ 2,143,239	$ 2,275,374	$ 213,098
Revenue under collaborative research and development arrangements	(63,664)	32,885	102,317	54,458
Grants and miscellaneous revenue	2,378,677	1,470,337	113,898	101,894
Total revenue	2,612,611	3,646,461	2,491,589	369,450
Operating Expenses:				
Research and development	3,851,400	3,412,130	1,181,194	963,733
General and administrative	2,571,792	3,830,703	4,300,772	2,966,142
Total operating expenses	6,423,192	7,242,833	5,481,966	3,929,875
Loss from operations	(3,810,581)	(3,596,372)	(2,990,377)	(3,560,425)
Interest income/(expense), net	25,196	(26,620)	(29,931)	33,648
Other income/(expense), net	1,849,722	(2,903,174)	(267,678)	62,282
(Loss)/gain from investment in affiliated entity	(5,440,217)	3,564,283	(7,368,680)	—
Net loss	$ (7,375,880)	(2,961,883)	(10,656,666)	(3,464,495)
Net loss attributable to non-controlling interest	30,012	13,697	3,730	—
Net loss attributable to Inovio Pharmaceuticals, Inc.	$ (7,345,868)	$ (2,948,186)	$(10,652,936)	$ (3,464,495)
Loss per common share—basic and diluted:				
Net loss attributable to Inovio Pharmaceuticals, Inc. stockholders	$ (0.07)	$ (0.03)	$ (0.19)	$ (0.08)
Weighted average number of common shares—basic and diluted	102,417,873	93,909,945	57,303,620	44,035,480

20. Subsequent Events

In January 2011, the Company entered into investor purchase agreements with investors relating to the issuance and sale of (a) 21,130,400 shares of common stock, and (b) warrants to purchase a total of 10,565,200 shares of common stock with an exercise price of $1.40 per share, for an aggregate purchase price of approximately $24.3 million. The shares of common stock and warrants were sold in units, consisting of one share of common stock and a warrant to purchase 0.50 of a share of common stock, at a purchase price of $1.15 per unit. The Warrants have a five-year term from the date of issuance and are first exercisable commencing on the 180th day after the date of issuance. The Company may call the warrants if the closing bid price of the common stock has been at least $2.80 over 20 trading days and certain other conditions are met. The Company received net proceeds from the transaction of approximately $23.0 million, after deducting the placement agent's fee and estimated offering expenses payable by the Company.

Between January 1, 2011 and January 14, 2011 the Company sold an additional 1,028,905 shares of common stock under its At-The-Market Equity Distribution Agreement for net proceeds of $1.4 million, after deducting commissions and other fees.

In March 2011, the Company announced the sale to OncoSec Medical Inc. of certain non-DNA vaccine technology and intellectual property relating to electroporation technology useful for electrochemical and cytokine based immune therapies for treating solid tumors.

The President and Chief Executive Officer of OncoSec previously served as the Company's Vice President of Finance and Operations. Additionally, the Company's Executive Chairman also serves as OncoSec's Non-executive Chairman.

Exhibit 10.5

EMPLOYMENT AGREEMENT

This Employment Agreement (the " Agreement "), dated as of December 27, 2010 is made by and between Inovio Pharmaceuticals, Inc., a Delaware corporation having offices at 1787 Sentry Parkway West, Bldg 18, Suite 400, Blue Bell PA 19422 (the " Company "), and Peter Kies, having residence at 3657 Tierra De Dios, Escondido, California 92025 (" Executive ").

R E C I T A L S

WHEREAS , the Company desires to employ Executive and to have the benefit of his skills and services, and Executive desires to accept employment with the Company, on the terms and conditions set forth herein; and

WHEREAS , as a condition to his employment by the Company, Executive agrees to execute and shall be bound by the terms and conditions of the Proprietary Information, Invention, and Non-Compete Agreement (the " Non-Compete Agreement ") attached hereto as Exhibit A , and the Confidentiality and Non-Disclosure Agreement (the "Confidentiality Agreement"), attached hereto as Exhibit B .

