


ICAGEN

ION CHANNEL ADVANCES

# 2009 ANNUAL REPORT


Dear Fellow Shareholders:

During the past year, we successfully established clinical proof-of-concept for our novel drug candidate, ICA-105665, in the treatment of epilepsy. This was a significant accomplishment, which represented an important milestone both for Icagen and for our industry, since we believe this is the first truly selective KCNQ agonist to show efficacy in patients with epilepsy. In this program, we also identified back-up compounds, which makes this area of research focus a well-rounded franchise. Additionally, we have made substantial progress in the development of our pain platform through the maturation of our research and preclinical programs for TRPA1 and sodium channels, promising targets for the treatment of inflammatory, neuropathic and other types of pain.

The lead compound in our epilepsy program, ICA-105665, is a potent and selective opener of certain subtypes of KCNQ potassium channels. These channels have been validated by both genetic and physiologic evidence as playing an important role in certain conditions characterized by excessive neuroexcitability, such as epilepsy. Preclinical efficacy data also suggest that agonists for these channels may find utility in other disorders of neuronal excitability such as pain.

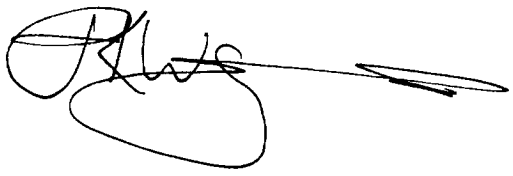
Given our recent success in a Phase IIa trial in patients with photosensitive epilepsy, we plan to initially continue the clinical development of ICA-105665 in epilepsy. Epilepsy represents a substantial unmet medical need, with approximately six million patients in the major industrialized economies, approximately 30% of whom are refractory to currently available therapies. Beyond this disorder, many anti-epileptic drugs have subsequently been shown to be effective in conditions such as pain, migraine headache, anxiety and bipolar disorder. Based upon its demonstrated ability to reduce neuronal excitability in photosensitive epilepsy and our extensive preclinical data set in a variety of pain models, we believe that despite negative results in an initial exploratory pain study, additional testing in pain and certain other indications is warranted, and may well represent a broadening of the market opportunity for ICA-105665.

Over the last three years, Icagen has continued to strengthen its research programs and technology platform, especially in epilepsy and in inflammatory, neuropathic and chronic/serious pain disorders. We are now able to complete all essential drug discovery and early proof-of-concept clinical steps in these complex and crucial disease areas, as can be seen through the success of our KCNQ program. Another example of this s ssful platform is illustrated by a review of our collaboration with Pfizer. In this collaboration, which is focused on three sodium channel targets for pain, we have successfully solved one of the key challenges for sodium channels by identifying potent and subtype-selective Nav1.7 (SCN9A) sodium channel inhibitors with drug-like properties. While sodium channel blockers have been used for many years in the treatment of pain, the currently available drugs are not selective among sodium channel targets, and their use is therefore limited by their significant side effects. We believe that subtype-selective sodium channel blockers are the subject of intense interest within the pharmaceutical industry, and we are very pleased to have established an extensive intellectual property estate in this field. Along with Pfizer, we believe that we are at the forefront of the scientific effort to identify new pain therapies directed at Nav1.7 and two other specific sodium channel targets.

As we continue to advance our internal research and clinical programs to create value for our shareholders, we also continue to seek revenue-generating and value- creating partnerships, such as our partnership with Pfizer. Additionally, Icagen's management team and its Board of Directors, with the assistance of experienced advisors, are actively pursuing the optimum strategy for the Company's shareholders, which may be a combination with another company having complementary skills and resources. We believe that we have built a world-class ion channel drug discovery company, and we remain confident in our ability to create value over the long-term for our shareholders.

Given the financial challenges that we face, as well as the difficult general economic conditions over the past eighteen months, we, as others, have taken measures to minimize expenses. Our clinical trials have been carefully designed and redesigned to provide valuable efficacy and safety data in a cost-effective manner. Moreover, we have identified cost-savings opportunities across the Company and have taken difficult measures, including a workforce reduction of approximately twenty percent, to better align our cost structure with our limited financial resources. We will continue to pursue the balance between value creation and conservative cash management in 2010 as we consider a range of potential strategic alternatives.

As always, I would like to thank our employees and our Board of Directors, who remain actively involved and strongly committed to the Company's success. We appreciate the continued confidence of these individuals and of our shareholders, whose support has made the accomplishments of the past year possible. We look forward to the coming years with enthusiasm.



P. Kay Wagoner, Ph.D.
*President and Chief Executive Officer*

# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**Washington, D.C. 20549**

# Form 10-K
**ANNUAL REPORT**
**PURSUANT TO SECTIONS 13 OR 15(d)**
**OF THE SECURITIES EXCHANGE ACT OF 1934**

**(Mark One)**

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

For the fiscal year ended: December 31, 2009

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

For the transition period from to
Commission file number: 001-34217

# Icagen, Inc.
**(Exact name of registrant as specified in its charter)**

| **Delaware** | **56-1785001** |
|---|---|
| **(State or other jurisdiction of incorporation or organization)** | **(I.R.S. Employer Identification No.)** |

**4222 Emperor Boulevard, Suite 350**
**Durham, North Carolina 27703**
**(Address of principal executive offices, including zip code)**

**Registrant's telephone number, including area code: (919) 941-5206**

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

| **Common Stock, $0.001 par value per share** | **The Nasdaq Global Market** |
|---|---|
| **(Title of class)** | **(Name of 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 of 1933, or the Securities Act. Yes ☐ No ☒.

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities 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, as amended, or the Exchange Act, 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☐ No ☐

Indicate by check mark 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 ☐ | Smaller Reporting Company ☒ |
| (Do not check if a smaller reporting company) | |

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

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant, as of June 30, 2009, was approximately $13,294,775 based on the closing sale price of the common stock on such date as reported on the Nasdaq Global Market. For purposes of the immediately preceding sentence, the term "affiliate" consists of each director, executive officer and greater than 10% stockholder of the registrant.

The number of shares of the registrant's common stock, $0.001 par value per share, outstanding on February 28, 2010 was 47,665,970.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's Definitive Proxy Statement for its 2010 Annual Meeting of Stockholders scheduled to be held on June 3, 2010, or the 2010 Proxy Statement, which will be filed with the Securities and Exchange Commission, or SEC, not later than 120 days after December 31, 2009, are incorporated by reference into Part III of this Annual Report on Form 10-K. With the exception of the portions of the 2010 Proxy Statement expressly incorporated into this Annual Report on Form 10-K by reference, such document shall not be deemed filed as part of this Annual Report on Form 10-K.

**ICAGEN, INC.**

**INDEX TO ANNUAL REPORT ON FORM 10-K**
**FOR THE FISCAL YEAR ENDED DECEMBER 31, 2009**

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K and the documents incorporated by reference in this Annual Report on Form 10-K contain forward-looking statements that involve substantial risks and uncertainties. In some cases you can identify these statements by forward-looking words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "should," "will," and "would," or similar words. You should read statements that contain these words carefully because they discuss future expectations, contain projections of future results of operations or of financial position or state other "forward-looking" information. The important factors listed below, as well as any cautionary language elsewhere in this Annual Report on Form 10-K, provide examples of risks, uncertainties and events that may cause our actual results to differ materially from the expectations described in these forward-looking statements. You should be aware that the occurrence of the events described in the "Risk Factors" section below and elsewhere in this Annual Report on Form 10-K could have an adverse effect on our business, results of operations and financial position.

Any forward-looking statements in this Annual Report on Form 10-K are not guarantees of future performance, and actual results, developments and business decisions may differ from those envisaged by such forward-looking statements, possibly materially. We disclaim any duty to update any forward-looking statements.

# PART I

## ITEM 1—BUSINESS

### Overview

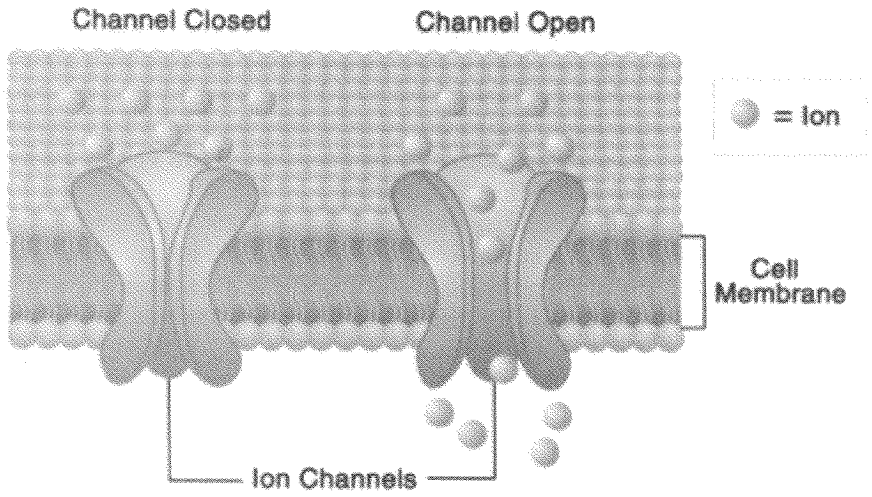
We are a biopharmaceutical company focused on the discovery, development and commercialization of novel orally-administered small molecule drugs that modulate ion channel targets. Ions are charged particles, such as sodium, potassium, calcium and chloride. Ion channels are protein structures found in virtually every cell of the human body. Ion channels span the cell membrane and regulate the flow of ions into and out of cells. There are currently over 35 drugs marketed by third parties for multiple indications that modulate ion channels according to data from IMS Health. We believe this demonstrates that ion channels are attractive drug targets.

Utilizing our proprietary know-how and integrated scientific and drug development capabilities, we have identified multiple drug candidates that modulate ion channels. Our most advanced program is ICA-105665 for epilepsy and pain, for which we have completed a proof-of-concept trial in epilepsy with positive results and a proof-of-concept trial in pain with negative results. We are also conducting ongoing drug discovery programs focused on new therapeutics for pain and inflammatory disorders. In each of these programs, we have identified small molecule compounds that have demonstrated activity on specific ion channels. When we tested these compounds in preclinical studies, including in some cases animal models, they showed desired activities and profiles, validating these ion channels as potential therapeutic targets for the particular indication. In addition to our internal programs, we have established a collaboration with Pfizer Inc focused on three sodium channel targets for the treatment of pain and related disorders. We plan to generate revenue from any product candidates that we successfully develop either through direct sales, collaboration arrangements with leading pharmaceutical and biotechnology companies or a combination of these approaches.

**Scientific Background**

***Ion Channels as Drug Targets***

Ions generally cannot move freely across cell membranes, but must enter or exit a cell through pores created by ion channels. Ion channels open and close, or gate, in response to particular stimuli, including ions, other cellular factors, changes in electrical voltage or drugs.




The concentration of specific ions in particular cells in the body is critically important to many vital physiological functions. Consequently, ion channels play a key role in a wide variety of processes in the human body, which can be broadly grouped into three categories:

- *Electrical impulse generation and conduction* along nerves in the central and peripheral nervous system, the heart and other organs;
- *Signal transduction* within and among cells, including immune system cells that, when activated, trigger an inflammatory response; and
- *Fluid balance* within cells and across cell membranes, including fluid balance in red blood cells, cells in the eye and other cells throughout the body.

Small molecule compounds have been shown to both activate and inhibit ion channels. As a result, ion channels represent an important class of targets for pharmaceutical intervention in a broad range of disease areas. Examples of currently marketed drugs that exert their effects through ion channel modulation include:

- *calcium channel blockers*, such as Norvasc and verapamil, which are used for the treatment of hypertension and various other cardiovascular disorders;
- *sodium channel blockers*, such as Lamictal, which is used for the treatment of epilepsy, and lidocaine, a local anesthetic; and
- *potassium channel blockers*, such as Glipizide, which is used in the treatment of diabetes.

Despite the number of successful ion channel drugs on the market today, the majority of these drugs were developed without prior knowledge of their mechanism of action. Only recently have drug researchers identified and cloned a substantial number of ion channel genes, enabling integration of genetic information with the drug discovery process and allowing for a more methodical and scientific approach to the identification and selection of both the ion channel target and potential drug.

We believe that many pharmaceutical and biotechnology companies historically have avoided drug discovery programs targeting ion channels due to significant technical challenges and complexities associated

with the structure and function of ion channels. Ion channel drug discovery is a complex endeavor that requires a comprehensive understanding of ion channel function. Ion channel drug discovery also requires specialized functional assays to characterize the interaction between a drug and an ion channel and determine the ability of a compound to modify the activity of an ion channel target, often across a range of physiologic conditions. Functional assays are difficult and time-consuming to develop, tend to be low throughput and require significant technical expertise. Ion channel drug discovery also requires expertise in electrophysiology to determine the effects of drugs on ion channel activity. Electrophysiology is the study of ion channel function and involves the measurement of the electrical current generated when ions flow through ion channel pores. For these reasons, we believe that the majority of the promising ion channel targets remain unexploited and that a significant opportunity exists for an integrated approach to ion channel drug discovery that can be applied across a wide spectrum of therapeutic areas.

***Ion Channel Complexity***

Ion channels are complex protein structures typically comprised of two or more subunits, or building blocks. These subunits associate to form a pore through which ions are able to pass when the channel is in the open state. Other subunits are important in determining whether an ion channel is gated open or closed or whether the specific ion channel is expressed in a specific cell, tissue or organ. Subunits are capable of associating with each other in multiple combinations, allowing for the number of ion channel drug targets to be substantially greater than the number of ion channel genes. We have identified and cloned over 300 human ion channel genes coding for these subunits.

Ion channels possess gating mechanisms which may cause the channel to undergo changes in shape or molecular arrangement, called conformational changes. These conformational changes may occur in response to particular stimuli, including ions, other cellular factors, and changes in electrical voltage or drugs. Conformational changes may expose additional sites on the channels that can be targeted for drug interactions. In studying the function of ion channels, it is important to understand the different channel conformational states so that potential drugs can be discovered and appropriately characterized.

Ion channels are classified into families based upon the type of ion or ions that pass through the channel and the gating mechanism. Within a given family, ion channels share similarities in structure and functional properties, facilitating the study of multiple channels within a family. Across different ion channel families, there may also be similarities in structure and functional properties, although to a lesser degree than within the same family. Despite the potential similarities, there are key areas on ion channels that allow for potent and selective drug interactions.

A comprehensive knowledge base that spans multiple ion channels and ion channel families enhances ion channel drug discovery because it enables identification of similarities and differences among ion channels. Similarities among channels are important because they can lead to the identification of related chemical structures that have activity against many related ion channels. These related chemical structures can then be modified to provide for the desired specificity against a particular ion channel target. Similarities among ion channels are also important because they can lead to side effects if a small molecule modulator is not appropriately targeted. Differences among ion channels are important because they provide the opportunity to develop specific, targeted therapies.

**Our Approach to Ion Channel Drug Discovery and Development**

Over the past decade, we have established an interdisciplinary environment that is designed to meet the challenges and complexities faced in ion channel drug discovery. Our capabilities include molecular biology and the use of complex functional assays, electrophysiology, medicinal and computational chemistry, bioanalytics, pharmacology and clinical development. We believe that this integrated set of capabilities enhances our ability to develop drug candidates that modulate ion channels for the treatment of a range of diseases with significant unmet medical need and commercial opportunity.

We utilize a target class approach to drug discovery. Whereas traditional drug discovery starts with the disease and seeks to identify potential intervention points, or drug targets, our target class approach starts with all potential ion channel targets and seeks to identify applications to the treatment of various diseases. We believe that our understanding of the ion channel genome and ability to apply this knowledge in a target class approach to drug discovery facilitates our identification of small molecule drug candidates with novel mechanisms of action and enhanced selectivity and specificity profiles. Moreover, because our drug discovery and development process screens for potential side effects at an earlier stage than some alternative approaches, we believe that this process enables us to identify small molecule drug candidates that may have a reduced risk of clinical failure and may shorten clinical development timelines.

Complementary to our target class approach is our expertise across the therapeutic areas that are the focus of our current research efforts. Not only do we have a deep understanding of the functional activity of our ion channel targets, but we also understand the role that these targets play in the relevant physiologic system. For example, much of our current research efforts are focused on disorders of the central and peripheral nervous system. To understand the role of ion channels in these systems and in the disease areas of interest to us, we have developed the capability to study our targets in a variety of *in vitro* and *in vivo* models. These models include cell-based assays, tissue-based assays, and complex animal models of seizure and pain disorders. We combine our expertise in ion channel targets with our capabilities in systems-based biology and understanding of physiologic systems to identify attractive opportunities for therapeutic intervention.

Using our drug discovery and development approach, we have:

- developed a clinical stage program with what we believe is a novel chemical entity;
- established an ongoing collaboration with a leading pharmaceutical company; and
- developed ongoing research stage programs spanning multiple and diverse therapeutic areas and providing us with a pipeline of compounds that modulate ion channel targets.

**Our Strategy**

Our goal is to become a fully-integrated biopharmaceutical company and a leader in the discovery, development and commercialization of novel small molecule drugs that modulate ion channel targets and address disease areas with significant unmet medical need and commercial potential. We intend to achieve this goal through the execution of our strategy, key elements of which are as follows:

***Build and advance our product candidate pipeline.*** Through our ion channel drug discovery and development programs, we have created a pipeline of drug candidates that address diseases with significant unmet medical need and commercial potential across a range of therapeutic areas. Either through our internal efforts or through one or more collaborations, we plan to pursue the development and commercialization of these drug candidates, including ICA-105665 and the lead compounds that we are developing for the treatment of epilepsy and pain. We believe that the breadth of our capabilities in ion channel drug discovery technology will enable us to continue to identify and develop additional drug candidates on an efficient and rapid basis. In addition to developing drug candidates internally, we continue to evaluate opportunities to in-license promising compounds and technologies.

***Strengthen and expand our core ion channel drug discovery technologies and development capabilities.*** All of our drug candidates and research programs have resulted from our core ion channel drug discovery technologies. We have steadily built these technologies, which span the key disciplines of biology, chemistry and pharmacology, over a number of years. We intend to continue to invest in these core technologies, including our ion channel focused compound library, as the key to our future research programs and drug candidates. Over the longer term, we also plan to augment our existing development team by adding personnel with experience in drug safety, regulatory affairs, statistical methods, project management and medical affairs.

***Establish strategic alliances with leading pharmaceutical and biotechnology companies***. We plan to selectively enter into new strategic alliances with leading pharmaceutical and biotechnology companies to assist us in advancing our drug discovery and development programs. We expect that these alliances will provide us with access to the therapeutic area expertise and research, development and commercialization resources of our collaborators as well as augment our financial resources. We believe that our expertise in ion channel drug discovery and development helps us to secure collaborations, such as our collaboration with Pfizer, on attractive terms. We expect that in some of these alliances we will seek to maintain rights in the development of drug candidates and the commercialization of drugs as part of our effort to build our internal clinical development and sales and marketing capabilities.

***Establish specialized sales and marketing capabilities***. We plan to retain United States marketing and sales rights or copromotion rights for our product candidates for which we receive marketing approvals in situations in which we believe it is possible to access the market, or a portion of the market, through a focused, specialized sales force. For example, although ICA-105665 for epilepsy and pain will require a substantial detailing effort if approved, we believe that a subset of physicians who specialize in the treatment of epilepsy is sufficiently concentrated to enable us to effectively copromote to this market with a small internal sales force. For situations in which a large sales force is required to access the market and with respect to markets outside of the United States, we generally plan to commercialize our drug candidates through a variety of types of collaboration arrangements with leading pharmaceutical and biotechnology companies.

## Clinical Program

We currently have one product candidate in clinical trials, ICA-105665, a small molecule compound that targets specific KCNQ ion channels, which we are developing for the treatment of epilepsy and pain. We have discontinued the development of senicapoc, which we had been developing for the treatment of asthma and previously for the treatment of sickle cell disease. Both of these product candidates were discovered through our internal research efforts.

### *ICA-105665 and our other Lead Compounds for Epilepsy and Pain*

Our most advanced compound for the treatment of epilepsy and pain is ICA-105665, for which we have completed a proof-of-concept trial in epilepsy with positive results and a proof-of-concept trial in pain with negative results. ICA-105665 targets specific potassium channels, which are located primarily on the membrane of nerve cells, or neurons, present in particular regions of the central and peripheral nervous system. In addition, we have identified several backup compounds that also target these channels. We have retained all worldwide rights to these compounds.

#### *ICA-105665 and Other Lead Compounds for Epilepsy*

***Disease overview***. Epilepsy is a disorder characterized by episodic abnormal electrical activity in the brain resulting in seizures. There are many causes of epilepsy, including a history of trauma to the brain, tumor, bleeding, metabolic conditions and genetic conditions. There are three principal types of epilepsy:

- partial seizures, which affect a portion of the brain;
- generalized seizures, which affect the entire brain; and
- absence seizures, a type of generalized seizure that results in temporary loss of consciousness.

Regardless of the underlying cause or the specific type of seizure activity, seizures are the result of abnormal excitability of neurons in the brain that generate and transmit electrical impulses inappropriately.