NOW, THEREFORE , in consideration of the mutual promises, terms, covenants and conditions set forth herein and in the Non-Compete Agreement, and the performance of each, the parties hereto, intending legally to be bound, hereby agree as follows:

1. Employment; Term .

a. The Company hereby agrees to employ Executive as Chief Financial Officer, and Executive hereby agrees to accept such employment with the Company in accordance with the terms and conditions of this Agreement.

b. The " Term " of this Agreement shall commence on the date hereof (the " Commencement Date ") and shall continue in effect until terminated as provided in Section 7 below.

2. Position and Duties .

a. The Company agrees to employ Executive throughout the Term as Chief Financial Officer of the Company with such responsibilities, duties and authority as are assigned to him by the Chief Executive Officer of the Company or his designee.

b. Executive shall faithfully devote his full business/working time, attention and energy to the business and affairs of the Company and the performance of his duties hereunder and to use reasonable efforts to perform such responsibilities faithfully and efficiently.

c. Without limiting the generality of the foregoing paragraph, during the Term, upon prior written consent of the Chief Executive Officer of the Company, Executive shall be permitted to serve on other Boards of Directors, professional associations and otherwise be involved with any family business or trust to the extent that, in the reasonable judgment of the Chief Executive Officer, such other business pursuits and activity do not materially (i) interfere

with Executive's ability to discharge Executive's duties and responsibilities to the Company, whether or not such activity is pursued for gain, profit or other pecuniary advantage, or (ii) cause Executive to violate any provision of the Non-Compete Agreement or the Confidentiality Agreement.

3. Compensation .

a. Executive shall be entitled to receive as compensation for his employment a base annual salary at a rate of $230,000 per annum (the " Base Salary "), which shall be paid to Executive by the Company or any of its affiliates in accordance with the Company's standard payroll practices, as in effect from time to time.

b. Increases in the Base Salary shall be reviewed annually by the Company's Board of Directors (the " Board ") or its Compensation Committee during the Term, and any such increases will be at the Board's or Compensation Committee's sole discretion and will otherwise be consistent with the Company's annual policies and budget for payroll increases.

4. Bonus .

During the Term, Executive shall be eligible to receive an incentive cash bonus up to the amount, based upon the criteria, and payable at such times, as may be determined by the Board or its Compensation Committee. The amount shall be determined by the Board or Compensation Committee, in its sole and absolute discretion, which shall be binding and final, and shall be paid in a one-time lump sum payment (less payroll taxes). To the extent that such cash bonus is to be determined in light of financial performance during a specified fiscal period and the Agreement commences on a date after the start of such fiscal period, any cash bonus payable in respect of such fiscal period's results may be prorated. In addition, if the period of Executive's employment hereunder expires before the end of a fiscal period, and if Executive is eligible to receive a cash bonus at such time (such eligibility being subject to the restrictions set forth in Section 7 below), any cash bonus payable in respect of such fiscal period's results may be prorated. Notwithstanding the foregoing, all annual bonuses shall be paid within two and one-half months after the close of each year.

5. Benefits; Stock Options .

In addition to the salary and cash bonus referred to above, Executive shall be entitled during the Term to participate in such employee benefits plans or programs of the Company, and shall be entitled to such other fringe benefits, as are from time to time adopted by the Board and made available by the Company generally to employees of Executive's position, tenure, salary, and other qualifications. Without limiting the generality of the foregoing, Executive shall be eligible for such awards and benefits, if any, under the Company's employee benefits plans or programs as shall be granted to Executive in the sole discretion of the Board or its Compensation Committee and as shall be provided pursuant to the terms of the plans or programs. Executive acknowledges and agrees that the Company does not guarantee the adoption or continuance of any particular employee benefits plan or program or other fringe benefits during the Term, and participation by Executive in any such plan or program shall be subject to the rules and regulations applicable thereto.

6. Expenses .

The Company will reimburse Executive, in accordance with the practices in effect from time to time for other officers or staff personnel of the Company, for all reasonable and necessary business and traveling expenses and other disbursements incurred by Executive for or on behalf of the Company in the performance of Executive's duties hereunder, upon presentation by Executive to the Company of appropriate vouchers and supporting documentation.

7. Termination .

Executive's employment by the Company pursuant hereto is subject to termination as follows:

a. Death or Disability . Executive's employment shall be deemed to terminate automatically on the date of Executive's death, and the Company may by written notice to Executive terminate Executive's employment on account of his Total Disability effective as of the date of such notice. For purposes hereof, Executive shall be deemed to experience a " Total Disability " if Executive is considered totally disabled under any group disability plan maintained by the Company and in effect at that time, or in the absence of any such plan, Executive shall be deemed to experience a Total Disability if he shall have been unable to perform his duties hereunder on a full-time basis for 90 consecutive days or longer, or for shorter periods aggregating 120 days in any 360-day period. In the event of any dispute under this Section 7(a), Executive shall submit to a physical examination by a licensed physician mutually satisfactory to the Company and Executive, the cost of such examination to be paid by the Company, and the determination of such physician shall be determinative. In the case of a Total Disability, until the Company shall have terminated Executive's employment hereunder in accordance with the foregoing, Executive shall be entitled to receive compensation provided for herein notwithstanding any such Total Disability. In the event of the termination of Executive's employment on account of his death or Total Disability, neither Executive nor his personal representative will have any rights or claims against the Company under this Agreement except as follows:

(i) Executive (or his estate or representative, as applicable) shall be paid (A) any unpaid portion of his Base Salary computed on a pro rata basis through the date of his termination and (B) any unreimbursed expenses;

(ii) All other of Executive's accrued but unpaid rights shall be as determined under any incentive compensation, stock option, retirement, employee welfare or other employee benefits plan or program of the Company in which Executive is then participating at the time of his termination; and

(iii) in the case of Executive's Total Disability only, (A) the Company shall continue Executive's medical benefits coverage existing at the time of his termination for as long as permissible under the Company's health benefits policies (not to exceed 60 days) and the Company further agrees to pay Executive's COBRA premiums for six months thereafter, with such premiums to provide for coverage at the same level and subject to the same terms and conditions (including, without limitation, any applicable co-pay obligations of Executive, but

excluding any applicable tax consequences for Executive) as in effect for Executive at the time of termination, and (B) Executive shall further receive a lump-sum payment, within 30 days after the effective date of termination, equal to the aggregate amount of Executive's Base Salary as in effect immediately prior to such termination that would be payable over a period of six months following the effective date of such termination.

b. Involuntary Termination for Cause . In the event the Company terminates Executive's employment for Cause (as such term is defined below), such termination shall be effective immediately upon notice thereof, in which case Executive will have no rights or claims against the Company under this Agreement except as follows:

(i) Executive shall be paid (A) any unpaid portion of his Base Salary computed on a pro rata basis through the date of his termination and (B) any unreimbursed expenses; and

(ii) All other of Executive's accrued but unpaid rights shall be as determined under any incentive compensation, stock option, retirement, employee welfare or other employee benefits plan and program of the Company in which Executive is then participating at the time of his termination.