Electrical impulses are generated within and between neurons as a result of ion movements across cell membranes. During an epileptic seizure there may be an imbalance of ion channel activity due to, or leading to,

an imbalance in electrical activity in various neurons in specific regions of the brain. By reducing abnormal neuronal excitability through the modulation of ion channels, drugs may prevent seizures.

The ion channel target for the lead compounds that we are developing for the treatment of epilepsy and pain is one of the potassium ion channels responsible for determining the excitability of neurons in the central and peripheral nervous system. This channel is highly expressed in the central nervous system, including regions linked to seizure disorders, such as the cortex, hippocampus and thalamus. When this channel is activated, it permits the flow of positively charged potassium ions out of the nerve cells in which these channels reside, thereby making the resting membrane potential inside these cells more negative. This more negative resting membrane potential decreases the electrical excitability of the nerve cell, thereby decreasing the likelihood for inappropriate or excessive electrical signals, such as those which occur during epileptic episodes. Genetic evidence also suggests a role for this channel in maintaining an appropriate negative resting membrane potential in nerve cells. Specifically, a rare genetic mutation in which this channel is not able to open properly has been linked to a syndrome involving convulsions in infancy.

***Market opportunity and current treatment.*** Epilepsy represents a large and growing market opportunity. According to the Epilepsy Foundation, there is an estimated prevalence of 2.5 million patients in the United States, with approximately 180,000 new cases diagnosed in the United States each year. Sales of drugs currently marketed for the treatment of epilepsy amount to several billion dollars annually. Sales for these drugs include prescriptions for both epilepsy and other indications, including neuropathic pain. Despite the variety of drugs currently available, approximately one-third of the epilepsy patient population remains resistant to currently available medical treatment according to Brain, a journal of neurology.

Drugs currently approved for the treatment of epilepsy include Neurontin, Depakote, Topamax, Lamictal, Keppra and Tegretol. These drugs are believed to work through a variety of mechanisms, including inhibition of sodium ion channels and enhancement of an inhibitory neurotransmitter named GABA. Some drugs are more effective against some types of epilepsy than others, and individual therapy must be tailored to the particular patient. Many patients require combination therapy to adequately control seizure activity. Each of these drugs is associated with side effects, such as dizziness, drowsiness, fatigue, nausea and depression as well as mood, attention and sleeping disorders, which limit their utility in the treatment of many patients. For patients who are resistant to pharmaceutical treatment, implantable devices or surgery are sometimes considered as therapeutic options. Although such devices or surgery may be effective for some patients, invasive treatment options carry the risk of bleeding, infection or other complications, are generally reserved for a small subset of severely ill patients and are usually used only after medical therapy has failed.

### *ICA-105665 and Other Lead Compounds for Pain*

***Disease overview.*** Pain is the leading public health problem in the United States and the most common symptom that leads to medical care. According to the American Pain Society, the cost of pain, including medical bills and lost workdays, is estimated at $100 billion per year in the U.S. Back pain alone produces chronic disability in one percent of the U.S. population and is the leading cause of disability in Americans under 45 years old. As the population ages, the already significant problem of chronic pain in the elderly is expected to increase.

Pain can be categorized according to etiology, with inflammatory pain, back pain, cancer pain, migraine headaches, and neuropathic pain being some of the more common types of pain. According to the American Pain Society, approximately 40 million Americans have arthritis, while more than 26 million Americans, ages 20 to 64, experience frequent back pain. Among cancer patients, it is estimated that 70% have significant pain during their illness, but fewer than half receive adequate treatment for their pain. More than 25 million Americans suffer migraine headaches, while four million Americans, mostly women, suffer from fibromyalgia, a complex condition involving widespread pain and other symptoms.

Neuropathic pain is a particularly severe form of chronic pain that results from damage to the peripheral nervous system. Damage to the nervous system can result in neurons that are highly sensitized and that can

produce pain in response to stimuli that would normally not be perceived as painful. The most common causes of neuropathic pain include diabetes and shingles, both of which are conditions in which there is damage to the peripheral nerves. Though rare, neuropathic pain may also be produced by damage to the central nervous system, particularly regions of the brain and spinal cord that are part of the normal pain pathways, including the thalamus. Neuropathic pain is often severe and notoriously unresponsive to standard pain treatments.

The ion channel target for the lead compounds that we are developing for the treatment of epilepsy and pain is expressed in the central and peripheral nervous system in pain pathways, including in sensory nerve cells such as the dorsal root ganglia. Near the spinal cord, the dorsal root ganglia collect and integrate pain impulses from the peripheral nerves. We believe that activation of this ion channel may reduce the excessive neuronal excitability that contributes to the sensation of pain.

***Market opportunity and current treatment.*** A variety of agents are used to treat pain, including non-steroidal anti-inflammatory drugs, or NSAIDs, cyclo oxygenase II inhibitors, or Cox-II inhibitors, opiates, and certain antidepressants and anticonvulsants. NSAIDs are generally used for less severe pain types, while opiates, antidepressants and anticonvulsants are generally reserved for more serious pain, such as neuropathic pain. The Cox-II inhibitors have been widely used primarily for arthritic pain, although the withdrawal of Vioxx due to safety issues has led to a contraction of the market for these agents. The worldwide market for pain therapeutics is estimated to be in the tens of billions annually.

Many anticonvulsants, such as Neurontin, Depakote and Lamictal, that were initially developed for the treatment of epilepsy have subsequently been demonstrated to be effective in other disorders of the central and peripheral nervous system, including neuropathic pain, bipolar disorder and migraine headache. Despite the availability of several such drugs, neuropathic pain remains a poorly treated condition. According to the International Association for the Study of Pain, Neurontin is the drug most commonly prescribed for this condition, but is effective in only approximately 30% of patients. In addition, anticonvulsant drugs are associated with a number of side effects, as noted above. According to the International Association for the Study of Pain, tricyclic antidepressants, such as Amitriptyline, and antiarrhythmics, such as Mexiletine, also have limited efficacy. The use of antidepressants and antiarrhythmics is limited by their side effects, which may include sedation, nausea and dizziness.

Two additional agents, Cymbalta and Lyrica, have been approved by the U.S. Food and Drug Administration, or FDA, for the treatment of specified types of neuropathic pain. In clinical trials, the most common side effects associated with Cymbalta included nausea, somnolence, dizziness, dry mouth, constipation, hyperhidrosis, decreased appetite and asthenia, while those associated with Lyrica included dizziness, somnolence, dry mouth, peripheral edema, blurred vision, weight gain and difficulty with attention. In addition, Lyrica has been labeled as a "controlled substance" by the FDA, and is therefore subject to a number of restrictions regarding its distribution and use.

***ICA-105665 and Other Lead Compounds.*** ICA-105665 and our other lead compounds target particular potassium ion channels that are expressed in the central nervous system, including regions linked to seizure disorders such as the cortex, hippocampus and thalamus, and in pain pathways in the central and peripheral nervous system. In preclinical studies, these compounds:

- increased the activity of the target potassium channels in a selective and specific manner *in vitro*, thereby increasing the outflow of positively charged potassium ions from the nerve cell and decreasing excessive electrical activity;
- demonstrated broad spectrum anti-epileptic activity, including activity in animal models of partial seizures, generalized seizures and treatment-resistant seizures; and
- demonstrated activity in several animal models of pain, including the Chung model, which is one of the most predictive models of neuropathic pain.

During the third quarter of 2007, we initiated a single ascending dose Phase I clinical trial of ICA-105665 to assess the safety, tolerability and pharmacokinetics of this novel compound in healthy volunteers. Nine cohorts, each consisting of six subjects receiving study medication and three subjects receiving placebo, were studied at doses ranging from 30mg to 400mg administered orally. Following this study, we conducted a multiple ascending dose clinical trial of ICA-105665. Three cohorts of healthy volunteers, each consisting of six subjects receiving study medication and two subjects receiving placebo, were studied at doses of 50mg, 100mg and 200mg administered orally twice daily for a period of seven days. Following completion of the three cohorts of healthy volunteers, the multiple ascending dose study was expanded to include patients with epilepsy. Two cohorts, comprised of a total of fourteen patients, were studied at doses of 100mg or 200mg administered orally twice daily for a period of seven days. All epilepsy patients were also concurrently receiving one anti-epileptic drug.

In both studies, plasma concentrations in excess of predicted efficacious concentrations were achieved. The compound was well tolerated at all dose levels, and a maximum tolerated dose was not identified. There were no serious adverse events, no dose limiting toxicities, and no dropouts. There were also no clinically significant changes in laboratory values and no effects on any electrocardiogram parameters, including the QT interval, an important parameter for assessing potential cardiac side-effects. Adverse events related to the central nervous system were mild and consistent with those of other anti-epileptic drugs. In both studies, pharmacokinetics were linear, dose proportional, and consistent with the potential for twice daily dosing. Over a seven day period, ICA-105665 did not appear to have any effect on the plasma concentrations of other anti-epileptic drugs. Other anti-epileptic drugs that are not hepatic enzyme inducing did not affect plasma concentrations of ICA-105665. Enzyme inducing anti-epileptic drugs appear to decrease the exposure levels of ICA-105665.

During the first quarter of 2009 we reported that we had received notification from the FDA that, based on a review of certain preclinical data, ICA-105665 had been placed on partial clinical hold. This partial clinical hold related to the development of ICA-105665 for epilepsy but did not pertain to studies of the compound for pain. This action by the FDA was taken following its review of high-dose seven day toxicity studies performed at the request of the FDA. While in the standard six month rat and nine month monkey preclinical toxicology studies ICA-105665 was generally well tolerated, in the requested high-dose studies, which were completed and filed with the FDA during the fourth quarter of 2008, a small percentage of the animals exhibited abnormal movements. It was uncertain whether these findings represented an effect on central nervous system excitability or another type of abnormal movement related to general drug effects. The FDA requested that we further characterize the abnormal movements observed in animals prior to initiating additional studies in patients with epilepsy.

Following the submission of additional preclinical data and a revised protocol for a study in patients with photosensitive epilepsy, the FDA lifted the partial clinical hold related to the development of ICA-105665 during the third quarter of 2009. Accordingly, in September 2009, we initiated a proof-of-concept study of ICA-105665 in patients with photosensitive epilepsy. In addition, in September 2009 we initiated a proof-of-concept pain study in healthy volunteers.

The photosensitive epilepsy study was a placebo-controlled, single blind study conducted at two clinical research centers in the United States with specialized expertise in the conduct of this study. The study was designed in collaboration with a group of international experts, including members of the Epilepsy Study Consortium, and followed a standardized protocol that has been utilized in the development of several anti-epileptic agents. The photosensitive epilepsy model is considered by experts in the field to be useful in establishing proof-of-concept for the treatment of epilepsy. Many currently marketed anti-epileptics have been shown to be active in similar studies during or after their development.

Eligible subjects were those patients with demonstrated epileptiform activity by electroencephalogram, or EEG, in response to photic stimulation and represent a small subset of the epilepsy population. All subjects continued background therapy with their concomitant anti-epileptic medications through the testing period. The

study measured the ability of ICA-105665 to reduce the photic-induced epileptiform EEG response by comparing the response to a single administration of ICA-105665 with the response to placebo. All EEGs were reviewed by a centralized reader on a blinded basis.

At the top dose studied (400mg/day), two of four patients demonstrated a positive response to treatment with ICA-105665, as specified by standard pre-defined criteria. At all dose levels tested, ICA-105665 was well tolerated, with no serious adverse events, no dose limiting toxicities, and no dropouts from the study. There were also no clinically significant changes in laboratory values and no effects on any electrocardiogram parameters, including the QT interval. Adverse events related to the central nervous system were mild and consistent with those of other anti-epileptic drugs.

The proof-of-concept pain study was a randomized, double-blind, placebo-controlled, cross-over study designed to assess the ability of ICA-105665 to decrease the sensation of pain in response to the intradermal injection of capsaicin and to a simulated sunburn. Twenty-four healthy volunteers were enrolled in the study, which was conducted at a single clinical research site in the United Kingdom. At the dose tested, which was 200mg bid, ICA-105665 did not reduce the pain elicited in the capsaicin or sunburn models. The compound was well tolerated with no serious adverse events and with similar numbers of adverse events across treatment groups. Pharmacokinetic parameters were consistent with expectations.

No assessment of the efficacy or safety of a product candidate can be considered definitive until all clinical trials needed to support a submission for marketing approval are complete. Success in preclinical or early stage clinical studies does not mean that subsequent clinical trials will confirm the earlier findings.

***Senicapoc for Asthma***

Senicapoc is a novel small molecule potassium channel inhibitor that we had previously developed for the treatment of asthma and, prior to that, for sickle cell disease. Senicapoc targets a particular potassium channel that is expressed on a number of cells believed to be important in the pathogenesis of these diseases, including various cells of the immune and inflammatory system and airway epithelial cells in the case of asthma, and red blood cells in the case of sickle cell disease. Senicapoc is taken orally and was being developed for once-a-day dosing. We retain all worldwide rights to senicapoc.

We submitted an Investigational New Drug Application, or IND, for the use of senicapoc for the treatment of asthma during the fourth quarter of 2007. During 2008 we conducted a multiple ascending dose study in healthy volunteers to explore higher doses than those used previously in our clinical trials of senicapoc for sickle cell disease. Four cohorts of healthy volunteers were studied at doses of 15mg, 20mg, 30mg and 40mg administered orally once daily for periods ranging from seven to twenty-eight days. In this study, senicapoc was well tolerated with no serious adverse events, no dose limiting toxicities, and no dropouts. Pharmacokinetics were linear, dose proportional, and consistent with the potential for once daily dosing.

In October 2008, we initiated a Phase II proof-of-concept clinical trial of senicapoc in patients with allergic asthma. This Phase II trial was a double-blind, placebo-controlled, parallel group study designed to assess the safety and efficacy of senicapoc on pulmonary function in patients with allergic asthma following exposure to an allergen. Approximately 30 patients from two clinical research centers in the United Kingdom were randomized (1:1) to receive senicapoc or placebo once a day for two weeks. Patients receiving senicapoc received 40mg once daily following an initial loading dose. The primary efficacy analysis was the comparison between treatment arms of the late asthmatic response following inhalation of an allergen, as measured by the percent change in Forced Expiratory Volume 1, or FEV1, the amount of air that can be forcefully exhaled in one second. FEV1 is a standard, commonly used test to measure lung function.

In March 2009, we initiated a second Phase II proof-of-concept study in patients with exercise-induced asthma. This Phase II trial was a double-blind, placebo-controlled, parallel group study designed to assess the

safety and efficacy of senicapoc on pulmonary function in patients with exercise-induced asthma. Aggravation of asthma symptoms upon exercise is a common finding for many asthma patients. Approximately 60 patients from approximately 15 clinical research centers in the United States were randomized (1:1) to receive senicapoc or placebo once a day for four weeks. Patients receiving senicapoc received 40mg once daily following an initial loading dose. The primary efficacy analysis was the comparison between treatment arms in the percent change in FEV1 following exercise.

In September 2009, we reported top line results of the study in patients with allergic asthma. In this study, senicapoc demonstrated a modest reduction in the late asthmatic response, or LAR, to a challenge of inhaled allergen. In October 2009, we reported top line results of the study in patients with exercise induced asthma. In this study, senicapoc failed to demonstrate an effect on the primary study endpoints. Following a review of the data sets from both of these proof-of-concept studies, we have decided not to pursue the further clinical development of senicapoc for asthma.

Previously we had developed senicapoc for the treatment of sickle cell disease. In our Phase II trial, senicapoc was demonstrated to improve the hematologic profile of patients with sickle cell disease. This finding was further confirmed in the open label extension study to the Phase II study and in our pivotal Phase III study. However, our pivotal Phase III trial was halted prior to completion by the Data Monitoring Committee, or DMC, as a result of lack of efficacy in reducing crisis rate, the primary endpoint of that study. We are therefore no longer pursuing senicapoc as a potential treatment for sickle cell disease.

**Research Programs**

We believe that many of the ion channel targets we have identified offer opportunities to discover and develop novel therapies for a wide range of human diseases. We are currently pursuing research programs in two principal areas: pain disorders and inflammatory disorders. In each of these programs we have identified multiple ion channel targets that have been validated through preclinical research and compounds with demonstrated *in vitro* and, in many cases, *in vivo* activity. We also intend to initiate new research programs in disease areas in which we believe that our approach offers clinically meaningful therapeutic advantages and for which there is a significant unmet medical need and commercial opportunity.

***Pain Disorders***

*Scientific Overview.* Pain disorders are classified into several categories based upon their cause. Neuropathic pain is a particularly severe pain disorder that results from damage to the central and peripheral nervous system. Inflammatory pain results from the effects of inflammatory mediators and cellular debris that are released into surrounding tissues as the immune system is activated, whether appropriately to fight infection, or inappropriately, such as in auto-immune disorders, including rheumatoid arthritis. Both neuropathic pain and inflammatory pain are types of chronic pain.

Ion channels play an important role in the detection, transmission and cognitive recognition of pain signals. Ion channels are critical at each step in the pain pathway, including the detection of local stimuli, the transmission of the electrical impulses to the brain and the interpretation of electrical impulses as pain signals. The underlying mechanism through which ion channels are involved in the sensation of pain is through the modulation of the level of excitability of specialized nerve cells in the pain pathway. Consequently, we believe that by selectively modulating particular ion channels in the pain pathway, the detection, transmission or cognitive recognition of pain can be reduced.

*Program Status.* We have identified several ion channel targets that are expressed in pain pathways in both the central and peripheral nervous system. For several of these targets, we have identified lead compounds with *in vivo* efficacy in animal models of pain disorders. In August 2007, we entered into a collaborative research and license agreement with Pfizer with respect to three of these sodium channel targets. See "Our Collaborations—Pfizer" below for a description of our collaboration with Pfizer.

### *Inflammatory Disorders*

*Scientific Overview.* Inflammation is a reaction of the body to actual or perceived injury and is characterized by pain, heat, redness and swelling in the affected area. Under normal circumstances inflammation is a protective response, the goal of which is to eliminate both the initial cause of injury, such as bacteria or toxins, and the consequences of such injury, such as dead cells and tissues. However, if triggered or directed inappropriately, the inflammatory response can itself become harmful, leading to cell, tissue and organ destruction. Examples of such inappropriate or pathologic inflammation include some of the most common and disabling diseases, such as rheumatoid arthritis, Crohn's disease, lupus, psoriasis, asthma and chronic bronchitis. Although several different diseases and mechanisms can trigger the inflammatory response, the underlying process in each of these diseases is closely related, involving a number of different inflammatory cell types and chemical signaling factors.

Ion channels may play a key role in either the activation or modulation of the inflammatory response. For example, the activation of T-lymphocytes, an important cell type in this response, is believed to involve the influx of calcium into these cells through specialized ion channels. We believe the opening and closing of ion channels may modulate the movement of some immune system cells to the site of inflammation, the release of chemical signaling factors from immune system cells and the proliferation of these cells in response to activation of the immune system.

*Program Status.* We have completed profiling the distribution of all human ion channels known to us in various cells of the immune system. As a result, we have identified several ion channel targets that are expressed at high levels in some immune system cells and that may play an important role in modulating the inflammatory response. We have discovered compounds that are active *in vitro* against some of these targets, leading to decreases in calcium entry into immune system cells, decreases in immune system cell proliferation, decreases in immune system cell migration into tissues and other measures of inflammatory responses. We have also demonstrated effects of some of our compounds in animal models of inflammatory diseases.

## Our Ion Channel Drug Discovery Technologies

We have established an integrated set of core technologies for the discovery of drugs that act upon ion channel targets. Our technologies broadly cover the key disciplines of importance to ion channel drug discovery, including molecular biology, electrophysiology, high throughput screening, chemistry, bioanalytics and pharmacology. Key elements of our core ion channel drug discovery technologies include the following:

### *Comprehensive Library of Ion Channel Genes*

As the foundation of our ion channel focused drug discovery efforts, we have cloned over 300 human ion channel genes, which we believe represent substantially all of the human ion channel genome. We have approximately 1,000 cell lines comprising many of these genes in a variety of specific configurations which mimic native channels in the human body. We also have developed a substantial number of cell lines that we can use as functional screening assays. This comprehensive library of clones, cell lines and assays enables us to:

- rapidly initiate new ion channel drug discovery programs;
- perform high throughput screens in parallel across multiple ion channel targets; and
- understand the relationships among various ion channels and classes of compounds that are active against ion channels.

### *Parallel High Throughput Screening Systems*

We conduct high throughput screening against our ion channel targets in a parallel manner. Specifically, as we screen a particular ion channel target with a library of small molecules, we simultaneously screen other important safety or selectivity ion channel targets with the same set of compounds. The data we derive from

these parallel screens provide important information not just on the potency of the compounds on the target of interest, but also on the potential of these compounds to cause side effects from activity at other ion channels. This approach enables us to focus our medicinal chemistry efforts only on those compounds that demonstrate both potency and selectivity for the target, thereby eliminating compounds that are likely to induce significant side effects. We believe that we apply this type of parallel screening earlier in the drug development process than many other companies pursuing ion channel drug discovery and that this approach may reduce our risk of failure in clinical trials.