" Cause " shall mean: (1) conviction of Executive of any felony; (2) participation by Executive in any fraud or act of dishonesty against the Company; (3) material violation by Executive of (i) any contract between the Company and Executive, or (ii) any statutory, contractual or common law duty of Executive to the Company; (4) conduct of Executive that, based upon a good faith and reasonable factual investigation and determination by the Board, demonstrates Executive's gross unfitness to serve; or (5) the continued, willful refusal or failure by Executive to perform any material duties reasonably requested by the Board or the Chief Executive Officer.

c. Involuntary Termination Without Cause . The Company may terminate Executive's employment, other than on account of death, Total Disability or for Cause, on 30 days' prior written notice, in which case Executive will have no rights or claims against the Company under this Agreement except as follows:

(i) Executive (or his estate or representative, as applicable) shall be paid (A) any unpaid portion of his Base Salary computed on a pro rata basis through the date of his termination, and (B) any unreimbursed expenses;

(ii) All other of Executive's accrued but unpaid rights shall be as determined under any incentive compensation, stock option, retirement, employee welfare or other employee benefits plan and program of the Company in which Executive is then participating at the time of his termination;

(iii) Executive shall receive severance payments in the form of monthly payments of Executive's Base Salary (as in effect immediately prior to such termination) for a period of twelve months following the effective date of such termination; and

(iv) The Company shall pay Executive's COBRA premiums for twelve months thereafter, with such premiums to provide for coverage at substantially the same level and subject to the same terms and conditions (including, without limitation, any applicable co-pay obligations of Executive, but excluding any applicable tax consequences for Executive) as in effect for Executive at the time of termination.

d. Voluntary Termination For Good Reason . Executive may terminate his employment for good reason (" Termination For Good Reason ") by providing 30 days' prior written notice to the Company of a breach constituting Good Reason, which notice shall be provided within 45 days after the initial existence of the breach, and further provided that such breach is not cured in all material respects to the reasonable satisfaction of Executive within 30 days after such notice. In the event of Termination for Good Reason, Executive shall be entitled to receive the payments and other rights provided in Section 7(c) hereof. For purposes of this Agreement, termination for " Good Reason " shall mean voluntary termination by Executive of his employment with the Company based on one of the following events:

(i) the material diminution in Executive's position, title, responsibilities or authority from those in effect at the Commencement Date; provided, however, that a material diminution shall not be deemed to have occurred upon a change of control of the Company solely by virtue of the Company's having been acquired and made part of a larger organization;

(ii) a relocation of Executive's principal executive offices more than fifty miles from its location at the Commencement Date; or

(iii) the breach by the Company of any of its material obligations under this Agreement;

e. Other Voluntary Termination . Executive may otherwise terminate his employment without Good Reason upon 30 days' prior written notice to the Company, in which case Executive (or his estate or representative, as applicable) shall be paid (A) any unpaid portion of his Base Salary on a pro rata basis through the date of the termination, and (B) any unreimbursed expenses.

f. Section 409A . The Base Salary continuation set forth in Sections 7 (a), (c) and (d) hereof shall be intended to satisfy either (i) the safe harbor set forth in the regulations issued under Section 409A (as defined below) of the Internal Revenue Code of 1986, as amended (the "Code") (Treas. Regs. 1.409A-1(n)(2)(ii)), or (ii) be treated as a Short-term Deferral as that term is defined under Section 409A (Treas. Regs. 1.409A-1 (b)(4)). To the extent that such continuation payments exceed the applicable safe harbor amount or do not constitute a Short-term Deferral, the excess amount shall be treated as deferred compensation under Section 409A and as such shall be payable pursuant to the following schedule: such excess amount shall be paid via standard payroll in periodic installments in accordance with the Company's usual practice for its senior executives.

Notwithstanding any provision in this Agreement to the contrary, in the event that Executive is a "specified employee" as defined in Section 409A, any continuation payment, continuation benefits or other amounts payable under this Agreement that would be subject to the

special rule regarding payments to "specified employees" under Section 409A(a)(2)(B) of the Code shall not be paid before the expiration of a period of six months following the date of Executive's termination of employment or before the date of Executive's death, if earlier.

g. Forfeiture of Rights . In the event that, subsequent to the termination of Executive's employment hereunder, Executive breaches any of the provisions of the Non-Compete Agreement or Confidentiality Agreement in any material respect, all payments and benefits to which Executive may otherwise have been entitled to pursuant to this Section 7 hereof shall immediately terminate and be forfeited.

h. Release . Executive shall not be entitled to any compensation under this Section 7 unless Executive executes and delivers to the Company a Separation of Employment Agreement and General Release (the " Release ") in form and substance satisfactory to the Company, by which Executive releases the Company from any obligations and liabilities of any type whatsoever, except for the Company's obligation to provide the compensation and benefits specified in this Section 7. The parties hereto acknowledge that the payments to be provided under this Section 7 are to be provided in consideration for the Release.

8. Remedies .

In addition to other remedies provided by law or equity, upon a breach by Executive of any of the covenants contained herein, in the Non-Compete Agreement or in the Confidentiality Agreement, the Company shall be entitled to have a court of competent jurisdiction enter an injunction against Executive enjoining Executive and prohibiting any further breach of the covenants contained herein. Executive acknowledges that a breach or threatened breach by Executive of the provisions of this Agreement will cause irreparable damage to the Company because Executive's services to be performed hereunder are of a unique, special and extraordinary character. Thus, the Company shall be entitled to injunctive relief without the necessity of proving actual damages and the Company shall not be required to post a bond or other security in support of such injunctive relief.

9. Arbitration .

Any claim, dispute or controversy arising out of or in connection with Executive's employment by the Company, his separation from the Company, this Agreement, or any breach thereof, shall be arbitrated by the parties before a sole neutral arbitrator (who shall have substantial experience in the pharmaceutical and life sciences industry) conducted in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association then in effect. The claims subject to mandatory arbitration under the terms of this agreement include, but are not limited to, claims that have been or could be asserted under: (a) the common law of the State of California; (b) the California Labor Code; (c) Title VII of the Civil Rights act of 1964, as amended, 42 U.S.C. § 2000e *et seq* .; (d) the California Fair Employment and Housing Act, Cal. Govt. Code § 12900 *et seq* .; (e) the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA), as amended, 26 U.S.C. § 4980B; (f) the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 621 *et seq.* , including the Older Workers Benefit Protection Act; (g) the Employee Retirement Income Security Act of 1974, as amended, 29 U.S.C. § 1001 *et seq* .; (h) the Civil Rights Act of 1866, as amended, 42

U.S.C. § 1981 *et seq* .; (i) the Fair Labor Standards Act, 29 U.S.C. § 201 *et seq* .; (j) the Americans with Disabilities Act, 42 U.S.C. § 12101 *et seq* .; (k) the Civil Rights Act of 1991, Public Law 102-166 (105 Stat. 1071); (l) the Wage Orders of the California Industrial Welfare Commission; (m) any other federal, state or local law, constitution, regulation, ordinance, decision or common law claim concerning employment discrimination or termination of employment; (n) any and all claims for personal injury, emotional distress, libel, slander, defamation, and other physical, economic, or emotional injury; and (o) all claims for attorney's fees and costs.

The arbitrator shall have the authority to order discovery sufficient for both parties to adequately arbitrate any and all claim(s) and defense (s) at issue. Such discovery shall include access to relevant documents and witnesses but shall not have the authority to add to, detract from or modify any provision hereof nor to award damages or other remedies not otherwise available under statute(s), contract(s) or common law relevant to the claim(s) and defense(s) at issue. Following the close of all evidence at the conclusion of the arbitration hearing, the neutral arbitrator shall issue a written award that reveals his or her essential findings and conclusions. The neutral arbitrator's decision shall be final and binding. Judgment may be entered on the arbitrator's award in any court having jurisdiction. The direct expense of any arbitration proceeding shall be borne by the Company. Each party shall bear its own attorneys' fees unless such fees are awarded as a measure of damages under the applicable contract or statute at issue. Such arbitration hearing shall take place in Montgomery County, Pennsylvania at a location and date mutually agreeable to the parties. The parties hereto consent to the jurisdiction of the state and federal courts located in the Commonwealth of Pennsylvania with respect to any action arising under this Agreement. Notwithstanding the foregoing, the Company shall be entitled to seek injunctive or other equitable relief, as contemplated by Section 8 hereof, from any court of competent jurisdiction, without the need to resort to arbitration.