***Extensive Library of Ion Channel Focused Small Molecules***

We have developed an extensive library of approximately 250,000 small molecules that have been selected for potential activity at ion channel targets. We have used our experience in working across a range of different ion channel targets to develop this library. We have found that some families of compounds show increased levels of activity against particular classes of ion channels. Through our synthetic medicinal chemistry efforts, combined with our proprietary computational chemistry technology, we continually enrich and expand our small molecule compound library with compounds that have demonstrated activity at ion channel targets.

***Proprietary Computational Chemistry Technology***

We have developed a proprietary computational chemistry technology that we use to identify active compounds based upon the information provided by our high throughput screening systems. Through the application of statistical techniques, this computational chemistry technology uses the information on relevant chemical parameters of the active compounds to construct a mathematical model of the general properties of compounds that may be active against the targeted ion channel. We use this model to perform a computer search of our compound library, the libraries of our collaborators and commercially available libraries, as well as the millions of compounds accessible *in silico*, for compounds with potential activity against the target. Through this approach, we are able to generate an enriched library containing multiple classes of compounds with activity against the targeted ion channel for subsequent medicinal chemistry efforts. We are able to generate this enriched library by screening a relatively small number of compounds, thereby accelerating our drug discovery process.

***Extensive Database and Bioinformatics Platform***

We have built an extensive database containing information on many ion channels across most ion channel families. We use this database to capture information we have obtained from studying the interactions between ion channel targets and small molecule compounds, and we apply this information across our drug discovery programs. We have created a discovery informatics infrastructure that facilitates our efficient management of large and complex data sets representing valuable ion channel information. We organize this data in a format that is readily accessible by our scientists, thereby facilitating decision making. Our database contains important information regarding:

- the characterization of each of our targets and compounds;
- the potency and selectivity of particular compounds or groups of compounds against ion channel targets we have studied;
- bioanalytical and pharmacological data; and
- information accessed from other proprietary and publicly available databases and sources.

***Electrophysiology Know-How and Technical Expertise***

We have assembled an experienced electrophysiology group equipped with state-of-the-art technologies and the capability to perform a wide variety of electrophysiologic measurements. The skill and expertise of our electrophysiology group enables us to understand the function of each of our ion channel targets under varying

physiologic conditions and its modulation by drug candidates. Through the detailed analyses performed by this group, we are better able to understand the likely role of the channel in the tissue of interest and the likely effects of its modulation by small molecule compounds. In addition to our expertise in the application of traditional electrophysiologic techniques, we have also advanced our capabilities through the integration of recently developed high throughput electrophysiology equipment and techniques into our drug discovery process.

***Pharmacology and Bioanalytics Expertise***

We conduct iterative *in vitro* and *in vivo* testing of our compounds to characterize their pharmacologic and pharmacokinetic properties in detail. We employ a wide variety of animal models in disease areas of interest to understand the activity of our drug candidates in appropriate model systems. We also have advanced on-site bioanalytic capabilities in order to rapidly provide our scientists with important data regarding compound pharmacokinetics and metabolism.

**Key Features of our Technology**

We believe that our integrated technology platform enhances our capabilities in the discovery of drugs that act upon ion channel targets. We believe that our platform has the following key features:

***Efficiencies Across Research Programs***. By working broadly across the human ion channel genome, we can realize significant efficiencies in our drug discovery process, both in biology and in chemistry. Ion channels within a given family often share common characteristics. For example, when we determine the appropriate molecular biology techniques for constructing a cell line and high throughput screening assay for one member of a particular ion channel family, we typically obtain information that is important in determining the appropriate techniques for other members of the same family. Similarly, because of the structural similarity among ion channels of a given family, compounds in a series that are active at one member of a particular family may assist us in our efforts to identify compounds that are active at other members of the same family as well.

***Efficient Target Validation and Lead Generation***. While traditional drug discovery starts with the disease and seeks to identify potential intervention points, or drug targets, our target class approach starts with all potential ion channel targets and seeks to identify applications to the treatment of various diseases. We believe that our approach provides for a more efficient drug discovery process, because our in-depth understanding of the targets and methods for finding small molecule modulators of these targets obviates the need to develop new research tools each time a new target is identified. Instead, we use our knowledge and skill to quickly find potential small molecule modulators of particular ion channel targets. We then use these small molecules to validate the particular target in a relevant animal model of the disease. If such a small molecule demonstrates activity in a therapeutically relevant animal model, it both validates the target and provides a starting point for further medicinal chemistry efforts. We believe that our target class approach, combined with our integrated target validation and lead generation process, represents a more efficient drug discovery process than many traditional approaches.

***Accelerated Development Cycle***. Several elements of our technology platform contribute to an acceleration of the development cycle, including our cell lines and assay systems for many of our ion channel targets, our parallel high throughput screening systems, and our focused library of ion channel active compounds. In addition, our computational chemistry technology reduces the need for screening large collections of compounds. Finally, our internal capabilities in animal studies, including our high throughput bioanalytics, which involve the measurement of compounds in the relevant animal systems, enable us to rapidly identify potent and selective drug candidates. When combined, these components of our discovery technology have enhanced our ability to efficiently advance from the initiation of a program to preclinical studies, thus allowing us to work simultaneously on several ion channel targets across a range of therapeutic areas.

**Our Collaborations**

A key element of our strategy is to establish strategic collaborations with leading pharmaceutical and biotechnology companies. We currently have one active collaboration with Pfizer. Our collaboration with

Astellas Pharma Inc., formerly Yamanouchi Pharmaceutical Co, Ltd., concluded in 2008. Two of our collaborations, with McNeil Pediatrics Division (formerly the McNeil Consumer & Specialty Pharmaceuticals Division) of McNeil PPC, Inc., a subsidiary of Johnson & Johnson, and Bristol-Myers Squibb Company, concluded in 2007. Our past and present collaborators have devoted substantial scientific and financial resources to our joint discovery efforts.

***Pfizer***

In August 2007, we entered into a collaborative research and license agreement with Pfizer for the discovery, development, manufacture and commercialization of compounds and products that modulate three specific sodium ion channels as new potential treatments for pain and related disorders. In September 2009, we entered into a one year extension through September 2010 of the research term of this collaboration. Under the terms of the agreement, we and Pfizer are combining resources to identify compounds that target these three ion channels in a global research and development collaboration. We and Pfizer have formed a joint research committee to monitor and oversee the collaboration.

The ion channel targets included in the collaboration are important in the generation of electrical signals in nerve fibers that mediate the initiation, transmission and sensation of pain. In preclinical studies, compounds identified by us have demonstrated efficacy in pain models. We have also established a broad portfolio of intellectual property in this area, covering multiple promising compounds targeting sodium channels.

Under the terms of the collaboration, we have granted Pfizer a worldwide exclusive license, with the right to grant sublicenses, to our patent rights and know-how with respect to drugs arising from the collaboration. In addition, we have granted Pfizer the first right to enforce our intellectual property rights in order to protect these drugs and have retained a right to enforce our intellectual property rights. Pfizer is responsible for funding all aspects of the collaboration and for worldwide clinical development and commercialization of drugs arising from the collaboration.

Pursuant to the collaboration arrangement, Pfizer paid us an initial upfront license fee of $12.0 million. In addition to the upfront license fee, Pfizer is providing us with research and development funding over the research period pursuant to the agreement. Pfizer is obligated to make payments to us upon achievement of specified research, development, regulatory and commercialization milestones of up to $359.0 million for each drug candidate developed. We are also eligible to receive tiered royalties, against which Pfizer may credit any commercialization milestones, based on specified percentages of net product sales. Pfizer's obligation to pay us royalties with respect to a product will expire generally on a country-by-country basis on the expiration of the last-to-expire of specified patent rights covering the product.

The collaborative research and license agreement will expire on a product-by-product basis on the later of the end of the research term, which was originally two years from the effective date of the agreement but which has subsequently been extended through September 2010, and the date on which all royalty obligations end. Pfizer may terminate the collaborative research and license agreement following the research term with respect to products that Pfizer no longer intends to develop or commercialize. Either party may terminate the collaborative research and license agreement in the event that the other party materially breaches its obligations under the agreement and fails to cure such breach within a specified cure period. If we terminate the collaborative research and license agreement based on a material breach by Pfizer, or if Pfizer terminates the collaborative research and license agreement with respect to specified products that Pfizer no longer intends to develop or commercialize, the rights to then identified products and product candidates to which Pfizer's rights terminate will be transferred to us.

In August 2007, in connection with the collaborative research and license agreement with Pfizer, we also entered into a purchase agreement with Pfizer to sell to Pfizer up to $15.0 million of our common stock. In a first closing of the transaction on August 20, 2007, we sold 2,688,172 shares of common stock to Pfizer at a price of

$1.86 per share, which was the closing bid price of our common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the execution of the purchase agreement, resulting in gross proceeds to us of approximately $5.0 million. In a subsequent closing of the transaction on February 13, 2008, we sold 5,847,953 shares of common stock to Pfizer at a price of $1.71 per share, which was the closing bid price of our common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the date of our exercise of our put option to sell the shares, resulting in gross proceeds to us of approximately $10.0 million.

In March 2008, we and Pfizer entered into a collaboration with the laboratory of Professor B. A. Wallace at Birkbeck College, University of London, to study the structural biology of sodium channels. This three party relationship was created to support our collaboration with Pfizer. In connection with the Birkbeck collaboration, we also entered into a supplemental agreement with Pfizer that requires Pfizer to reimburse us for certain equipment to be used in the collaboration and to pay us for additional research and development services over a two year term. We are also contributing services to the collaboration which expires on March 31, 2010.

### *McNeil*

In June 2004, we entered into collaboration and copromotion agreements with McNeil to develop and commercialize senicapoc for the treatment of sickle cell disease. This collaboration was terminated in September 2007 following the unsuccessful Phase III clinical trial of senicapoc for sickle cell disease.

## Research and Development

For the years ended December 31, 2009, 2008 and 2007, we spent approximately $18.1 million, $22.1 million and $27.9 million, respectively, on research and development activities. The aggregate revenues that we have recognized from our collaborators for research and development in each of the last three years were as follows: 2009—$9.6 million; 2008—$12.3 million; and 2007—$21.1 million. For more information regarding our research and development expenses, please see "Financial Operations Overview" in "Management's Discussion and Analysis of Financial Condition and Results of Operations."

## Intellectual Property

### *Patents and Trade Secrets*

Our success depends in part on our ability to obtain and maintain proprietary protection for our product candidates, technology and know-how, to operate without infringing the proprietary rights of others and to prevent others from infringing our proprietary rights. Our policy is to seek to protect our proprietary position by, among other methods, filing United States and foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development of our business. We also rely on trade secrets, know-how, continuing technological innovation and in-licensing opportunities to develop and maintain our proprietary position.

As of February 28, 2010, we owned approximately 68 United States patents and approximately 67 United States patent applications as well as numerous foreign counterparts to many of these patents and patent applications. Our patent portfolio includes patents and patent applications with claims directed to the composition of matter, pharmaceutical formulations and methods of use of many of our compounds, including ICA-105665, the lead compound that we are developing for the treatment of epilepsy and pain, and senicapoc. We consider the patent covering the chemotype which includes ICA-105665 and two patents directed at senicapoc to be material to our business.

The patent rights relating to senicapoc owned or licensed by us consist of two issued United States patents, one that expires in 2014 and a second, which is a composition of matter patent, that expires in 2019, and

counterpart patents and patent applications in a number of other jurisdictions, including Europe and Japan. The patent rights relating to ICA-105665 and other lead compounds that we are developing for the treatment of epilepsy and pain owned by us consist of two issued United States patents, one relating to composition of matter, and one relating to method of use for pain, as well as counterpart patent applications in a number of other jurisdictions, including Europe and Japan. United States patents generally have a term of 20 years from the date of nonprovisional filing.

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. Our ability to maintain and solidify our proprietary position for our technology will depend on our success in obtaining effective claims and enforcing those claims once granted. We do not know whether any of our patent applications or those patent applications that we license will result in the issuance of any patents. Our issued patents and those that may issue in the future, or those licensed to us, may be challenged, invalidated or circumvented, which could limit our ability to stop competitors from marketing related products or the length of term of patent protection that we may have for our products. In addition, our competitors may independently develop similar technologies or duplicate any technology developed by us, and the rights granted under any issued patents may not provide us with any meaningful competitive advantages against these competitors. Furthermore, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any of our products can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent.

We may rely, in some circumstances, on trade secrets to protect our technology. However, trade secrets are difficult to protect. We seek to protect our proprietary technology and processes, in part, by confidentiality agreements with our employees, consultants, scientific advisors and other contractors, as well as physical security of our premises and our information technology systems. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants or contractors use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

***License Agreements***

We are a party to a number of license agreements, primarily with academic institutions, under which we license patents, patent applications and other intellectual property. We enter into these agreements to augment the significant intellectual property created by our scientists. The licensed intellectual property covers some of the compounds that we are researching and developing, some ion channel targets and some of the scientific processes that we use. These licenses impose various diligence and financial payment obligations on us. We expect to continue to enter into these types of license agreements in the future. The only existing license that we consider to be material to our business is our agreement with Children's Medical Center Corporation, or CMCC, which is described below.

In February 2000, we entered into an agreement with CMCC for a worldwide exclusive license to products covered by the licensed patent rights. The patent rights licensed to us by CMCC include patent rights directed to the use of compounds such as senicapoc for most fields of human and veterinary therapeutics and diagnostics. We have the right to grant sublicenses under this license. Patents licensed under our agreement with CMCC expire over the period from 2012 through 2016.

In exchange for the rights licensed from CMCC, we paid CMCC an upfront license fee and license maintenance fees aggregating $250,000. We also paid CMCC $500,000 over the three-year period ended February 2003 for research conducted by CMCC that we agreed to sponsor in accordance with a sponsored research agreement entered into by CMCC and us in August 2000. In our sponsored research agreement with CMCC, CMCC granted us a right of first negotiation to obtain a worldwide exclusive license under patent rights resulting from the sponsored research.

We are obligated to pay CMCC specified amounts with respect to any sublicense income received by us. In connection with our previous collaboration with McNeil, this sublicense income included upfront and milestone payments, royalties and our share of profits in the copromotion territory under our collaboration agreement with McNeil. McNeil paid us an initial upfront payment of $10.0 million, $1.3 million of which we paid to CMCC, and a milestone payment of $5.0 million upon acceptance of the protocol for our Phase III clinical trial of senicapoc by the FDA, $650,000 of which we paid to CMCC.

Under our license agreement with CMCC, we are required to pay CMCC royalties on net product sales by us or our affiliates. We also are required to make payments to CMCC aggregating up to an additional $250,000 based on achieving specified development and regulatory milestones with respect to each licensed product, which is not a sublicensed product. We are entitled to a credit for the development and regulatory milestone payments that we make against the royalties that we would otherwise be obligated to pay of up to, but not more than, 50% of the royalties due in any given payment period.

Our royalty obligation with respect to each licensed product extends until the expiration of the last-to-expire patent, which is September 16, 2014 with respect to licensed products containing senicapoc, licensed from CMCC covering the licensed product in any country. Upon the later of the expiration of the last-to-expire licensed patent or February 2015, the agreement expires.

The agreement obligates us to use good faith and diligent efforts to develop senicapoc in accordance with an agreed development timetable and to use good faith and diligent efforts to commercialize one or more licensed products. CMCC has the right to terminate the agreement if we breach the agreement and fail to cure our breach within specified cure periods or in the event of our bankruptcy, liquidation, dissolution or cessation of operations.

**Competition**

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. We face competition from many different sources, including commercial pharmaceutical and biotechnology enterprises, academic institutions, government agencies and private and public research institutions. We believe that our most significant competitors in the area of drugs that work by modulating the activity of ion channels are Neurosearch A/S and Vertex Pharmaceuticals, Inc. In addition, there are a number of other companies, including large pharmaceutical companies, that have programs focused on specific ion channel drug discovery.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, clinical trials, regulatory approvals and marketing approved products than we do. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Our commercial opportunity will be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer side effects or are less expensive than any products that we may develop. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies and technology licenses complementary to our programs or advantageous to our business.

We rely upon our collaborator for support in advancing certain of our drug candidates and intend to rely on our collaborator for the commercialization of these products. Our collaborator may be conducting multiple product development efforts within the same disease area that is the subject of its agreement with us. Generally, our agreements with our collaborators do not preclude them from pursuing development efforts using a different approach from that which is the subject of our agreement with them. Therefore, any of our drug candidates may be subject to competition with a drug candidate under development by our collaborator.

There are currently approved therapies for the diseases and conditions addressed by our drug candidate that is undergoing clinical trials, which are described under "Clinical Program" above. Specifically,

- drugs such as Neurontin, Depakote and Lamictal are approved for the treatment of epilepsy and, in the case of Neurontin, prescribed for neuropathic pain; and
- Cymbalta and Lyrica are approved for the treatment of specified types of neuropathic pain.

There are also a number of companies working to develop new drugs and other therapies for these diseases that are undergoing clinical trials. The key competitive factors affecting the success of our drug candidates are likely to be their efficacy, safety, convenience and price.

**Government Regulation**

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, labeling, promotion, advertising, distribution, marketing and export and import of pharmaceutical products such as those we are developing. The process of obtaining regulatory approvals and the subsequent substantial compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources.

***United States Government Regulation***

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act and implementing regulations. If we fail to comply with the applicable United States requirements at any time during the product development process, approval process or after approval, we may become subject to administrative or judicial sanctions. These sanctions could include the FDA's refusal to approve pending applications, withdrawal of an approval, clinical holds, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties or criminal prosecution. Any agency enforcement action could have a material adverse effect on us.

The steps ordinarily required before a drug may be marketed in the United States include:

- preclinical laboratory tests, animal studies and formulation studies under the FDA's good laboratory practices regulations;
- submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin;
- adequate and well-controlled clinical trials to establish the safety and efficacy of the product for each indication;
- submission to the FDA of a New Drug Application, or NDA;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current Good Manufacturing Practices, or cGMP; and
- FDA review and approval of the NDA.

Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and efficacy of the product. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, a proposed clinical trial protocol and other information to the FDA as part of the IND. The IND must become effective before human clinical trials may begin. An IND will automatically become effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about issues such as the conduct of the trials as outlined in the IND. In that case, the IND sponsor and the FDA must resolve any outstanding FDA concerns or questions before clinical trials can proceed. If these issues are unresolved, the FDA may not allow the clinical trials to commence.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators. Clinical trials must be conducted in compliance with federal regulations and requirements, including good clinical practices, under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. The study protocol and informed consent information for subjects in clinical trials must be reviewed and approved by an independent Institutional Review Board, or IRB, before the clinical trial can begin at each site. Phase I trials usually involve the initial introduction of the investigational drug into humans to evaluate the product's safety, dosage tolerance, metabolism and pharmacodynamics and, if possible, to gain an early indication of its effectiveness.

Phase II trials usually involve controlled trials in a limited patient population to:

- evaluate dosage tolerance and appropriate dosage;
- identify possible adverse effects and safety risks; and
- evaluate preliminarily the efficacy of the drug for specific indications.

Phase III trials usually further evaluate clinical efficacy and test further for safety in an expanded patient population, typically at geographically dispersed clinical trial sites, to establish the overall benefit-risk relationship of the drug and to provide adequate information for the labeling of the drug. Phase I, Phase II and Phase III testing may not be completed successfully within any specified period, if at all. The FDA closely monitors the progress of each of the three phases of clinical trials that are conducted in the U.S. In addition, the Food and Drug Administration Amendment Act of 2007, or FDAAA, significantly expands the federal government's clinical trial registry to cover more trials and more information, including information on the results of completed trials. The FDA, an IRB or we may suspend or terminate clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of research when the research is not being conducted in accordance with the IRB's requirements or has been associated with unexpected serious harm to patients.

Assuming successful completion of the required clinical testing, the results of the preclinical studies and of the clinical studies, together with other detailed information, including information on the manufacture and composition of the product, are submitted to the FDA in the form of an NDA requesting approval to market the product for one or more indications. In most cases, the NDA must be accompanied by a substantial user fee and the manufacturer and/or sponsor under an approved NDA are also subject to annual product and establishment user fees. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use.

Under the Pediatric Research Equity Act of 2003, or PREA, as amended and reauthorized by the FDAAA, NDAs or supplements to NDAs for a new active ingredient, new indication, new dosage form, new dosing regimen, or new route of administration must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the drug for use in adults, or full or partial waivers from the pediatric data requirements. Unless otherwise required by regulation, PREA does not apply to any drug for an indication for which orphan designation has been granted.

Before approving an application, the FDA will inspect the facility or the facilities where the product is manufactured. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The FDA will issue an approval letter if it determines that the application,

manufacturing process and manufacturing facilities are acceptable and satisfy the regulatory criteria for approval. If the FDA determines the application, manufacturing process or manufacturing facilities are not acceptable, it will issue a "complete response" letter, which outlines the deficiencies in the submission and when possible, recommends actions that the applicant might take to place the application in condition for approval. Such actions may include, among other things, conducting additional safety or efficacy studies after which the sponsor may resubmit the application for further review. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

The testing and approval process requires substantial time, effort and financial resources, and each may take several years to complete. The FDA may not grant approval on a timely basis, or at all. We may encounter difficulties or unanticipated costs in our efforts to secure necessary governmental approvals, which could delay or preclude us from marketing our products. The FDA may limit the indications for use or place other conditions on any approvals that could restrict the commercial application of the products. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval.

After regulatory approval of a product is obtained, we are required to comply with a number of post-approval requirements. For example, as a condition of approval of an application, the FDA may require post-marketing testing, including Phase IV trials, and surveillance to monitor the product's safety or efficacy. In addition, holders of an approved NDA are required to report certain adverse reactions and production problems to the FDA, to provide updated safety and efficacy information and to comply with requirements concerning advertising and promotional labeling for their products. Also, quality control and manufacturing procedures must continue to conform to cGMP after approval. The FDA periodically inspects manufacturing facilities to assess compliance with cGMP, which imposes certain procedural and documentation requirements. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance.

We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our product candidates. Future FDA inspections may identify compliance issues at our facilities or at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of previously unknown problems with a product or the failure to comply with regulatory requirements may result in restrictions on a product, manufacturer or holder of an approved NDA, including withdrawal or recall of the product from the market or other voluntary or FDA-initiated action that could delay further marketing. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, which require further FDA review and approval. Also, new government requirements may be established, including those requirements resulting from new legislation, that could delay or prevent regulatory approval of our products under development.

***New Legislation***

From time to time, legislation is drafted and introduced in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of drug products. For example, the FDAAA granted significant new powers to the FDA, many of which are aimed at improving the safety of drug products before and after approval. In particular, the FDAAA authorizes the FDA to, among other things, require post-approval studies and clinical trials, mandate changes to drug labeling to reflect new safety information, and require risk evaluation and mitigation strategies for certain drugs, including certain currently approved drugs. In addition, it significantly expands the federal government's clinical trial registry and results databank and creates new restrictions on the advertising and promotion of drug products. Under the FDAAA, companies that violate these and other provisions of the law are subject to substantial civil monetary penalties.

In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and development of our product candidates and any products that we may commercialize. It is impossible to predict whether additional legislative changes will be enacted, or FDA regulations, guidance or interpretations changed, or what the impact of any such changes may be.

***Foreign Regulation***

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing, among other things, clinical trials and commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we must obtain the necessary approvals by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country and can involve additional product testing and additional review periods, and the time may be longer or shorter than that required to obtain FDA approval. The requirements governing, among other things, the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country. 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 negatively impact the regulatory process in others.

Under European Union regulatory systems, we may submit marketing authorization applications either under a centralized or decentralized procedure. The centralized procedure, which is compulsory for medicines produced by certain biotechnological processes and products with a new active substance indicated for the treatment of certain diseases such as cancer, and optional for those which are highly innovative, provides for the grant of a single marketing authorization that is valid for all European Union member states, or Member States. All marketing authorizations for products designated as orphan drugs must be granted in accordance with the centralized procedure. The decentralized procedure provides for approval by one or more other, or concerned, Member States of an assessment of an application performed by one Member State, known as the reference Member State. Under this procedure, an applicant submits an application, or dossier, and related materials including a draft summary of product characteristics, and draft labeling and package leaflet, to the reference Member State and concerned Member States. The reference Member State prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. Within 90 days of receiving the reference Member State's assessment report, each concerned Member State must decide whether to approve the assessment report and related materials. If a Member State cannot approve the assessment report and related materials on the grounds of potential serious risk to the public health, the disputed points may eventually be referred to the European Commission, whose decision is binding on all Member States.

**Pharmaceutical Pricing and Reimbursement**

In both domestic and foreign markets, sales of any products for which we receive regulatory approval for commercial sale will depend in part on the availability of reimbursement from third-party payors. Third-party payors include government healthcare program administrative authorities, managed care providers, private health insurers and other organizations. These third-party payors are increasingly challenging the price and examining the cost-effectiveness of medical products and services. In addition, significant uncertainty exists as to the scope of coverage and payment amounts for newly approved healthcare products. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products. Our product candidates may not be considered medically necessary or cost-effective. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

Any products for which we receive marketing approval may be eligible for coverage in the U.S. under the Medicare prescription drug benefit program, which became effective in January 2006. Government payment for some of the costs of prescription drugs may increase demand for any products for which we receive marketing approval. However, to obtain payments under this program, we would be required to sell products to Medicare

recipients through drug procurement organizations operating pursuant to this legislation. These organizations would negotiate discounted prices for our products, which are likely to be lower than we might otherwise charge. Any products for which we receive marketing approval may also be acquired by state-operated Medicaid programs. Medicaid rules constrain prices by requiring pharmaceutical suppliers to enter into rebate agreements that provide for quarterly payments to states based on the drug's average manufacturer price and best price, according to standards provided in Medicaid regulations. Private, non-governmental third-party payors frequently base their coverage policies and the prices they agree to pay on the policies and payment rates under the Medicare and Medicaid programs. Federal, state, and local governments in the United States continue to consider legislation to limit the growth of healthcare costs, including the cost of prescription drugs. Future legislation could limit payments for pharmaceuticals such as the drug candidates that we are developing.

The marketability of any products for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide adequate coverage and reimbursement. In addition, an increasing emphasis on managed care in the United States has increased and will continue to increase the pressure on pharmaceutical pricing.

Drug prices may be further constrained by possible Congressional action regarding drug reimportation into the United States. Some proposed legislation would allow the reimportation of approved drugs originally manufactured in the United States back into the United States from other countries where the drugs are sold at a lower price. Some governmental authorities in the U.S. are pursuing lawsuits to obtain expanded reimportation authority. Such legislation, regulations or judicial decisions could reduce the prices we receive for any products that we may develop, negatively affecting our revenues and prospects for profitability. Even without legislation authorizing reimportation, patients have been purchasing prescription drugs from Canadian and other non-United States sources, which has reduced the price received by pharmaceutical companies for their products.

**Manufacturing**

We do not currently own or operate manufacturing facilities for the production of clinical or commercial quantities of ICA-105665 and the lead compounds that we are developing for the treatment of epilepsy and pain. We currently rely, and expect to continue to rely, on third parties for the manufacture of our product candidates and any products that we may develop, other than small amounts of compounds that we synthesize ourselves for preclinical testing. We contract with one third-party manufacturer to supply us with ICA-105665 bulk drug substance and a second manufacturer to perform fill/finish services. We obtain our supplies of the product candidate from both of these manufacturers on a purchase order basis. If any of these manufacturers should become unavailable to us for any reason, we believe that there are a number of potential replacements, although we might incur some delay in identifying or qualifying such replacements.

All of our drug candidates are organic compounds of low molecular weight, generally called "small molecules." We have selected these compounds not only on the basis of their efficacy and safety, but also for their ease of synthesis and the low cost of their starting materials. In particular, ICA-105665 and the lead compounds that we are developing for the treatment of epilepsy and pain are manufactured in a simple synthetic process from readily available starting materials. There are no complicated chemistries or unusual equipment required in the manufacturing process. We expect to continue to develop drug candidates that can be produced cost-effectively at contract manufacturing facilities.

**Sales and Marketing**

If we receive regulatory approval for our product candidates, we plan to commence commercialization activities by building a focused sales and marketing organization complemented by copromotion and other arrangements with pharmaceutical or biotechnology collaborators. Our sales and marketing strategy is to:

- *Build our own domestic sales force.* We believe that we can access key prescribing physicians in the United States for a number of the drug candidates that we are developing through a relatively small,

specialized sales force. In particular, we believe that such a sales force could address the community of neurologists who specialize in the treatment of epilepsy, for which we recently completed a proof-of-concept study with positive results.

- *Recruit a marketing organization.* We plan to build a marketing and sales management organization to create and implement marketing strategies for any products that we market through our own sales organization and to oversee and support our sales force. The responsibilities of the marketing organization would include developing educational initiatives with respect to approved products and establishing relationships with thought leaders in relevant fields of medicine.
- *Establish marketing and sales alliances.* We plan to selectively enter into new strategic alliances with leading pharmaceutical and biotechnology companies to assist us in advancing our drug discovery and development programs. We also plan to retain United States marketing and sales rights or copromotion rights for our product candidates for which we receive marketing approvals in situations in which we believe it is possible to access the market through a focused, specialized sales force. For situations in which a large sales force is required to access the market and with respect to markets outside of the United States, we generally plan to commercialize our drug candidates through various types of collaboration arrangements with leading pharmaceutical and biotechnology companies.

**Scientific and Clinical Advisors**

We have relationships with scientific and clinical advisors who are leading experts in the fields of ion channel biology and chemistry, preclinical studies, drug manufacturing or clinical trials. Our scientific and clinical advisors consult with us regularly on matters relating to:

- our research and development programs;
- the design and implementation of our clinical trials;
- market opportunities from a clinical perspective;
- new technologies relevant to our research and development programs; and
- scientific and technical issues relevant to our business.

**Employees**

As of February 28, 2010, we had a total of 57 employees, 55 of whom were full-time, including 24 with doctoral degrees. Of our workforce, 49 employees are engaged in research and development and 8 are engaged in business development, finance and administration. None of our employees is represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

**Our Corporate Information**

We were incorporated under the laws of Delaware in November 1992. Our principal executive offices are located at 4222 Emperor Boulevard, Suite 350, Durham, North Carolina 27703, and our telephone number is (919) 941-5206.

**Available Information**

We maintain a website at www.icagen.com. We make available, free of charge on our website, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file those reports with, or furnish them to, the Securities and Exchange Commission, or the SEC. We also similarly make available, free of charge on our website, the reports filed with the SEC by our executive officers, directors and 10% stockholders pursuant

to Section 16 under the Exchange Act as soon as reasonably practicable after copies of those filings are provided to us by those persons. We are not including the information contained at www.icagen.com, or at any other Internet address as part of, or incorporating it by reference into, this Annual Report on Form 10-K.

## EXECUTIVE OFFICERS OF THE REGISTRANT

Our executive officers and their respective ages and positions as of February 28, 2010 are as follows:

| Name | Age | Position |
|---|---|---|
| P. Kay Wagoner, Ph.D. | 61 | President, Chief Executive Officer and Director |
| Richard D. Katz, M.D. | 46 | Executive Vice President, Finance and Corporate Development, Chief Financial Officer and Treasurer |
| Seth V. Hetherington, M.D. | 57 | Senior Vice President, Clinical and Regulatory Affairs |

*P. Kay Wagoner, Ph.D.* Dr. Wagoner is a co-founder of our company and has served as our president and a director since our inception and as chief executive officer since September 1996. Prior to founding Icagen, Dr. Wagoner served in research management positions at Glaxo Inc., a pharmaceutical company, where she initiated and led Glaxo's U.S. ion channel discovery efforts in central nervous system, cardiovascular and metabolic disease. Dr. Wagoner received her Ph.D. in physiology from the University of North Carolina, Chapel Hill. In 2001, Dr. Wagoner received the distinguished alumna award for science and business from the University of North Carolina, Chapel Hill. Dr. Wagoner also serves or has served on a variety of boards of directors, including the University of North Carolina's Graduate School Advisory Board and the Governing Body of the Biotechnology Industry Organization's (BIO) Emerging Companies Section. In 2004, Dr. Wagoner was awarded the Entrepreneurial Excellence Award by the Research Triangle based Council for Entrepreneurial Development, the largest entrepreneurial support organization in the United States, and the Ernst & Young Entrepreneur of the Year Regional Award for Life Sciences and Healthcare.

*Richard D. Katz, M.D.* Dr. Katz has been our executive vice president, finance and corporate development, chief financial officer and treasurer since March 2008. From April 2001 to March 2008, Dr. Katz was our senior vice president, finance and corporate development, chief financial officer and treasurer. From August 1996 to 2001, Dr. Katz worked in the Investment Banking Division of Goldman Sachs, an investment banking firm, most recently as a vice president in the Healthcare Group. Prior to joining Goldman Sachs, Dr. Katz earned a Masters in Business Administration from Harvard Business School where he graduated as a Baker Scholar. Dr. Katz earned his M.D. from the Stanford University School of Medicine and completed an internship in general surgery at the Hospital of the University of Pennsylvania. Dr. Katz received his A.B. in applied mathematics with high distinction from Harvard University.

*Seth V. Hetherington, M.D.* Dr. Hetherington has been our senior vice president, clinical and regulatory affairs since June 2006. From June 2002 to June 2006, Dr. Hetherington served as Vice President, Clinical Development and Chief Medical Officer at Inhibitex, Inc., a biotechnology company. From May 1995 to June 2002, Dr. Hetherington held positions of increasing responsibility in clinical development, most recently Clinical Program Head, at GlaxoSmithKline and Glaxo Wellcome. Prior to joining Glaxo Wellcome, Dr. Hetherington held appointments at several leading academic medical centers, including the University of Tennessee, St. Jude Children's Research Hospital in Memphis and Albany Medical College. Dr. Hetherington earned his M.D. at the University of North Carolina, Chapel Hill.

Our officers are elected on an annual basis and serve at the discretion of our Board of Directors.

## ITEM 1A—RISK FACTORS

### Risks Related to Our Financial Results and Need for Additional Financing

***As a result of our current lack of liquidity, our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a "going concern."***

Our limited capital resources and operations to date have been funded primarily with proceeds from public and private equity financings and corporate collaboration and licensing arrangements. Based on our currently available cash, we do not have adequate cash on hand to cover our anticipated expenses; our lease, debt and other obligations; and our capital expenditure requirements for the next 12 months. If we fail to secure additional funding, we may be required to delay, reduce the scope of or eliminate one or more of our research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws. These conditions have caused our independent registered public accounting firm to raise substantial doubt about our ability to continue as a going concern. Consequently, the audit report prepared by our independent registered public accounting firm relating to our financial statements for the year ended December 31, 2009 includes a going concern explanatory paragraph.

***We will need substantial additional funding and may be unable to raise capital when needed, which would force us to delay, reduce or eliminate our product development programs or commercialization efforts; cease operations; or seek relief under applicable bankruptcy laws.***

As of December 31, 2009, we had cash and cash equivalents of $18.1 million. In order to conserve capital, during 2009 we implemented a limited reduction of our workforce and other cost reduction measures. We believe that based on our current operating plan, our existing cash and cash equivalents will be sufficient to enable us to fund our operations; our lease, debt and other obligations; and our capital expenditure requirements into the third quarter of 2010. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources" below. We will need additional funds to meet our obligations and fund operations beyond that time. Except for collaboration revenue we expect to receive from Pfizer as funding for research and development activities, we do not currently have any commitments for future external funding.

Additional equity or debt financing, or corporate collaboration and licensing arrangements, may not be available on acceptable terms, if at all, particularly in the current economic environment. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws. In June 2009, we announced that we had retained J.P. Morgan to provide advice and assistance on a range of possible transactions, including the formation of one or more collaborations or the potential acquisition of our company. There can be no assurance that, if any transaction is commenced, it will be completed or as to the value that any such transaction might have for our stockholders.

Until such time, if ever, as we can generate substantial product revenues, we will be required to finance our cash needs through public or private equity offerings, debt financings and corporate collaboration and licensing arrangements. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Any debt financing or additional equity that we may raise may contain terms, such as liquidation and other preferences, that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish valuable rights to our technologies, research programs or product candidates or grant licenses on terms that may not be favorable to us.

If sufficient funding is available and the scope of the clinical trials that we are conducting expands, we expect our research and development expenses to continue and to increase in connection with our ongoing

activities. In addition, subject to regulatory approval of any of our product candidates, we expect to incur significant commercialization expenses for product sales, marketing, manufacturing and distribution. Our future capital requirements will depend on many factors, including:

- the scope and results of our research, preclinical and clinical development activities;
- the timing of, and the costs involved in, obtaining regulatory approvals;
- the cost of commercialization activities, including product marketing, sales and distribution;
- the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims and other patent-related costs, including litigation costs and the results of such litigation;
- the extent to which we acquire or invest in businesses, products and technologies;
- the success of our collaboration with Pfizer; and
- our ability to establish and maintain additional collaborations.

During 2009, we conducted two proof-of-concept clinical trials of senicapoc in asthma. Although the results of the allergen challenge asthma study were generally favorable, results of the exercise induced asthma study were negative. As a result, we do not intend to continue the clinical development of senicapoc for asthma. This may impair our ability to raise capital.

***We have incurred losses since inception and anticipate that we will continue to incur substantial losses for the foreseeable future. We might never achieve or maintain profitability.***

We have a limited operating history and have not yet commercialized any products or generated any product revenues. As of December 31, 2009, we had an accumulated deficit of $139.2 million. We have incurred losses in each year since our inception in 1992. Our net losses were $12.8 million in 2009, $14.8 million in 2008 and $10.9 million in 2007. These losses resulted principally from costs incurred in our research and development programs and from our general and administrative expenses. Provided that sufficient funding is available, we expect to continue to incur significant operating losses for at least the next several years as we continue our research activities, conduct development of, and seek regulatory approvals for, our initial drug candidates, and commercialize any approved drugs. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity, total assets and working capital.

We have financed our operations and internal growth principally through the issuance of equity securities and funding under collaborations with leading pharmaceutical companies. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any drugs. Because of the numerous risks and uncertainties associated with developing drugs targeting ion channels, we are unable to predict the extent of any future losses, whether or when any of our product candidates will become commercially available, or when we will become profitable, if at all. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

If we are unable to achieve and then maintain profitability, the market value of our common stock will decline.

***Our business and results of operations may be negatively impacted by general economic and financial market conditions and such conditions may exacerbate the other risks that affect our business.***

The world's financial markets are currently experiencing significant turmoil, resulting in reductions in available credit, constraints in access to capital, extreme volatility in security prices, rating downgrades of investments and reduced valuations of securities generally. These economic conditions have had, and we expect will continue to have, an adverse impact on the pharmaceutical and biotechnology industries. Our business depends on our ability to raise substantial additional capital and to maintain and enter into new collaborative

research, development and commercialization agreements with leading pharmaceutical and biotechnology companies. Current market conditions could impair our ability to raise additional capital when needed for our research and development programs, or on attractive terms. Our arrangements with collaborators typically require our collaborators to make a significant commitment of capital and other resources. Recent economic conditions may reduce the amount of discretionary investment that our current collaborator and prospective collaborators may have available to invest in our business. This may result in prospective collaborators electing to defer entering into collaborative agreements with us, or our existing collaborator choosing not to extend our existing collaboration beyond the one-year renewal research term, which expires in September 2010. A reduction in research and development funding, even if economic conditions improve, would significantly adversely impact our business, operating results and financial condition.

We are unable to predict the likely duration and severity of the current disruption in financial markets and adverse economic conditions in the U.S. and abroad, but the longer the duration the greater risks we face in operating our business. There can be no assurance, therefore, that current economic conditions or worsening economic conditions or a prolonged or recurring recession will not have a significant adverse impact on our operating results.

***If we fail to continue to meet all applicable Nasdaq Global Market requirements and Nasdaq determines to delist our common stock, the delisting could adversely affect the market liquidity of our common stock, impair the value of your investment and harm our business.***

Our common stock is listed on the Nasdaq Global Market. In order to maintain that listing, we must satisfy minimum financial and other requirements. On November 12, 2009, we received notice from the Nasdaq Listing Qualifications Department that our common stock had not met the $1.00 per share minimum bid price requirement for 30 consecutive business days and that, if we were unable to demonstrate compliance with this requirement during the applicable grace periods, our common stock would be delisted after that time.

The closing bid price of our common stock on the Nasdaq Global Market was $0.54 on March 15, 2010, and has been below $1.00 each trading day since September 30, 2009. As a result, it is likely that we will be subject to a delisting of our common stock from the Nasdaq Global Market in the near future. We may seek shareholder approval to effect a reverse stock split to prevent our common stock from dropping below the minimum bid price requirement; however, a reverse stock split may not prevent the common stock from dropping back down towards the Nasdaq minimum per share price requirement or below the required level. It is also possible that we would otherwise fail to satisfy another Nasdaq requirement for continued listing of our common stock.

If we fail to continue to meet all applicable Nasdaq Global Market requirements in the future and Nasdaq determines to delist our common stock, the delisting could adversely affect the market liquidity of our common stock, adversely affect our ability to obtain financing for the continuation of our operations and harm our business. This delisting could also impair the value of your investment.

***If our stock price is volatile, purchasers of our common stock could incur substantial losses.***

Our stock price is likely to be volatile. The stock market in general and the market for biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies, particularly in recent months due to the turmoil in world financial markets. As a result of this volatility, investors may not be able to sell their common stock at or above the price at which they purchase it. The market price for our common stock may be influenced by many factors, including:

- results of clinical trials of our product candidates or those of our competitors;
- regulatory developments in the United States and foreign countries;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;

- market conditions in the pharmaceutical and biotechnology sectors and issuance of new or changed securities analysts' reports or recommendations;
- general economic, industry and market conditions; and
- the other factors described in this "Risk Factors" section.