10. Assignment; Binding Nature .

This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors, heirs (in the case of Executive) and permitted assigns. No rights or obligations of the Company under this Agreement may be assigned or transferred by the Company except that such rights or obligations may be assigned or transferred to the successor of the Company or its business if the assignee or transferee assumes all of the liabilities, obligations and duties of the Company, as contained in this Agreement, either contractually or as a matter of law. If any such successor of the Company or its business does not agree to so assume such liabilities, obligations and duties, Executive may immediately resign, which shall be deemed a Termination For Good Reason under the provisions of this Agreement. No rights or obligations of Executive under this Agreement may be assigned or transferred by Executive other than Executive's rights to compensation and benefits, which may be transferred only by will or operation of law, except as otherwise specifically provided or permitted hereunder.

11. Notice .

Any notice which a party is required or may desire to give pursuant to this Agreement shall be given in writing by personal delivery, by facsimile transmission, by registered or

certified mail, return receipt requested, postage prepaid, or by overnight courier, at the following addresses:

If to the Company:

Inovio Pharmaceuticals, Inc.
1787 Sentry Parkway West
Building 18, Suite 400
Blue Bell, PA 19422
Attention: Chief Executive Officer

If to Executive:

Peter Kies
3657 Tierra De Dios
Escondido, California 92025

Any notice personally delivered shall be deemed received when given, or if given by facsimile or overnight courier shall be deemed received on the next business day and any notice mailed shall be deemed received on the third business day thereafter.

12. Entire Agreement .

This Agreement and the Non-Compete Agreement (Exhibit A) and the Confidentiality Agreement (Exhibit B) constitute the complete agreements and understandings between the Company and Executive concerning Executive's employment by the Company, and supersede any and all previous agreements or understandings concerning such employment, whether written or oral, between Executive and the Company.

13. Modification .

This Agreement may not be waived, amended or modified without the express written consent of the party against whom enforcement of such Agreement is sought.

14. Waiver .

Except as set forth herein, no delay or omission to exercise any right, power or remedy accruing to any party shall impair any such right, power or remedy or shall be construed to be a waiver of or an acquiescence to any breach hereof. No waiver by either party of any breach by the other party of any condition or provision contained in this Agreement to be performed by such other party shall be deemed a waiver of a similar or dissimilar condition or provision at the same or any prior or subsequent time. Any waiver must be in writing and signed by Executive and the Chief Executive Officer or other duly authorized officer of the Company.

17. Section 409A .

It is intended that this Agreement be drafted and administered in compliance with section 409A of the Code, including, but not limited to, any future amendments to Code section 409A,

and any other Internal Revenue Service or other governmental rulings or interpretations (collectively, " Section 409A ") issued pursuant to Section 409A so as not to subject Executive to payment of interest or any additional tax under Section 409A. The parties intend for any payments under this Agreement to either satisfy the requirements of Section 409A or to be exempt from the application of Section 409A, and this Agreement shall be construed and interpreted accordingly. In furtherance thereof, if payment or provision of any amount or benefit hereunder that is subject to Section 409A at the time specified herein would subject such amount or benefit to any additional tax under Section 409A, the payment or provision of such amount or benefit shall be postponed to the earliest commencement date on which the payment or provision of such amount or benefit could be made without incurring such additional tax. In addition, to the extent that any Internal Revenue Service guidance issued under Section 409A would result in Executive being subject to the payment of interest or any additional tax under Section 409A, the parties agree, to the extent reasonably possible, to amend this Agreement in order to avoid the imposition of any such interest or additional tax under Section 409A, which amendment shall have the minimum economic effect necessary to the Executive and shall not result in any additional cost to the Company, unless it agrees otherwise to incur such cost, and shall be reasonably determined in good faith by the Company and Executive.