## Risks Related to Development of Product Candidates

***We depend heavily on the success of our most advanced internal product candidate, ICA-105665 and our other lead compounds for epilepsy and pain, which are still under development. If we are unable to commercialize any of these product candidates, or experience significant delays in doing so, our business will be materially harmed.***

We have invested a significant portion of our efforts and financial resources in the development of our most advanced internal product candidates, ICA-105665 and our other lead compounds for the treatment of epilepsy and pain. Our ability to generate product revenues, which we do not expect in any case will occur for at least the next several years, will depend heavily on the successful development and commercialization of these product candidates. The commercial success of these product candidates will depend on several factors, including the following:

- successful completion of clinical trials;
- receipt of marketing approvals from the FDA and similar foreign regulatory authorities;
- establishing commercial manufacturing arrangements with third-party manufacturers;
- launching commercial sales of the product, whether alone or in collaboration with others; and
- acceptance of the product in the medical community and with third-party payors.

Our efforts to commercialize ICA-105665 and the other lead compounds that we are developing for epilepsy and pain are at an early stage. We submitted an Investigational New Drug, or IND, and began Phase I clinical trials with respect to ICA-105665 during the third quarter of 2007. The results of these Phase I trials were reported during the second quarter of 2009. In March 2009, we received notification from the FDA, that, based on a review of certain preclinical data, ICA-105665 had been placed on partial clinical hold. This partial clinical hold related to the development of ICA-105665 for epilepsy but did not pertain to studies of the compound for pain. We submitted to the FDA additional preclinical data along with a revised protocol for a study of ICA-105665 in patients with photosensitive epilepsy. In July 2009, the FDA lifted the partial clinical hold. Accordingly, we initiated a study in patients with photosensitive epilepsy during the third quarter of 2009, for which we reported positive results during the first quarter of 2010. We also initiated a pain study of ICA-105665 in healthy volunteers during the third quarter of 2009, for which we reported negative results during the first quarter of 2010. If we are not successful in commercializing ICA-105665 or one of our other lead compounds for epilepsy and pain, or are significantly delayed in doing so, our business will be materially harmed.

We submitted an IND for senicapoc as a potential treatment for asthma during the fourth quarter of 2007 and initiated a Phase I multiple dose escalation study to explore doses higher than those used in previous clinical trials for sickle cell disease during the first quarter of 2008. This trial was completed during the third quarter of 2008. In October 2008, we initiated a Phase II proof-of-concept clinical trial in patients with allergic asthma, and in March 2009, we initiated a Phase II proof-of-concept clinical trial in patients with exercise-induced asthma to evaluate the safety and efficacy of senicapoc as a potential treatment for asthma. Although the results of the allergen challenge asthma study were generally favorable, results of the exercise induced asthma study were negative. As a result, we do not intend to continue the clinical development of senicapoc at this time.

***We will not be able to commercialize our product candidates if our preclinical studies do not produce successful results or our clinical trials do not demonstrate safety and efficacy in humans.***

Before obtaining regulatory approval for the sale of our product candidates, we must conduct, at our own expense, extensive preclinical tests and clinical trials to demonstrate the safety and efficacy in humans of our product candidates. Preclinical and clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful, and interim results of a clinical trial do not necessarily predict final results. A failure of one or more of our clinical trials can occur at any stage of testing. We may experience numerous unforeseen events during, or as a result of, preclinical testing and the clinical trial process that could delay or prevent our ability to receive regulatory approval or commercialize our product candidates, including:

- regulators or institutional review boards may not authorize us to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- our preclinical tests or clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional preclinical testing or clinical trials or we may abandon projects that we expect to be promising. For example, our pivotal Phase III clinical trial of senicapoc for sickle cell disease and our more recent development program of senicapoc for asthma were not successful;
- enrollment in our clinical trials may be slower than we currently anticipate, resulting in significant delays. Additionally, participants may drop out of our clinical trials;
- we might have to suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks;
- regulators or institutional review boards may require that we hold, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements. For example, in March 2009, we received notification from the FDA, that, based on a review of certain preclinical data, ICA-105665 had been placed on partial clinical hold;
- the cost of our clinical trials may be greater than we currently anticipate;
- any regulatory approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the product not commercially viable; and
- the effects of our product candidates may not be the desired effects or may include undesirable side effects or the product candidates may have other unexpected characteristics.

During 2008, we completed a Phase I multiple dose escalation study of senicapoc to explore doses higher than those used in previous clinical trials. In October 2008, we initiated a Phase II proof-of-concept study of senicapoc in patients with allergic asthma, and in March 2009, we initiated a Phase II study of senicapoc in patients with exercise-induced asthma. Although the results of the allergen challenge asthma study were generally favorable, results of the exercise induced asthma study were negative. As a result, we do not intend to continue the clinical development of senicapoc for asthma.

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

- be delayed in obtaining marketing approval for our product candidates;
- not be able to obtain marketing approval; or
- obtain approval for indications that are not as broad as intended.

Our product development costs will also increase if we experience delays in testing or approvals. We do not know whether planned clinical trials will begin as planned, will need to be restructured or will be completed on schedule, if at all. For example, in our Phase III trial of senicapoc, the DMC initially recommended a modification to the protocol and subsequently recommended termination of the trial, as described above. Significant clinical trial delays also could allow our competitors to bring products to market before we do and impair our ability to commercialize our products or product candidates.

## Risks Related to Our Dependence on Third Parties for Manufacturing, Research and Development and Marketing and Distribution Activities

***We depend significantly on collaborations with third parties to discover, develop and commercialize some of our product candidates.***

A key element of our business strategy is to collaborate with third parties, particularly leading pharmaceutical companies, to research, develop and commercialize some of our product candidates. We are currently a party to one such collaboration with Pfizer. In 2009, research funding from our collaboration with Pfizer accounted for all of our net revenues. Our collaboration with McNeil terminated effective September 18, 2007. Our collaboration with Bristol-Myers Squibb concluded in the third quarter of 2007 upon notification by Bristol-Myers Squibb that it was no longer pursuing a lead compound discovered in collaboration with us for the treatment of atrial fibrillation. Unless the one-year renewal term of the research phase of the collaboration is extended, the substantial majority of our research funding under our collaboration with Pfizer is scheduled to end in September 2010. Our collaborations may not be scientifically or commercially successful. The termination of any of these arrangements might adversely affect the development of the related product candidates and our ability to derive revenue from them.

The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Our collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations. The risks that we face in connection with these collaborations, and that we anticipate being subject to in future collaborations, include the following:

- our collaboration agreements are for fixed terms and subject to termination by our collaborators in the event of a material breach by us;
- our collaborators in some cases have the first right to maintain or defend our intellectual property rights and, although we have the right to assume the maintenance and defense of our intellectual property rights if our collaborators do not, our ability to do so may be compromised by our collaborators' acts or omissions; and
- our collaborators may utilize our intellectual property rights in such a way as to invite litigation that could jeopardize or invalidate our intellectual property rights or expose us to potential liability.

Collaborations with pharmaceutical companies and other third parties often are terminated or allowed to expire by the other party. A termination or expiration of our current collaboration with Pfizer or any potential future collaborations would adversely affect us financially and could harm our business reputation.

***If one of our collaborators were to change its strategy or the focus of its development and commercialization efforts with respect to our relationship, the success of our product candidates and our operations could be adversely affected.***

There are a number of factors external to us that may change our collaborators' strategy or focus with respect to our relationship with them. For example:

- our collaborators may develop and commercialize, either alone or with others, products and services that are similar to or competitive with the products that are the subject of the collaboration with us;

- our collaborators may change the focus of their development and commercialization efforts. Pharmaceutical and biotechnology companies historically have re-evaluated their priorities from time to time, including following mergers and consolidations, which have been common in recent years in these industries. For example, during 2006 Johnson & Johnson acquired the Consumer Healthcare Business of Pfizer Pharmaceuticals, and integrated this unit with McNeil, and in October 2009, Pfizer acquired Wyeth; and
- the ability of our product candidates and products to reach their potential could be limited if our collaborators decrease or fail to increase spending relating to such products. For example, McNeil provided notification of termination of our collaboration, effective as of September 18, 2007.

If any of the above factors were to occur, our collaborator might terminate the collaboration or not commit sufficient resources to the development, manufacture or marketing and distribution of our product or product candidate that is the subject of the collaboration. In such event, we might be required to devote additional resources to the product or product candidate, seek a new collaborator or abandon the product or product candidate, any of which could have an adverse effect on our business.

***We may not be successful in establishing additional collaborations, which could adversely affect our ability to discover, develop and commercialize products.***

If we are unable to reach new agreements with suitable collaborators, we may fail to meet our business objectives for the affected product or program. We face significant competition in seeking appropriate collaborators. Moreover, these collaboration arrangements are complex and time-consuming to negotiate and document. We may not be successful in our efforts to establish additional collaborations or other alternative arrangements. The terms of any additional collaborations or other arrangements that we establish may not be favorable to us. Moreover, these collaborations or other arrangements may not be successful.

***If third parties do not manufacture our product candidates in sufficient quantities and at an acceptable cost, clinical development and commercialization of our product candidates could be delayed, prevented or impaired.***

We do not currently own or operate manufacturing facilities and have little experience in manufacturing pharmaceutical products. We rely and expect to continue to rely on third parties for the production of clinical and commercial quantities of our product candidates. There are a limited number of manufacturers that operate under the FDA's cGMP regulations and that are both capable of manufacturing for us and willing to do so. We do not have any long-term manufacturing agreements with third parties, and manufacturers under our short-term supply agreements are not obligated to accept any purchase orders we may submit. Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our future profit margins and our ability to develop product candidates and commercialize any products that receive regulatory approval on a timely and competitive basis. In particular, if the third parties that are currently manufacturing the lead compounds, including ICA-105665, which we are developing for the treatment of epilepsy and pain, for our preclinical studies or clinical trials should cease to continue to do so for any reason, we expect that we would experience delays in advancing these trials while we identify and qualify replacement suppliers.

***Use of third-party manufacturers may increase the risk that we will not have adequate supplies of our product candidates.***

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured product candidates or products ourselves, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party; and
- the possible termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or inconvenient for us.

If we are not able to obtain adequate supplies of our product candidates and any approved products, it will be more difficult for us to develop our product candidates and compete effectively. Our product candidates and any products that we successfully develop may compete with product candidates and products of third parties for access to manufacturing facilities.

Our contract manufacturers are subject to ongoing, periodic, unannounced inspection by the FDA and corresponding state and foreign agencies or their designees to ensure strict compliance with cGMP regulations and other governmental regulations and corresponding foreign standards. We cannot be certain that our present or future manufacturers will be able to comply with cGMP regulations and other FDA regulatory requirements or similar regulatory requirements outside the United States. We do not control compliance by our contract manufacturers with these regulations and standards. Failure of our third-party manufacturers or us to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates and products.

***If third parties on whom we rely for clinical trials do not perform as contractually required or as we expect or fail to comply with all applicable regulatory requirements, we may not be able to obtain regulatory approval for or commercialize our product candidates, and our business may suffer.***

We do not have the ability to independently conduct the clinical trials required to obtain regulatory approval for our products. We depend on independent clinical investigators, contract research organizations and other third-party service providers to conduct the clinical trials of our product candidates and expect to continue to do so for at least the next several years. We rely on Quintiles Transnational Corp. for the performance of some of our clinical trials. One of our directors, Dr. Dennis B. Gillings, is chairman and chief executive officer of Quintiles Transnational Corp., and PharmaBio Development Inc. d/b/a NovaQuest, the holder of approximately 4% of our outstanding capital stock, is a wholly owned subsidiary of Quintiles Transnational Corp.

We rely heavily on independent clinical investigators, contract research organizations and other third-party service providers for successful execution of our clinical trials, but do not control many aspects of their activities. We are responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as Good Clinical Practices, for conducting and recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. The FDA closely monitors the progress of clinical trials that are conducted in the U.S., and the FDAAA significantly expands the federal government's clinical trial registry to cover more trials and more information, including information on the results of completed trials. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. Third parties may not complete activities on schedule, or may not conduct our clinical trials in accordance with regulatory requirements or our stated protocols. The failure of these third parties to carry out their obligations could delay or prevent the development, approval and commercialization of our product candidates.

Provided that our clinical development program is successful, we plan to expand our internal clinical development and regulatory capabilities. We will not be successful in doing so unless we are able to recruit appropriately trained personnel and add to our infrastructure.

## Risks Related to Our Intellectual Property

***If we are unable to obtain and maintain protection for the intellectual property relating to our technology and products, the value of our technology and products will be adversely affected.***

Our success will depend in large part on our ability to obtain and maintain protection in the United States and other countries for the intellectual property covering or incorporated into our technology and products. The

patent situation in the field of biotechnology and pharmaceuticals generally is highly uncertain and involves complex legal and scientific questions. We may not be able to obtain additional issued patents relating to our technology or products. Even if issued, patents may be challenged, narrowed, invalidated or circumvented, which could limit our ability to stop competitors from marketing similar products or limit the length of term of patent protection we may have for our products. Changes in either patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property or narrow the scope of our patent protection.

Our patents also may not afford us protection against competitors with similar technology. Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in the scientific literature often lag behind actual discoveries, neither we nor our licensors can be certain that we or they were the first to make the inventions claimed in issued patents or pending patent applications, or that we or they were the first to file for protection of the inventions set forth in these patent applications.

***If we fail to comply with our obligations in our intellectual property licenses with third parties, we could lose license rights that are important to our business.***

We are a party to a number of license agreements. We consider only our license with Children's Medical Center Corporation, or CMCC, to be material to our business. We expect to enter into additional licenses in the future. Our existing licenses impose, and we expect future licenses will impose, various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, the licensor may have the right to terminate the license, in which event we might not be able to market any product that is covered by the licensed patents.

***If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.***

In addition to patented technology, we rely upon unpatented proprietary technology, processes and know-how. We seek to protect this information in part by confidentiality agreements with our employees, consultants and third parties. These agreements may be breached, and we may not have adequate remedies for any such breach. In addition, our trade secrets may otherwise become known or be independently developed by competitors. If we are unable to protect the confidentiality of our proprietary information and know-how, competitors may be able to use this information to develop products that compete with our products, which could adversely impact our business.

***If we infringe or are alleged to infringe intellectual property rights of third parties, it will adversely affect our business.***

Our research, development and commercialization activities, as well as any product candidates or products resulting from these activities, may infringe or be claimed to infringe patents or patent applications under which we do not hold licenses or other rights. Third parties may own or control these patents and patent applications in the United States and abroad. These third parties could bring claims against us or our collaborators 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 or our collaborators, we or they could be forced to stop or delay research, development, manufacturing or sales of the product or product candidate that is the subject of the suit.

As a result of patent infringement claims, or in order to avoid potential claims, we or our collaborators may choose or be required to seek a license from the third party and be required to pay license fees or royalties or both. These licenses may not be available on acceptable terms, or at all. Even if we or our collaborators were able to obtain a license, the rights may be nonexclusive, 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 or our collaborators are unable to enter into licenses on acceptable terms. This could harm our business significantly.

There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the pharmaceutical and biotechnology industries. In addition to infringement claims against us, we may become a party to other patent litigation and other proceedings, including interference proceedings declared by the United States Patent and Trademark Office and opposition proceedings in the European Patent Office, regarding intellectual property rights with respect to our products and technology. The cost to us of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Patent litigation and other proceedings may also absorb significant management time.

## Risks Related to Regulatory Approval of Our Product Candidates

***If we are not able to obtain required regulatory approvals, we will not be able to commercialize our product candidates, and our ability to generate revenue will be materially impaired.***

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

The process of obtaining regulatory approvals is expensive, often takes many years, if approval is obtained at all, and can vary substantially based upon the type, complexity and novelty of the product candidates involved. Changes in the regulatory approval policy during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may delay or prevent regulatory approval of an application. The FDA has substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing or negative, inconsistent or inconclusive results obtained from preclinical or clinical trials could delay, limit or prevent regulatory approval of a product candidate.

***Our products could be subject to restrictions or withdrawal from the market and we may be subject to penalties if we fail to comply with regulatory requirements, or if we experience unanticipated problems with our products, when and if any of them are approved.***

Any product for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to continual requirements of and review by the FDA and other regulatory bodies. These requirements include,

among other things, submissions of safety and other post-marketing information and reports, registration requirements, cGMP requirements relating to quality control, quality assurance and corresponding maintenance of records and documents, and requirements regarding the distribution of samples to physicians and recordkeeping. Even if regulatory approval of a product is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Later discovery of previously unknown problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in:

- restrictions on such products, manufacturers or manufacturing processes;
- warning letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- required labeling changes;
- required post-marketing studies or clinical trials;
- distribution and use restrictions;
- voluntary recall;
- fines;
- suspension or withdrawal of regulatory approvals;
- refusal to permit the import or export of our products;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

***Failure to obtain regulatory approval in international jurisdictions would prevent us from marketing our products abroad.***

We intend to market our products, if approved, outside the United States. In order to market our products in the European Union and other foreign jurisdictions, we must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. With respect to some of our product candidates, our collaborator has, or we expect that a future collaborator will have, responsibility to obtain regulatory approvals outside the United States, and we will depend on our collaborators to obtain these approvals. The approval procedure varies among countries and can involve additional testing and additional review periods. The time required to obtain approval may differ from and may be longer than that required to obtain FDA approval. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval as well as additional risks. We may not obtain foreign regulatory approvals on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or jurisdictions or by the FDA, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regulatory process in others. We and our collaborators may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market.

## Risks Related to Commercialization

***The commercial success of any products that we may develop will depend upon the degree of market acceptance by physicians, patients, healthcare payors and others in the medical community.***

Any products that we bring to the market may not gain market acceptance by physicians, patients, healthcare payors and others in the medical community. If these products do not achieve an adequate level of

acceptance, we may not generate material product revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the prevalence and severity of any side effects;
- the efficacy and potential advantages over alternative treatments;
- the ability to offer our product candidates for sale at competitive prices;
- relative convenience and ease of administration;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support; and
- sufficient third-party coverage or reimbursement.

***If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate product revenues.***

We do not have a sales organization and have no experience in the sale, marketing or distribution of pharmaceutical products. To achieve commercial success for any approved product, we must either develop a sales and marketing organization or outsource these functions to third parties. Currently, we plan to build a focused specialty sales and marketing infrastructure to market or copromote some of our product candidates if and when they are approved. There are risks involved with establishing our own sales and marketing capabilities, as well as in entering into arrangements with third parties to perform these services. For example, developing a sales force is expensive and time-consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed as a result of FDA requirements or other reasons, we would incur related expenses too early relative to the product launch. This may be costly, and our investment would be lost if we cannot retain our sales and marketing personnel. In addition, marketing and promotion arrangements in the pharmaceutical industry are heavily regulated, and many marketing and promotional practices that are common in other industries are prohibited or restricted. These restrictions are often ambiguous and subject to conflicting interpretations, but carry severe administrative, civil, and criminal penalties for noncompliance. It may be costly to implement internal controls to facilitate compliance by our sales and marketing personnel.

***If we are unable to obtain adequate reimbursement from third-party payors for any products that we may develop or acceptable prices for those products, our revenues and prospects for profitability will suffer.***

Most patients will rely on Medicare and Medicaid, private health insurers and other third-party payors to pay for their medical needs, including any drugs we or our collaborators may market. If third-party payors do not provide adequate coverage or reimbursement for any products that we may develop, our revenues and prospects for profitability will suffer.

Regulatory approval to market a drug product does not assure that the product will be eligible for coverage by third-party payors or, assuming it is covered, that it will receive a profitable price. The process for obtaining third-party coverage and payment is costly and time-consuming. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products. Our products may not be considered medically necessary or cost- effective. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

Coverage through the Medicare prescription drug benefit program may increase demand for our products, but participating suppliers are required to negotiate prices with drug procurement organizations on behalf of

Medicare beneficiaries. These prices are likely to be lower than we might otherwise obtain. Future legislation might allow government agencies to negotiate prices directly with drug companies, which could lead to even lower prices. Drugs sold to state-operated Medicaid programs are subject to mandatory rebate agreements that require quarterly payments to states based on the drug's average manufacturer price and best price. Private, non-governmental third-party payors frequently base their coverage policies and the prices they are willing to pay on the policies and payment rates under the Medicare and Medicaid programs.

A primary trend in the United States healthcare industry is toward cost containment. Third-party payors are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly-approved healthcare products. In particular, third-party payors may limit the indications for which they will reimburse patients who use any products that we may develop. Cost control initiatives could decrease the price we might establish for products that we may develop, which would result in lower product revenues to us. Moreover, the U.S. Congress recently enacted major legislation that will dramatically overhaul the health care system in the United States and that could significantly change the market for pharmaceuticals.

U.S. drug prices may be further constrained by possible Congressional action regarding drug reimportation into the United States. Legislation proposed in past Congressional sessions would allow the reimportation of approved drugs originally manufactured in the United States back into the United States from other countries where the drugs are sold at a lower price. Some governmental authorities in the U.S. are pursuing lawsuits to obtain expanded reimportation authority. Such legislation, regulations, or judicial decisions could reduce the prices we receive for any products that we may develop, if approved, negatively affecting our revenues and prospects for profitability. Alternatively, in response to legislation such as this, we might elect not to seek approval for or market our products in foreign jurisdictions in order to minimize the risk of reimportation, which could also reduce the revenue we generate from our product sales. Even without legislation authorizing reimportation, patients have been purchasing prescription drugs from Canadian and other non-United States sources, which has reduced the price received by pharmaceutical companies for their products.

In addition, in some foreign countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take six to 12 months or longer after the receipt of regulatory marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidates or products to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in commercialization of our products.

***If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of any products that we may develop.***

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

- decreased demand for any product candidates or products that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

We have product liability insurance that covers our clinical trials up to a $5.0 million annual aggregate limit with a deductible of $25,000 per claim. The amount of insurance that we currently hold may not be adequate to cover all liabilities that may occur. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for any products. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost and we may not be able to obtain insurance coverage that will be adequate to satisfy any liability that may arise.

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

The development and commercialization of new drugs is highly competitive. We face competition with respect to our current product candidates and any products we may seek to develop or commercialize in the future from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Our competitors may develop products that are more effective, safer, more convenient or less costly than any that we are developing. Our competitors may also obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours. We believe that our most significant competitors in the area of drugs that work by modulating the activity of ion channels are large pharmaceutical companies which have internal ion channel drug discovery groups as well as smaller more focused companies engaged in ion channel drug discovery.

There are approved products on the market for all of the diseases and indications for which we are developing products. In many cases, these products have well known brand names, are distributed by large pharmaceutical companies with substantial resources and have achieved widespread acceptance among physicians and patients. In addition, we are aware of product candidates of third parties that are in development, which, if approved, would compete against product candidates for which we receive marketing approval.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to or necessary for our programs or advantageous to our business.

***Our business activities involve the use of hazardous materials, which require compliance with environmental and occupational safety laws regulating the use of such materials. If we violate these laws, we could be subject to significant fines, liabilities or other adverse consequences.***

Our research and development programs involve the controlled use of hazardous materials. Accordingly, we are subject to federal, state and local laws governing the use, handling and disposal of these materials. Although we believe that our safety procedures for handling and disposing of these materials comply in all material respects with the standards prescribed by state and federal regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In addition, our collaborators may not comply with these laws. In the event of an accident or failure to comply with environmental laws, we could be held liable for damages that result, and any such liability could exceed our assets and resources. We maintain liability insurance for some of these risks, but our policy excludes pollution and has a coverage limit of $5.0 million.

## Risks Related to Employees and Growth

***If we fail to attract and keep senior management and key scientific personnel, we may be unable to successfully develop or commercialize our product candidates.***

Our success depends on our continued ability to attract, retain and motivate highly qualified managerial and key scientific personnel. We consider retaining Dr. P. Kay Wagoner, our president and chief executive officer, to be key to our efforts to develop and commercialize our product candidates. All of our employees, other than Dr. Wagoner, Dr. Richard D. Katz and Dr. Seth V. Hetherington, are at-will employees and can terminate their employment at any time. Our employment agreements with Dr. Wagoner, Dr. Katz and Dr. Hetherington are terminable by them on short notice.

Our business requires us to maintain a significant number of qualified scientific and commercial personnel, including clinical development, regulatory, marketing and sales executives and field personnel, as well as administrative personnel. During the third quarter of 2009 we implemented a number of cost savings measures in an effort to conserve cash, including a limited reduction in the workforce. There is competition from other companies and research and academic institutions for qualified personnel in the areas of our activities. If we cannot continue to retain and attract, on acceptable terms, the qualified personnel necessary for the continued development of our business, we may not be able to sustain our operations or grow.

## Risks Relating to Our Private Placements

***The number of shares of our common stock outstanding has increased substantially as a result of the private placement that closed on February 6, 2007, and certain purchasers beneficially own significant blocks of our common stock; these shares are generally available for resale in the public market.***

Upon the closing of a private placement on February 6, 2007, we issued to a group of institutional and other accredited investors a total of 15,423,640 shares of our common stock, plus warrants to purchase a total of 5,398,256 additional shares of common stock. We refer to this transaction as the private placement. The issuance of these shares and warrants resulted in substantial dilution to stockholders who held our common stock prior to the private placement. Certain purchasers in the private placement will have significant influence over the outcome of any stockholder vote, including the election of directors and the approval of mergers or other business combination transactions. These shares are generally available for immediate resale in the public market. The market price of our common stock could fall due to an increase in the number of shares available for sale in the public market.

***The number of shares of our common stock outstanding has increased substantially as a result of the equity investments by Pfizer that closed on August 20, 2007 and February 13, 2008; Pfizer beneficially owns a significant block of our common stock; and upon registration under the Securities Act of 1933, as amended, or the Securities Act, these shares will be generally available for resale in the public market.***

Upon the closing of the equity investment by Pfizer on August 20, 2007, we issued 2,668,172 shares of our common stock to Pfizer. Upon the closing of the equity investment by Pfizer on February 13, 2008, we issued an additional 5,847,953 shares of our common stock to Pfizer as a result of the exercise of our put option to sell to Pfizer up to an additional $10.0 million of common stock at the fair market value of the common stock at the time of exercise. The issuance of the aggregate of 8,516,125 shares to Pfizer, which owns approximately 18% of our common stock as of July 31, 2009, resulted in substantial dilution to stockholders who held our common stock prior to the equity investments by Pfizer.

In accordance with the purchase agreement for the equity investment by Pfizer, we have agreed to file, at any time after August 20, 2008, upon the request of Pfizer, a registration statement with the SEC covering the resale of the aggregate number of shares issued pursuant to the purchase agreement. Upon such registration of the

shares issued in the equity investment by Pfizer, these shares will become generally available for immediate resale in the public market. In addition, Pfizer may sell these shares prior to their registration in transactions exempt from registration under the Securities Act. The market price of our common stock could fall due to an increase in the number of shares available for sale in the public market or if Pfizer decides to sell our shares of common stock.

***If we do not obtain and maintain effectiveness of the registration statement covering the resale of the shares issued in the equity investment by Pfizer, upon the request of Pfizer, we will be required to pay certain liquidated damages, which could be material in amount.***

The terms of the purchase agreement that we entered into in connection with the equity investment by Pfizer require us to pay liquidated damages to Pfizer in the event that we do not file the registration statement with the SEC within 30 days after the request by Pfizer to file such registration statement, the registration statement does not become effective or its effectiveness is not maintained beginning 90 days after the registration request (if the registration statement is not reviewed by the SEC) or 120 days after the registration request (if it is so reviewed) or, after the registration statement is declared effective by the SEC, the registration statement is suspended by us or ceases to remain continuously effective as to all registrable securities for which it is required to be effective, with certain specified exceptions. We refer to each of these events as a registration default. Subject to the specified exceptions, for each 30-day period or portion thereof during which a registration default remains uncured, we are obligated to pay Pfizer an amount in cash equal to 1% of Pfizer's aggregate purchase price, up to a maximum of 10% of the aggregate purchase price paid by Pfizer. These amounts could be material, and any liquidated damages we are required to pay could have a material adverse effect on our financial condition.

## General Company Related Risks

***Our executive officers, directors and principal stockholders have substantial control over us and could limit your ability to influence the outcome of matters submitted to stockholders for approval.***

As of February 28, 2010, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock beneficially owned, in the aggregate, shares representing approximately 49% of our capital stock. As a result, if these stockholders were to choose to act together, they could influence or control matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, could influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of voting power could lead to a delay in or prevent an acquisition of our company on terms that other stockholders may desire.

***Our corporate charter documents, our stockholder rights plan, Delaware law and our purchase agreement for the equity investment by Pfizer contain provisions that may prevent or frustrate attempts by our stockholders to change our management and hinder efforts to acquire a controlling interest in us.***

Provisions of our corporate charter and bylaws may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions include:

- a classified board of directors;
- limitations on the removal of directors;
- advance notice requirements for stockholder proposals and nominations;
- the inability of stockholders to act by written consent or to call special meetings; and
- the ability of our board of directors to designate the terms of and issue new series of preferred stock without stockholder approval.

The affirmative vote of the holders of at least 75% of our shares of capital stock entitled to vote is necessary to amend or repeal the above provisions of our corporate charter. In addition, absent approval of our board of directors, our bylaws may only be amended or repealed by the affirmative vote of the holders of at least 75% of our shares of capital stock entitled to vote.

On December 2, 2008, we adopted a stockholder rights plan pursuant to which we issued a dividend of one preferred share purchase right for each share of our common stock held by stockholders of record on December 15, 2008. Our stockholders approved the rights plan on June 2, 2009. Each right entitles stockholders to purchase one one-thousandth of a share of our newly created Series A Junior Participating Preferred Stock at a price of $7.50, subject to adjustment under certain circumstances. Unless we redeem or exchange the rights at an earlier date, they will expire upon the close of business on December 2, 2018.

The rights issued under our rights plan will automatically trade with the underlying common stock and will initially not be exercisable. If a person acquires or commences a tender offer for 15% (or in the case of Pfizer, which currently owns approximately 18% of our common stock, 20%) or more of our common stock in a transaction that was not approved by our board of directors, each right, other than those owned by the acquiring person, would instead entitle the holder to purchase $15.00 worth of our common stock for the $7.50 exercise price. If we are involved in a merger or other transaction with another company that is not approved by our board of directors, in which we are not the surviving corporation or which transfers more than 50% of our assets to another company, then each right, other than those owned by the acquiring person, would instead entitle the holder to purchase $15.00 worth of the acquiring company's common stock for the $7.50 exercise price. The rights will cause substantial dilution to a person or group that attempts to acquire us on terms not approved by our board of directors. Although we believe that our stockholder rights plan will help enhance our ability to negotiate with a prospective acquirer in order to ensure that all company stockholders realize the long-term value of their investment, it could have the effect of discouraging, delaying or preventing a change of control of our company, including under circumstances that some stockholders may consider favorable.

Section 203 of the Delaware General Corporation Law prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns or within the last three years has owned 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Accordingly, Section 203 may discourage, delay or prevent a change of control of our company.

Pfizer has agreed to constitute and appoint our president and treasurer, and each of them, with full power of substitution, as the proxies of Pfizer with respect to matters on which Pfizer is entitled to vote as a holder of common stock, and authorize each of them to represent and to vote all of Pfizer's shares with respect to matters other than a merger or acquisition of our company, the disposition of all or substantially all of our assets, or a change of control of our company. In addition, if on the record date for any vote of our common stock Pfizer holds greater than 10% of the outstanding shares of our common stock, with respect to any of Pfizer's shares in excess of the number of shares equal to 10% of the outstanding shares of our common stock, Pfizer has agreed to constitute and appoint such persons as the proxies of Pfizer and authorize each of them to represent and to vote with respect to matters related to a merger or acquisition of our company, the disposition of all or substantially all of our assets, or a change of control of our company, in the same manner and in the same proportion as shares of common stock held by our other shareholders are voted on such matters. However, if both (1) we issue common stock that represents more than 10% of our then outstanding common stock to a third party strategic investor in connection with a collaboration agreement and (2) the voting rights granted to such third party contain fewer restrictions, then Pfizer's voting rights shall be deemed to be automatically modified so as to make such rights no less favorable to Pfizer than those granted to the third party strategic investor. Pfizer will have significant influence over the outcome of a stockholder vote with respect to the approval of mergers or other business combination transactions. In addition, with respect to matters other than the approval of mergers or other business combination transactions, our management will control how Pfizer's shares are voted and therefore may have significant influence over the outcome of a stockholder vote with respect to such matters.

***A significant portion of our total outstanding shares may be sold into the market at any time. This could cause the market price of our common stock to drop significantly, even if our business is doing well.***

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. As of February 28, 2010, we had 47,665,970 shares of common stock outstanding. Substantially all of these shares, including those shares issued in the private placement, may be resold in the public market at any time. Moreover, holders of an aggregate of approximately 8,500,000 shares of our common stock, which include the shares of common stock issued to Pfizer as discussed above, have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We also have registered all shares of common stock that we may issue under our equity compensation plans. As a result, they can be freely sold in the public market upon issuance.

## ITEM 1B—UNRESOLVED STAFF COMMENTS

None.

## ITEM 2—PROPERTIES

Our principal facilities consist of approximately 32,000 square feet of research and office space located at 4222 Emperor Boulevard, Durham, North Carolina and research space located at 3908 Patriot Drive, Durham, North Carolina which we occupy under several leases that expire over the period from 2010 to 2012.

## ITEM 3—LEGAL PROCEEDINGS

We are not currently a party to any material legal proceedings.

## ITEM 4—[REMOVED AND RESERVED]

## PART II

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

### Market Information and Holders

Our common stock has traded on the Nasdaq Global Market (formerly the Nasdaq National Market) under the symbol "ICGN" since our initial public offering, or IPO, on February 3, 2005. The following table sets forth, for the calendar periods indicated, the range of high and low sales prices for our common stock on the Nasdaq Global Market:

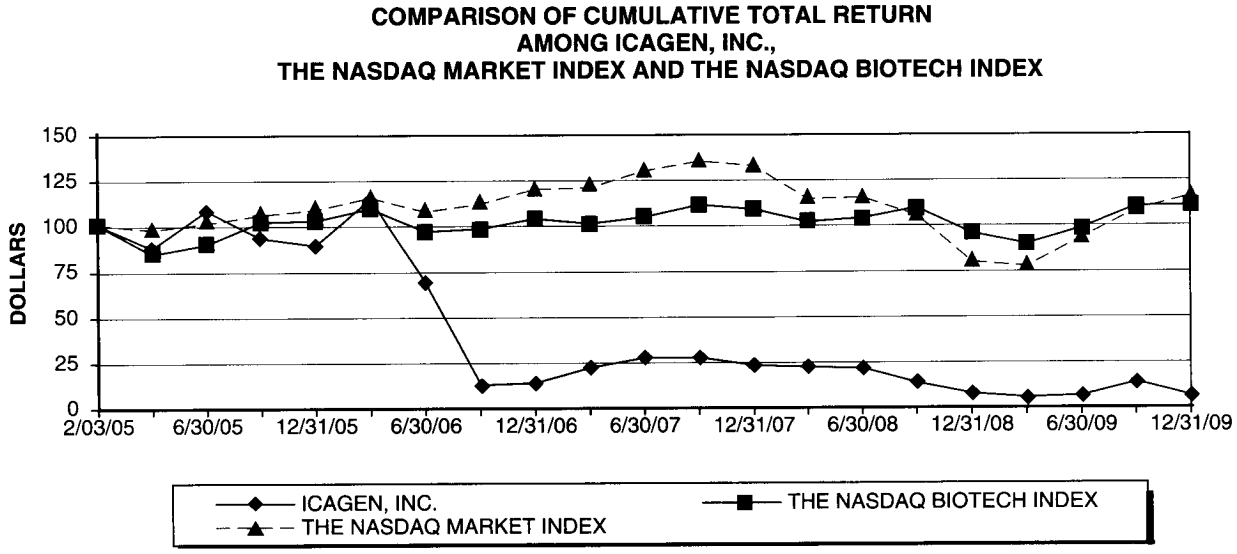
| 2008 | High | Low |
|---|---|---|
| First Quarter | $2.00 | $1.36 |
| Second Quarter | $1.74 | $1.40 |
| Third Quarter | $2.20 | $0.95 |
| Fourth Quarter | $1.28 | $0.35 |

| 2009 | High | Low |
|---|---|---|
| First Quarter | $0.60 | $0.34 |
| Second Quarter | $0.74 | $0.31 |
| Third Quarter | $1.59 | $0.35 |
| Fourth Quarter | $1.05 | $0.36 |

On March 15, 2010, there were 100 stockholders of record of our common stock. On March 15, 2010, the last sale price reported on the Nasdaq Global Market for our common stock was $0.54 per share.

### Performance Graph

The graph below compares the cumulative total stockholder return on our common stock for the period from February 3, 2005, the date of our initial public offering, through December 31, 2009 with the cumulative total return on the Nasdaq Market Index and the Nasdaq Biotechnology Index. Each comparison assumes the investment of $100 on February 3, 2005 in our common stock and in each of the indices and, in each case, assumes reinvestment of all dividends.



| | February 3, 2005 | March 31, 2005 | June 30, 2005 | September 30, 2005 | December 31, 2005 | March 31, 2006 | June 30, 2006 | September 30, 2006 | December 31, 2006 |
|---|---|---|---|---|---|---|---|---|---|
| Icagen, Inc. | $ 100 | $ 87.12 | $107.53 | $ 92.47 | $ 88.36 | $113.70 | $ 68.49 | $ 12.60 | $ 13.84 |
| The Nasdaq Market Index | 100 | 97.11 | 100.49 | 104.99 | 107.95 | 114.50 | 106.88 | 111.15 | 119.08 |
| The Nasdaq Biotechnology Index | 100 | 84.01 | 89.16 | 101.37 | 102.08 | 108.66 | 95.97 | 97.46 | 103.17 |

| | March 31, 2007 | June 30, 2007 | September 30, 2007 | December 31, 2007 | March 31, 2008 | June 30, 2008 | September 30, 2008 | December 31, 2008 |
|---|---|---|---|---|---|---|---|---|
| Icagen, Inc. | $ 22.05 | $ 27.40 | $ 27.40 | $ 23.01 | $ 22.19 | $ 21.37 | $ 13.42 | $ 7.40 |
| The Nasdaq Market Index | 119.59 | 128.77 | 133.84 | 131.64 | 113.34 | 114.24 | 104.41 | 78.95 |
| The Nasdaq Biotechnology Index | 100.41 | 103.76 | 110.46 | 107.96 | 101.00 | 102.91 | 108.46 | 94. |

| | March 31, 2009 | June 30, 2009 | September 30, 2009 | December 31, 2009 |
|---|---|---|---|---|
| Icagen, Inc. | $ 5.48 | $ 6.58 | $ 13.84 | $ 6.19 |
| The Nasdaq Market Index | 76.75 | 92.36 | 107.05 | 114.72 |
| The Nasdaq Biotechnology Index | 88.69 | 97.39 | 109.15 | 109.79 |

The information included under the heading "Performance Graph" in Item 5 of this Annual Report on Form 10-K is "furnished" and not "filed" and shall not be deemed to be "soliciting material" or subject to Regulation 14A, shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act.

### Dividend Policy

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings to finance the growth and development of our business. We do not intend to pay cash dividends to our stockholders in the foreseeable future.

### Recent Sales of Unregistered Securities

We did not sell any equity securities that were not registered under the Securities Act in the fourth quarter of 2009.

### Issuer Purchases of Equity Securities

We did not make any purchases of our shares of common stock in the fourth quarter of fiscal 2009, nor did any affiliated purchaser or anyone acting on behalf of us or an affiliated purchaser.

## ITEM 6—SELECTED FINANCIAL DATA

The selected financial data set forth below should be read together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included in this Annual Report on Form 10-K.

The selected financial data set forth below as of December 31, 2009 and 2008 and for the years ended December 31, 2009, 2008 and 2007 are derived from our audited financial statements included in this Annual Report on Form 10-K. All other selected financial data set forth below is derived from our audited financial statements not included in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of our results of operations to be expected in the future.

| | Year ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2009 | 2008 | 2007 | 2006 | 2005 |
| | (in thousands, except share and per share data) | | | | |
| **Selected statement of operations data:** | | | | | |
| Collaborative research and development revenues: | | | | | |
| Research and development fees | $ 9,342 | $ 11,711 | $ 17,383(1) | $ 1,953 | $ 4,454 |
| Reimbursed research and development costs | 291 | 580 | 3,734 | 6,467 | 4,340 |
| Total collaborative research and development revenues | 9,633 | 12,291 | 21,117 | 8,420 | 8,794 |
| Operating expenses: | | | | | |
| Research and development | 18,063 | 22,140 | 27,854 | 28,820 | 25,906 |
| General and administrative | 4,290 | 5,748 | 5,940 | 5,907 | 4,589 |
| Total operating expenses | 22,353 | 27,888 | 33,794 | 34,727 | 30,495 |
| Loss from operations | (12,720) | (15,597) | (12,677) | (26,307) | (21,701) |
| Other (loss) income, net | (137) | 782 | 1,792 | 1,499 | 1,452 |
| Income tax refund | 88 | — | — | — | — |
| Net loss | $ (12,769) | $ (14,815) | $ (10,885) | $ (24,808) | $ (20,249) |
| Basic and diluted net loss per share | $ (0.27) | $ (0.32) | $ (0.29) | $ (1.12) | $ (1.03) |
| Weighted average common shares outstanding—basic and diluted | 47,064,761 | 46,167,902 | 37,432,144 | 22,219,662 | 19,636,848 |

| | December 31, | | | | |
|---|---|---|---|---|---|
| | 2009 | 2008 | 2007 | 2006 | 2005 |
| | | | (in thousands) | | |
| **Selected balance sheet data:** | | | | | |
| Cash and cash equivalents | $ 18,149 | $ 34,215 | $ 43,513 | $ 25,131 | $ 47,763 |
| Working capital | 15,240 | 26,429 | 32,896 | 19,571 | 42,394 |
| Total assets | 21,092 | 37,880 | 46,657 | 30,815 | 54,393 |
| Equipment debt financing, less current portion | 478 | 971 | 757 | 774 | 1,194 |
| Accumulated deficit | (139,209) | (126,440) | (111,625) | (100,740) | (75,932) |
| Total stockholders' equity | 16,699 | 28,112 | 30,684 | 12,047 | 33,992 |

(1) Amount includes $11.5 million of incremental revenue recognized as a result of the termination of the collaboration agreement with McNeil. We had recorded an upfront payment and a milestone payment from McNeil totaling $15.0 million as deferred revenue and was amortizing such deferred revenue over the original 15 year estimated service period of the contract. In June 2007, we revised our estimate of the term of our substantive obligations under the contract from ending in June 2019 to ending in September 2007. Accordingly, we recognized the remaining balance of deferred revenue in 2007 as the collaboration ended and our contractual obligations became complete.