18. Invalidity of Any Provision .

If any portion of this Agreement is held invalid or inoperative, the other portions of this Agreement shall be deemed valid and operative and, so far as is reasonable and permitted by the law, effect shall be given to the intent manifested by the portion held invalid or inoperative.

19. Applicable Law .

This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, without regard to the principles of conflict of laws thereof.

20. Counterparts .

This Agreement may be executed simultaneously in any number of counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same agreement.

21. Headings .

The Section headings contained in this Agreement are for reference purposes only and will not affect in any way the meaning or interpretation of this Agreement.

22. Binding Effect .

The provisions of this Agreement will be binding upon, and will inure to the benefit of, the respective heirs, legal representatives and successors of the parties thereto.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have executed this Employment Agreement as of the date first written above.

INOVIO PHARMACEUTICALS, INC.

By: /s/ J. Joseph Kim, Ph.D.
Name: J. Joseph Kim, Ph.D.
Title: President and CEO

Date: 12/27/10

EXECUTIVE

/s/ Peter Kies
Name: Peter Kies

Date: 12/27/10

Exhibit 21.1

INOVIO PHARMACEUTICALS, INC.
Subsidiaries

Subsidiary Name(1)	Jurisdiction of Organization
Genetronics, Inc.	Delaware
VGX Pharmaceuticals, LLC	Delaware
VGX Animal Health, Inc	Delaware
Inovio Asia Pte. Ltd.	Singapore

(1) In accordance with Instructions (ii) to Exhibit (21) to the Exhibit Table in Item 601 of Regulation S-K, Registrant has omitted from the above table one of its subsidiaries because such omitted subsidiary does not constitute a significant subsidiary of registrant as of the end of the year covered by this report.

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements (Form S-3 Nos. 333-76738, 333-108752, 333-111287, 333-116696, 333-118187, 333-123619, 333-131332, 333-134084, 333-140119, 333-160123 and 333-160126; Form S-8 Nos. 333-58168, 333-100077, 333-120061, 333-136126, 333-142938, 333-150769, 333-156035, 333-161559 and 333-166906) of Inovio Pharmaceuticals, Inc. and in the related Prospectuses, of our reports dated March 16, 2011, with respect to the consolidated financial statements of Inovio Pharmaceuticals, Inc., and the effectiveness of internal control over financial reporting of Inovio Pharmaceuticals, Inc., included in this Annual Report (Form 10-K) for the year ended December 31, 2010.

/s/ Ernst & Young LLP

San Diego, California
March 16, 2011

Exhibit 31.1

Certification of CEO Pursuant to
Securities Exchange Act Rules 13a-15(e) and 15d-15(e)
as Adopted Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, J. Joseph Kim, certify that:

1. I have reviewed this annual report on Form 10-K of Inovio Pharmaceuticals, 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 15(d)-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 16, 2011

/s/ J. J OSEPH K IM
J. Joseph Kim
President, Chief Executive Officer and Director

Exhibit 31.2

Certification of CFO Pursuant to
Securities Exchange Act Rules 13a-15(e) and 15d-15(e)
as Adopted Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Peter Kies, certify that:

1. I have reviewed this annual report on Form 10-K of Inovio Pharmaceuticals, 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 15(d)-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

Date: March 16, 2011

/s/ PETER KIES
Peter Kies
Chief Financial Officer

Exhibit 32.1

Certification Pursuant to
18 U.S.C. Section 1350,
As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report of Inovio Pharmaceuticals, Inc. (the "Company") on Form 10-K for the year ending December 31, 2010 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned, in the capacities and on the date indicated below, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to his knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 16, 2011

/s/ J. Joseph Kim

J. Joseph Kim
President, Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Peter Kies

Peter Kies
Chief Financial Officer
(Principal Financial and Accounting Officer)