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

*You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes and other financial information included elsewhere in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. You should review the section entitled "Risk Factors" of this Annual Report on Form 10-K for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. We have limited cash resources. Our ability to continue operations beyond the third quarter of 2010 depends on our success in securing new funds. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws.*

### Overview

We are a biopharmaceutical company focused on the discovery, development and commercialization of novel orally-administered small molecule drugs that modulate ion channel targets. Utilizing our proprietary know-how and integrated scientific and drug development capabilities, we have identified multiple drug candidates that modulate ion channels. We are conducting research and development activities in a number of disease areas, including epilepsy, pain and inflammation.

Since our incorporation in November 1992, we have devoted substantially all of our resources to the discovery and development of drug candidates with activity at ion channels. We currently have one clinical development program, as well as other drug discovery programs addressing specific ion channel targets. We have not received approval to market any product and, to date, have received no product revenues.

Since our inception, we have incurred substantial losses and, as of December 31, 2009, we had an accumulated deficit of $139.2 million. These losses and accumulated deficit have resulted from the significant costs incurred in the research and development of our compounds and technologies and general and administrative costs. The report of our independent registered public accounting firm with respect to our financial statements appearing at the end of this report states that there is substantial doubt about our ability to continue as a going concern.

A substantial portion of our revenue for at least the next several years will depend on our achieving development and regulatory milestones in our existing collaborative research and development program and entering into new collaborations. Our revenue may vary substantially from quarter to quarter and year to year. Our operating expenses may also vary substantially from quarter to quarter and year to year based on the timing of clinical trial patient enrollment and our research activities. We believe that period-to-period comparisons of our results of operations are not meaningful and should not be relied on as indicative of our future performance.

The successful development of our product candidates is highly uncertain. Until we have discussed next steps for the development of ICA-105665 with the FDA, we will not know the cost of the next phase of development. The conduct of this program beyond the proof-of-concept stage will be dependent upon the availability of additional capital or the formation of one or more new collaborations. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws.

If sufficient funding is available and the scope of the clinical trials that we are conducting expands, we expect that our operating losses will continue and likely increase substantially for at least the next several

quarters and years as we continue to expand our research, development and clinical trial activities and infrastructure. We cannot reasonably estimate or know the nature, timing and estimated expenses of the efforts necessary to complete the remainder of the development of, or the period in which material net cash inflows will commence from, any of our product candidates due to the numerous risks and uncertainties associated with developing drugs, including the uncertainty of:

- the scope, rate of progress and expense of our clinical trials and other research and development activities;
- future clinical trial results;
- the expense of clinical trials for additional indications;
- the success of our collaboration with Pfizer;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- the expense and timing of regulatory approvals;
- the expense of establishing clinical and commercial supplies of our product candidates and any products that we may develop;
- the effect of competing technological and market developments; and
- the expense of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights.

However, we do not expect to generate product revenue for at least the next several years. If any of our programs experience delays or do not result in a commercial product, we would not generate revenue from that program in a timely manner or at all.

## Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations set forth below are based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. On an ongoing basis, we evaluate our estimates and judgments, including those described below. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. These estimates and assumptions 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.

We believe the following critical accounting policies affect our significant judgments and estimates used in the preparation of our financial statements.

### *Revenue Recognition*

Our collaboration agreements contain multiple elements, including non-refundable upfront license fees, payments for reimbursement of research and development costs, payments for ongoing research and development, milestone payments associated with achieving development, regulatory and commercial milestones and royalties based on specified percentages of net product sales, if any. We consider a variety of factors in determining the appropriate method of revenue recognition under these arrangements, such as whether the elements are separable, whether there are determinable fair values and whether there is a unique earnings process associated with each element of a contract.

We record cash received in advance of revenue recognition as deferred revenue and recognize revenues as services are performed over the applicable term of the agreement. When the period of deferral cannot be

specifically identified from the agreement, we estimate the period based upon other factors contained within the agreement. We continually review these estimates, which could result in a change in the deferral period and the timing and the amount of revenue recognized.

When a payment is specifically tied to a separate earnings process, we recognize revenues when the specific performance obligation associated with the payment is completed. Performance obligations typically consist of significant milestones in the development life cycle of the related program, such as the initiation or completion of clinical trials, filing for approval with regulatory agencies and receipt of approvals by regulatory agencies. Revenues from milestone payments may be considered separable from funding for research and development services because of the uncertainty surrounding the achievement of milestones for products in early stages of development. Accordingly, we can recognize these payments as revenues if and when the performance milestone is achieved if they represent a separate earnings process as described in Accounting Standards Codification, or ASC 605 (formerly Emerging Issues Task Force, or EITF, Issue 00-21, *Revenue Arrangements with Multiple Deliverables*, or EITF 00-21).

In connection with our research and development collaborations, we recognize revenues from non-refundable upfront license fees, which we do not believe are specifically tied to a separate earnings process, ratably over the term of the agreement. Research and development services provided under our collaboration agreement with Pfizer are on a fixed fee basis. We recognize revenues associated with long-term, fixed fee contracts based on the performance requirements of the agreements and as services are performed. Our collaboration agreement with Pfizer allows for research term extensions upon mutually agreeable terms. We recognize revenues from contract extensions as we perform the extended services.

In connection with our collaboration with Pfizer, Pfizer paid us an initial upfront license fee of $12.0 million. We recognized this payment from Pfizer as revenue in accordance with Staff Accounting Bulletin No. 104, *Revenue Recognition*, or SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature. Specifically, we recorded the $12.0 million upfront payment as deferred revenue, which we amortized to revenue over the initial two-year term of the research collaboration.

In connection with our collaboration with McNeil, McNeil paid us an initial upfront payment of $10.0 million, and a milestone payment of $5.0 million upon acceptance of the protocol for our Phase III clinical trial of senicapoc for sickle cell disease by the FDA. We recognized these payments from McNeil as revenue in accordance with SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature. Specifically, we recorded both the $10.0 million upfront payment and the $5.0 million milestone payment as deferred revenue, which was amortized to revenue over our estimate of the substantive service obligations of the contract. We initially estimated these substantive service obligations to conclude on the expiration of the last-to-expire patent covered by the agreement in June 2019, but this estimate was later revised to September 2007 to coincide with the September 18, 2007 contract termination date. Accordingly, we recognized the remaining $12.5 million unamortized balance of the $15 million upfront license and milestone payment from McNeil as revenue during the year ended December 31, 2007. At the time of the execution of the agreement, we did not consider the achievement of the milestone above to represent a separate earnings process, and therefore we elected to treat this payment in a manner consistent with the accounting treatment applied to the $10.0 million upfront payment rather than recognize this payment as revenue when received.

We also recognize revenues derived from reimbursement of direct out-of-pocket expenses for research and development costs associated with our collaboration with Pfizer and with our cost sharing arrangement with McNeil, which terminated on September 18, 2007, in accordance with ASC 605 (formerly EITF 99-19), *Reporting Revenue Gross as a Principal Versus Net as an Agent*. We reflect the associated research costs in our research and development expense.

None of the payments that we have received from collaborators to date, whether recognized as revenue or deferred, are refundable even if the related program is not successful.

*Accrued Expenses*

As part of the process of preparing financial statements, we are required to estimate accrued expenses. This process involves identifying services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for such service where we have not yet been invoiced or otherwise notified of actual cost. We make these estimates as of each balance sheet date in our financial statements. Examples of estimated accrued expenses include:

- fees payable to contract research organizations in conjunction with clinical trials;
- fees payable to contract manufacturers in conjunction with the production of clinical trial materials; and
- professional service fees.

In accruing service fees, we estimate the time period over which services will be provided and the level of effort in each period. If the actual timing of the provision of services or the level of effort varies from the estimate, we will adjust the accrual accordingly. The majority of our service providers invoice us monthly in arrears for services performed. In the event that we do not identify costs that have begun to be incurred or we underestimate or overestimate the level of services performed or the costs of such services, our actual expenses could differ from such estimates. The date on which some services commence, the level of services performed on or before a given date and the cost of such services are often subjective determinations. We make judgments based upon the facts and circumstances known to us at each reporting period end.

***Research and Development***

We expense research and development costs as incurred. Research and development expense includes, among other things, clinical trial costs. We account for our clinical trial costs by estimating the total cost to treat a patient in each clinical trial and recognizing this cost, based on a variety of factors, beginning with the preparation for the clinical trial. This estimated cost includes payments to our contract research organizations for trial site and patient-related costs, including laboratory costs related to the conduct of the trial, and other costs. Our cost per patient varies based on the type of clinical trial, the site of the clinical trial and the length of the treatment period for each patient. As actual costs become known to us, we adjust our accrual; these changes in estimates may result in a material change in our clinical study accrual, which could materially affect our results of operations. Research and development expense includes those costs described under "Financial Operations Overview—Research and Development Expense" below.

***Stock-Based Compensation***

We account for stock-based compensation in accordance with the fair value recognition provisions of ASC 718, *Compensation—Stock Compensation*, (formerly Financial Accounting Standards Board, or FASB, Statement No. 123 (revised 2004)), *Share-Based Payments,* or Statement 123(R). We use the Black-Scholes-Merton option-pricing model, which requires the input of subjective assumptions. These assumptions include estimating the length of time vested stock options are retained before being exercised, or the expected term, the estimated volatility of our common stock price over the expected term and the number of options that will ultimately expire or be forfeited. Changes to these subjective assumptions can materially affect the estimate of fair value of stock-based compensation and, consequently, the related amount recognized on the statements of operations.

***Accounting for Income Taxes***

Under our income tax policy, we record the estimated future tax effects of temporary differences between the tax basis of assets and liabilities and amounts reported in the accompanying balance sheets, as well as operating loss and tax credit carryforwards, including orphan drug credit carryforwards. We have recorded a full

valuation allowance to reduce our deferred tax assets as, based on available objective evidence, it is more likely than not that the deferred tax asset will not be realized. In the event that we determine that we will be able to realize our deferred tax assets in the future, an adjustment to the valuation allowance would increase net income in the period the determination is made.

As of December 31, 2009, we had net operating loss carryforwards of approximately $128.4 million and research and development credit carryforwards of approximately $4.1 million for income tax purposes that begin to expire in the year 2011. Our orphan drug credit carryforwards of $12.4 million as of December 31, 2009 for income tax purposes begin to expire in 2020. The future utilization of our net operating loss carryforwards may be limited based upon changes in ownership pursuant to regulations promulgated under the Internal Revenue Code.

## Financial Operations Overview

### *Revenue*

We do not currently have any commercial products for sale and do not anticipate having any commercial products for at least the next several years. To date, our revenue has been derived solely from our collaborations. The aggregate revenues that we have recognized from our collaborators for research and development in each of the last three years were as follows: 2009—$9.6 million; 2008—$12.3 million; and 2007—$21.1 million.

During the year ended December 31, 2009, revenues from our collaboration with Pfizer accounted for all of our revenues, and currently we are only receiving research funding under the one-year renewal term of the research phase of our collaboration with Pfizer, which is scheduled to end in September 2010. In connection with our collaboration with Pfizer, Pfizer paid us an initial upfront payment of $12.0 million. We recognized this payment from Pfizer as revenue over the two year initial term of the collaboration in accordance with SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature.

In connection with our collaboration with McNeil, McNeil paid us an initial upfront payment of $10.0 million, $1.3 million of which we paid to CMCC in 2004, and a milestone payment of $5.0 million upon acceptance of the protocol for our Phase III clinical trial of senicapoc by the FDA, $650,000 of which we paid to CMCC in 2005. Our collaboration agreement with McNeil terminated effective September 18, 2007. We recognized these payments from McNeil as revenue in accordance with SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature.

### *Research and Development Expense*

Research and development expense consists primarily of:

- salaries and related expenses for personnel;
- costs of facilities and equipment;
- fees paid to contract research organizations in conjunction with clinical trials;
- fees paid to contract manufacturers in conjunction with the production of clinical materials;
- fees paid to research organizations in conjunction with preclinical animal studies;
- costs of materials used in research and development;
- upfront license fees and milestone payments under in-licensing agreements;
- consulting, license and sponsored research fees paid to third parties; and
- depreciation of capital assets used to develop our products.

We expense both internal and external research and development costs as incurred. Our collaborators have paid for a portion of our research and development expenses in each of the last three years. Provided that we are able to secure additional funding, we expect that research and development expenditures will increase substantially due to the following:

- clinical studies of ICA-105665 for the treatment of epilepsy and pain; and
- the continued development of our research programs.

The conduct of our clinical stage program beyond proof-of-concept studies will be dependent upon the availability of additional capital or the formation of one or more new collaborations.

We use our employee and infrastructure resources for several projects. Consistent with our target class approach to drug development, many of our costs are not attributable to a specifically identified project, but instead are directed to broadly applicable research efforts. Accordingly, we do not account for internal research and development costs on a project-by-project basis. As a result, we cannot state precisely the total costs incurred for each of our clinical and preclinical projects on a project-by-project basis. Senicapoc, which we had previously studied as a potential treatment for both sickle cell disease and asthma, and ICA-105665 and our other lead compounds for epilepsy and pain represent a substantial majority of the total research and development payments by us to third parties. The following table shows, for the periods presented, the total out-of-pocket payments made by us to third parties for preclinical study support, clinical supplies and clinical trials associated with these programs:

| Development Program | Year ended December 31, | | |
|---|---|---|---|
| | 2009 | 2008 | 2007 |
| | (in thousands) | | |
| Senicapoc | $3,140 | $1,728 | $ 7,551 |
| ICA-105665 and other lead compounds for epilepsy and pain | 1,997 | 4,720 | 3,686 |
| Total | $5,137 | $6,448 | $11,237 |

We expect that a substantial percentage of our research and development expense in the future will be incurred in support of our current and future preclinical and clinical development programs. We are no longer continuing the clinical development of senicapoc and accordingly we do not expect to incur significant future research and development expenses associated with this program. Our development expenditures are subject to numerous uncertainties in timing and cost to completion. In order to advance our drug development programs toward eventual commercialization of a drug product, we test compounds in numerous preclinical studies for safety, toxicology and efficacy. We then conduct clinical trials for each drug candidate. Throughout the drug development process, we make submissions to, and engage in discussions with, drug regulatory authorities, with the ultimate goal of submitting to these authorities and having approved applications for marketing approval. If we do not establish a collaboration for the program, we fund these activities ourselves. As we obtain results from trials, we may elect to discontinue or delay clinical trials for some product candidates in order to focus our resources on more promising product candidates. Completion of clinical trials by us or our collaborators may take several years or more, but the length of time generally varies substantially according to the type, complexity, novelty and intended use of a drug candidate. The cost of clinical trials may vary significantly over the life of a project as a result of a variety of factors, including:

- the number of patients who participate in the trials;
- the number of sites included in the trials;
- the length of time required to enroll trial participants;
- the duration of patient follow-up; and
- the efficacy and safety profile of the product candidate.

None of our drug candidates has received FDA or foreign regulatory marketing approval. During the first quarter of 2007, our pivotal Phase III trial of senicapoc for the treatment of sickle cell disease was terminated. In order to achieve marketing approval, the FDA or foreign regulatory agencies must conclude that our or our collaborators' clinical data establishes the safety and efficacy of the drug candidates. Furthermore, our strategy includes entering into collaborations with third parties to participate in the development and commercialization of some of our products, such as our active collaboration with Pfizer and our past collaborations with several other pharmaceutical companies. In situations in which third parties have control over the preclinical development or clinical trial process for a product, the estimated completion date is largely under control of that third party rather than under our control. We cannot forecast with any degree of certainty which of our drug candidates will be subject to future collaborations or how such arrangements will affect our development plan or capital requirements.

As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our research and development projects, anticipated completion dates or when and to what extent we will receive cash inflows from the commercialization and sale of a product. However, we do not expect to generate product revenue for at least the next several years.

***General and Administrative Expense***

General and administrative expense consists primarily of salaries and other related costs for personnel serving finance, accounting, intellectual property, information technology, human resource and administrative functions. Other costs include facility costs not included in research and development expense, insurance, professional fees for legal, accounting and public relations services and the legal costs of pursuing patent protection for our intellectual property. We expect that general and administrative expenditures will remain relatively stable during 2010 but may increase in subsequent years due to increasing payroll, public company expenses, our initial commercialization expenses if we receive marketing approvals, business development costs and expanded operational infrastructure.

***Interest Income and Interest Expense***

Interest income consists of interest earned on our cash and cash equivalents. Interest expense consists of interest incurred on equipment debt financing.

**Results of Operations**

***Comparison of Years Ended December 31, 2009 and December 31, 2008***

***Collaborative Research and Development Revenue***

Collaborative research and development revenues decreased by $2.7 million, or 22%, to $9.6 million for the year ended December 31, 2009 from $12.3 million for the year ended December 31, 2008 and consisted of research and development funding related to our collaboration with Pfizer for both periods. The decrease was due primarily to a $2.3 million decrease in amortization of the initial upfront payment from Pfizer which became fully amortized during the third quarter of 2009 as well as a $289,000 decrease in reimbursed research and development costs.

***Research and Development Expense***

Research and development expense decreased by $4.1 million, or 19%, to $18.1 million for the year ended December 31, 2009 from $22.1 million for the year ended December 31, 2008. The decrease was due to a decrease of $2.7 million in expense associated with our epilepsy and pain program due to the timing of the conduct of the studies in this program; the implementation of a variety of cost reduction measures, including a decrease of $806,000 in patent expense, a decrease of $305,000 in outsourced chemistry expense, a decrease of

$297,000 in laboratory supplies expense, a decrease of $238,000 in salary and benefits expense, a decrease of $197,000 in expense related to pharmacology studies, a decrease of $114,000 related to license fee expense, and a decrease in the aggregate of $270,000 related to travel expense, consulting expense, and software license expense; a decrease of $495,000 in equity compensation expense; and a decrease of $242,000 in building rental and maintenance expense. This decrease was partially offset by an increase of $1.4 million in expenses related to the development of senicapoc for asthma and $287,000 in restructuring charges.

***General and Administrative Expense***

General and administrative expense decreased by $1.5 million, or 25%, to $4.3 million for the year ended December 31, 2009 from $5.7 million for the year ended December 31, 2008. The decrease was due primarily to the implementation of a variety of cost reduction measures, including a decrease of $411,000 related to business development expense, a decrease of $270,000 in salary and benefits expense, a decrease of $159,000 in accounting expense, a decrease of $144,000 in legal expense, a decrease of $123,000 in board of directors expense and a decrease of $90,000 in travel expense; a decrease of $452,000 in equity compensation expense; and a decrease in the aggregate of $141,000 related to building and maintenance expense and miscellaneous expense. This decrease was partially offset by an increase of $154,000 in insurance expense and $182,000 in restructuring charges.

***Interest Income and Interest Expense***

Interest income decreased $936,000, or 96%, to $36,000 for the year ended December 31, 2009 from $972,000 for the year ended December 31, 2008. The decrease in interest income was attributable to lower interest rates and to a lower average cash balance.

Interest expense decreased $17,000, or 9%, to $173,000 for the year ended December 31, 2009 from $190,000 for the year ended December 31, 2008. The decrease in interest expense was attributable to a lower average debt balance.

***Comparison of Years Ended December 31, 2008 and December 31, 2007***

***Collaborative Research and Development Revenue***

Collaborative research and development revenues decreased by $8.8 million, or 42%, to $12.3 million for the year ended December 31, 2008 from $21.1 million for the year ended December 31, 2007. This decrease reflects a decrease of approximately $11.5 million in revenue resulting from the accelerated recognition of deferred revenue due to the termination of our collaboration with McNeil during 2007 and a $5.2 million decrease in revenue related to reduced research and development fees and reduced cost-sharing reimbursement from the McNeil collaboration for the clinical development of senicapoc for the treatment of sickle cell disease. This decrease was partially offset by an increase of $7.9 million in revenue from our collaboration with Pfizer.

***Research and Development Expense***

Research and development expense decreased by $5.7 million, or 21%, to $22.1 million for the year ended December 31, 2008 from $27.9 million for the year ended December 31, 2007. The decrease was due primarily to a decrease of $7.4 million in expense related to the development of senicapoc for the treatment of sickle cell disease, a decrease of $1.6 million in expense related to the write-off of the capitalized payments that had been made to CMCC in connection with the termination of the McNeil collaboration, a decrease of $398,000 in equity compensation expense, a decrease of $389,000 in expense related to pharmacology studies, and a decrease of $351,000 related to license fee expense, partially offset by an increase of $1.6 million in expense related to the development of senicapoc for asthma, an increase of $1.1 million in expense related to the development of ICA-105665 and our other lead compounds for epilepsy and pain, an increase of $756,000 in salary and benefits expense, an increase of $487,000 in patent expense, an increase of $222,000 in laboratory supplies expense and an increase of $207,000 in building rent and maintenance expense.

*General and Administrative Expense*

General and administrative expense decreased by $192,000, or 3%, to $5.7 million for the year ended December 31, 2008 from $5.9 million for the year ended December 31, 2007. The decrease was due primarily to a decrease of $233,000 in salary and benefits expense and a decrease of $226,000 in insurance expense, partially offset by an increase of $200,000 in business development expense and an increase of $61,000 in travel and seminar expense.

*Interest Income and Interest Expense*

Interest income decreased $988,000, or 50%, to $972,000 for the year ended December 31, 2008 from $2.0 million for the year ended December 31, 2007. The decrease in interest income was attributable to lower interest rates.

Interest expense increased $22,000, or 13%, to $190,000 for the year ended December 31, 2008 from $168,000 for the year ended December 31, 2007. The increase in interest expense was attributable to a higher average debt balance.

**Liquidity and Capital Resources**

As of December 31, 2009, we had cash and cash equivalents of $18.1 million. In order to conserve capital, during 2009 we implemented a limited reduction of our workforce and other cost reduction measures. We believe that based on our current operating plan, our existing cash and cash equivalents will be sufficient to enable us to fund our operations; lease, debt and other obligations; and capital expenditure requirements into the third quarter of 2010. We will need additional funds to meet our obligations and fund operations beyond that time. We have renewed our research collaboration with Pfizer for a one year term through September 2010. Except for collaboration revenue we expect to receive from Pfizer as funding for research and development activities, we do not currently have any commitments for future external funding.

Additional equity or debt financing, or corporate collaboration and licensing arrangements, may not be available on acceptable terms, if at all, particularly in the current economic environment. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws. These conditions have caused our independent registered public accounting firm to raise substantial doubt about our ability to continue as a going concern. If sufficient funding is available and the scope of our clinical trials that we are conducting expands, we expect to incur losses from operations for at least the next several years.

In June 2009, we announced that we had retained J.P. Morgan to provide advice and assistance on a range of possible transactions, including the formation of one or more collaborations or the potential acquisition of our company. There can be no assurance that, if any transaction is commenced, it will be completed or as to the value that any such transaction might have for our stockholders.

On February 6, 2007, we completed a private placement of 15,423,640 shares of our common stock and warrants to purchase 5,398,256 million shares of our common stock at an exercise price of $1.45 per share. The private placement resulted in gross proceeds to us of approximately $22.0 million.

In June 2007, we received notification from McNeil of its termination of the collaboration agreement between us and McNeil for the development of senicapoc for the treatment of sickle cell disease as of September 18, 2007. Consequently, we did not earn any revenue associated with this collaboration after September 18, 2007. We bore the full cost of development of senicapoc for asthma.

In August 2007, we entered into a collaborative research and license agreement with Pfizer for the discovery, development, manufacture and commercialization of compounds and products that modulate three

specific sodium ion channels as new potential treatments for pain and related disorders. Pursuant to the collaboration arrangement, Pfizer paid us an initial upfront license fee of $12.0 million. In addition to the upfront license fee, Pfizer provided us with research and development funding over a two-year research period pursuant to the agreement. Pfizer is obligated to make payments to us upon achievement of specified research, development, regulatory and commercialization milestones of up to $359.0 million for each drug candidate developed. We are also eligible to receive tiered royalties, against which Pfizer may credit any commercialization milestones, based on specified percentages of net product sales. In September 2009, the research term of the collaborative research and license agreement with Pfizer was extended for a one-year period through September 2010.

In August 2007, in connection with the collaborative research and license agreement with Pfizer, we also entered into a purchase agreement with Pfizer to sell to Pfizer up to $15.0 million of our common stock. In a first closing of the transaction on August 20, 2007, we sold 2,688,172 shares of common stock to Pfizer at a price of $1.86 per share, which was the closing bid price of our common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the execution of the purchase agreement, resulting in gross proceeds to us of approximately $5.0 million. In a subsequent closing of the transaction on February 13, 2008, we sold an additional 5,847,953 shares of common stock to Pfizer at a price of $1.71 per share, which was the closing bid price of our common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the date of our exercise of our put option to sell the shares, resulting in gross proceeds to us of approximately $10.0 million.

We have financed our operations since inception through the issuance of equity securities, payments received under our collaboration agreements, proceeds from equipment debt financing and capital leases and interest income. From inception through December 31, 2009, we have raised net proceeds of $151.6 million from our IPO, private equity financings and the exercise of stock options and warrants. From inception through December 31, 2009, we have also received $97.5 million in license fees and research and development funding, $8.9 million in proceeds from equipment debt financing and capital leases and $12.3 million in interest income. To date, inflation has not had a material effect on our business.

***Cash Flows***

At December 31, 2009, our cash and cash equivalents were $18.1 million as compared to $34.2 million at December 31, 2008. Our cash and cash equivalents are highly liquid investments with a maturity of one year or less at date of purchase and consist of time deposits and investments in money market funds with commercial banks and financial institutions and United States government obligations.

Net cash used in operating activities was $15.4 million for the year ended December 31, 2009. This reflects a net loss of approximately $12.8 million, a decrease of approximately $4.1 million in deferred revenue and a decrease of approximately $604,000 in accounts payable and accrued expenses. These amounts were partially offset by $1.3 million of non-cash expenses related to stock-based compensation and $811,000 of non-cash expenses related to depreciation and amortization of property and equipment.

Net cash used in investing activities in the year ended December 31, 2009 was $66,000 and consisted of purchases of property and equipment.

Net cash used in financing activities during the year ended December 31, 2009 was $587,000 and consisted of $662,000 in principal repayments related to our equipment debt financing, offset primarily by $100,000 in proceeds from the exercise of stock options.

At December 31, 2008, our cash and cash equivalents were $34.2 million as compared to $43.5 million at December 31, 2007. Our cash and cash equivalents are highly liquid investments with a maturity of one year or less at date of purchase and consist of time deposits and investments in money market funds with commercial banks and financial institutions and United States government obligations.

Net cash used in operating activities was $18.0 million for the year ended December 31, 2008. This reflects a net loss of approximately $14.8 million, a decrease of approximately $5.7 million in deferred revenue and a decrease of approximately $1.2 million in accounts payable and accrued expenses. These amounts were partially offset by $2.2 million of non-cash expenses related to stock-based compensation, $790,000 of non-cash expenses related to depreciation and amortization of property and equipment, an increase of $311,000 in other liabilities and a decrease of approximately $217,000 in prepaid expenses and other current and non-current assets.

Net cash used in investing activities in the year ended December 31, 2008 was $1.6 million and consisted of purchases of property and equipment.

Net cash provided by financing activities during the year ended December 31, 2008 was $10.3 million and consisted primarily of $10.0 million in net proceeds from the issuance of equity securities and $1.0 million in proceeds from equipment debt financing, partially offset by $715,000 in principal repayments related to our equipment debt financing.

***Off-Balance Sheet Arrangements***

We do not have any off-balance sheet arrangements.

***Contractual Obligations***

Our long-term commitments under operating leases consist of payments relating to our leases of laboratory and office space as well as of office equipment. These leases expire over the period from 2010 to 2012. Our long-term commitments under equipment debt financing consist of payments relating to financing arrangements used primarily for the purchase of laboratory equipment.

We are a party to a number of license agreements, primarily with academic institutions, under which we license patents, patent applications and other intellectual property. The duration of these agreements varies from 10 years to the expiration date of the last-to-expire patent, and we have the option to renew some of these agreements at the end of their terms. Our technology license agreements are generally terminable by us upon short notice. Under some conditions, we are permitted to grant sublicenses for which the licensors are entitled to receive a fee, a share of sublicense income or both. Some of these licenses require annual technology license maintenance fees and periodic payments upon the achievement of specified development and regulatory milestones. We are obligated to pay specified royalties for licensed and sublicensed product sales, and in some cases minimum annual royalties. The table below does not include contingent milestone amounts payable pursuant to these license agreements.

One of our license agreements is with CMCC. Under this agreement, we are required to pay CMCC royalties on net product sales by us or our affiliates and a share of any sublicense income received by us. See "Business—Intellectual Property—License Agreements" above for a description of the CMCC license agreement. We paid CMCC $1.3 million of the $10.0 million upfront payment that we received from McNeil in June 2004, and $650,000 of the $5.0 million milestone payment that we received from McNeil upon acceptance of the protocol for our pivotal Phase III trial of senicapoc for the treatment of sickle cell disease by the FDA in February 2005. The amount of payments or obligations to CMCC were initially recorded on the balance sheet as long-lived assets under the category "technology licenses and related costs" and were amortized to expense over the term of the agreement. Due to the termination of the McNeil collaboration agreement during 2007, we determined that these long-lived assets were no longer recoverable. In accordance with ASC 360 (formerly Statement of Financial Accounting Standards, or SFAS, 144), *Accounting for the Impairment or Disposal of Long-Lived Assets*, we recorded an impairment loss of $1.6 million during the second quarter of 2007, which is recorded as a component of research and development expense in the statement of operations for the year ended December 31, 2007.

Other contractual obligations as of December 31, 2009 consisted of $251,000 related to commitments for contract research services for preclinical research and other commitments.

We provide a severance arrangement for our executive officers and certain other employees, which includes salary and bonus continuance and continued health benefits (or payment of the amount equal to premiums that we were paying for such benefits) and which is triggered under certain circumstances. At December 31, 2009, we had a remaining obligation of $164,000 related to these arrangements as a result of a workforce reduction which was implemented in 2009. At December 31, 2009, the aggregate amount of potential future obligations under these arrangements was $4.4 million.

The following table summarizes as of December 31, 2009 our contractual obligations for operating leases, equipment debt financing principal and interest payments, annual technology license maintenance fees (including minimum annual royalties if applicable) and other contractual obligations. Because potential obligations under our severance arrangements are contingent, they are not included in the table below. This table should be read in conjunction with the notes accompanying our financial statements included elsewhere in this Annual Report on Form 10-K.

| | Payments Due By Period | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 and Thereafter |
| | (in thousands) | | | | | | |
| Operating leases | $1,223 | $ 518 | $498 | $199 | $ 8 | $— | $— |
| Equipment debt financing | 1,103 | 583 | 386 | 134 | — | — | — |
| Annual technology license maintenance fees | 540 | 63 | 63 | 63 | 44 | 42 | 265 |
| Other contractual obligations | 251 | 251 | — | — | — | — | — |
| Total | $3,117 | $1,415 | $947 | $396 | $ 52 | $ 42 | $265 |

***Funding Requirements***

In order to conserve capital, during 2009 we implemented a limited reduction of our workforce and other cost reduction measures. We believe based on our current operating plan, our existing cash and cash equivalents will be sufficient to enable us to fund our operating expenses; our debt, lease and other obligations; and our capital expenditure requirements into the third quarter of 2010. We will need additional funds to meet our obligations and fund our operations beyond this time. We have renewed our research collaboration with Pfizer for a one year term through September 2010. Except for collaboration revenue we expect to receive from Pfizer as funding for research and development activities, we do not currently have any commitments for future external funding.

Until such time, if ever, as we can generate substantial product revenues, we will need to finance our cash requirements through public or private equity offerings, debt financings and corporate collaboration and licensing arrangements. Additional equity or debt financing, or corporate collaboration and licensing arrangements, may not be available on acceptable terms, if at all, particularly in the current economic environment. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Any debt financing or additional equity that we raise may contain terms, such as liquidation and other preferences, that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish valuable rights to our technologies, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are not able to secure additional funding, we may be required to delay, reduce the scope of or eliminate one or more of our research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws.

If sufficient funding is available and the scope of the clinical trials that we are conducting expands, we expect to incur losses from operations for at least the next several years. Our future capital requirements will depend on many factors, including:

- the scope and results of our research, preclinical and clinical development activities;
- the timing of, and the costs involved in, obtaining regulatory approvals;
- the cost of commercialization activities, including product marketing, sales and distribution;
- the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims and other patent-related costs, including litigation costs and the results of such litigation;
- the extent to which we acquire or invest in businesses, products and technologies;
- the success of our collaboration with Pfizer; and
- our ability to establish and maintain additional collaborations.

**Recent Accounting Pronouncements**

In June 2009, the FASB issued ASC 105 (formerly SFAS No. 168), *"The FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles—a replacement of FASB Statement No. 162,"* or ASC 105. ASC 105 establishes the ASC as the single source of authoritative U.S. accounting and reporting standards applicable for all non-governmental entities, with the exception of guidance issued by the SEC and its staff. ASC 105 was effective July 1, 2009 and applies to all interim periods ending after September 15, 2009. Therefore, we adopted ASC 105 for the reporting in our 2009 third quarter. The adoption of ASC 105 did not have a material impact on our financial statements.

In May 2009, the FASB issued ASC 855 (formerly SFAS No. 165), *"Subsequent Events,"* or ASC 855. ASC 855 establishes general standards of accounting for and disclosure of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. It requires the disclosure of the date through which an entity has evaluated subsequent events and the basis for that date. ASC 855 was effective for us for the quarter ended June 30, 2009. The adoption of ASC 855 did not have a significant impact upon our accounting for and disclosure of subsequent events.

In December 2007, the FASB issued ASC 805 (formerly SFAS No. 141R), *"Business Combinations,"* or ASC 805. ASC 805 establishes principles and requirements for how an acquirer in a business combination recognizes and measures the assets acquired, liabilities assumed and any noncontrolling interest in the acquiree. This statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. ASC 805 applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first fiscal year beginning on or after December 15, 2008. The adoption of ASC 805 did not have a material impact on our financial statements.

In November 2007, the EITF of the FASB reached consensus on ASC 808 (formerly EITF Issue No. 07-1), *"Accounting for Collaborative Arrangements,"* or ASC 808. ASC 808 addresses the issue of how costs incurred and revenue generated on sales to third parties should be reported by participants in a collaborative arrangement in each of their respective income statements. ASC 808 also provides guidance on how an entity should characterize payments made between participants in a collaborative arrangement in the income statement and what participants should disclose in the notes to the financial statements about collaborative arrangements. ASC 808 was effective for fiscal years beginning after December 15, 2008 and has been applied retrospectively to all periods presented for all collaborative arrangements existing as of the effective date. The adoption of ASC 808 did not have a material impact on our financial statements.

In September 2006, the FASB issued ASC 820 (formerly SFAS No. 157), *"Fair Value Measurements,"* or ASC 820. ASC 820 defines fair value, establishes a framework for measuring fair value in accordance with

accounting principles generally accepted in the United States, and expands disclosures about fair value measurements. This pronouncement applies under the other accounting standards that require or permit fair value measurements. Accordingly, this statement does not require any new fair value measurements. ASC 820 was effective for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years, for all financial assets and liabilities and for nonfinancial assets and liabilities that are recognized or disclosed at fair value at least annually. It is effective for fiscal years beginning after November 15, 2008 for all other nonfinancial assets and liabilities. ASC 820 is to be applied prospectively. The adoption of the requirements of ASC 820 that were effective January 1, 2008 and January 1, 2009 did not have a material impact on our financial statements.

## ITEM 7A—QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our exposure to market risk is currently confined to our cash and cash equivalents that have maturities of less than one year. We currently do not hedge interest rate exposure. We have not used derivative financial instruments for speculation or trading purposes. Because of the short-term maturities of our cash and cash equivalents, we do not believe that an increase in market rates would have any significant impact on the realized value of our investments.

We have operated primarily in the United States and have received payments from our collaborators in United States dollars. Accordingly, we do not have any material exposure to foreign currency rate fluctuations.

## ITEM 8—FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

See the index to our financial statements in Item 15 and the financial statements and notes that are filed as part of this Annual Report on Form 10-K following the signature page and incorporated herein by this reference.

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

Not applicable.

## ITEM 9A—CONTROLS AND PROCEDURES

### Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2009. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2009, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

### Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) or 15d-15(f) of the Exchange Act. 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.

Our management assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2009. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission, or COSO, in Internal Control—Integrated Framework. Based on this assessment, management concluded that, as of December 31, 2009, our internal control over financial reporting is effective based on those criteria.

Ernst & Young LLP, an independent registered public accounting firm, has issued an audit report on our internal control over financial reporting as of December 31, 2009 as set forth in their report which appears below.

**Changes In Internal Control Over Financial Reporting**

No change in our internal control over financial reporting occurred during the fiscal quarter ended December 31, 2009 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

## Report of Independent Registered Public Accounting Firm

**The Board of Directors and Shareholders of Icagen, Inc.**

We have audited Icagen, Inc.'s internal control over financial reporting as of December 31, 2009, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Icagen, 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 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, Icagen, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2009, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the balance sheets of Icagen, Inc. as of December 31, 2009 and 2008, and the related statements of operations, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2009 of Icagen, Inc. and our report dated March 30, 2010 expressed an unqualified opinion thereon that included an explanatory paragraph regarding Icagen, Inc.'s ability to continue as a going concern.

/s/ Ernst & Young LLP

Raleigh, North Carolina
March 30, 2010

## ITEM 9B—OTHER INFORMATION

None.

## PART III

## ITEM 10—DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required to be disclosed by this Item pursuant to Item 401 of Regulation S-K with respect to our executive officers is contained in Part I of this Annual Report on Form 10-K under the caption, "Executive Officers of the Registrant." The remaining information required to be disclosed by this Item pursuant to Item 401 of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Information About our Directors, Officers and 5% Stockholders" and is incorporated in this Annual Report on Form 10-K by reference.

The information required to be disclosed by this Item pursuant to Item 405 of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Section 16(a) Beneficial Ownership Reporting Compliance" and is incorporated in this Annual Report on Form 10-K by reference.

We have adopted a Code of Business Conduct and Ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. The text of our Code of Business Conduct and Ethics is posted in the "Investors—Corporate Governance" section of our website, www.icagen.com. We intend to disclose on our website any amendments to, or waivers from, our Code of Business Conduct and Ethics that are required to be disclosed pursuant to the disclosure requirements of Item 5.05 of Form 8-K.

The information required to be disclosed by this Item pursuant to Item 407(c)(3), (d)(4) and (d)(5) of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Corporate Governance" and is incorporated in this Annual Report on Form 10-K by reference.

## ITEM 11—EXECUTIVE COMPENSATION

The information required to be disclosed by this Item pursuant to Items 402 and 407(e)(4) and (e)(5) of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the captions "Compensation of our Directors and Executive Officers" and is incorporated in this Annual Report on Form 10-K by reference.

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

The information required to be disclosed by this Item pursuant to Item 403 of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Information About our Directors, Officers and 5% Stockholders—Security Ownership of Certain Beneficial Owners and Management" and is incorporated in this Annual Report on Form 10-K by reference.

The information required to be disclosed by this Item pursuant to Item 201(d) of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Compensation of our Directors and Executive Officers—Securities Authorized for Issuance Under our Equity Compensation Plans" and is incorporated in this Annual Report on Form 10-K by reference.

## ITEM 13—CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required to be disclosed by this Item pursuant to Item 404 of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the captions "Certain Relationships and Transactions with Related Persons" and "Compensation of our Directors and Executive Officers" and is incorporated in this Annual Report on Form 10-K by reference.

The information required to be disclosed by this Item pursuant to Item 407(a) of Regulation S-K is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Corporate Governance" and is incorporated in this Annual Report on Form 10-K by reference.

## ITEM 14—PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required to be disclosed by this Item pursuant to Item 9(e) of Schedule 14A is contained in the proxy statement for our 2010 annual meeting of stockholders under the caption "Proposal 2—Ratification of the Appointment of Auditors" and is incorporated in this Annual Report on Form 10-K by reference.

## PART IV

## ITEM 15—EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) 1. *Index to Financial Statements*

The following financial statements of Icagen, Inc. are included in this report immediately following the signature page:

- Report of Independent Registered Public Accounting Firm
- Balance Sheets at December 31, 2009 and 2008
- Statements of Operations for the years ended December 31, 2009, 2008 and 2007
- Statements of Stockholders' Equity for the years ended December 31, 2009, 2008 and 2007
- Statements of Cash Flows for the years ended December 31, 2009, 2008 and 2007
- Notes to the Financial Statements

2. *Index to Financial Statement Schedules*

Financial statement schedules are omitted because they are either not required or the required information is provided in the consolidated financial statements or notes thereto.

3. *Index to Exhibits*

The exhibits filed herewith or incorporated by reference are set forth on the Exhibit Index attached hereto.

## 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.

ICAGEN, INC.
(Registrant)

By: /s/ P. KAY WAGONER, PH.D.
**P. Kay Wagoner, Ph.D.**
**Chief Executive Officer and President**

Date: March 30, 2010

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/ P. KAY WAGONER, PH.D.<br>**P. Kay Wagoner, Ph.D.** | Director, Chief Executive Officer and President (Principal Executive Officer) | March 30, 2010 |
| /s/ RICHARD D. KATZ, M.D.<br>**Richard D. Katz, M.D.** | Executive Vice President, Finance and Corporate Development and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | March 30, 2010 |
| /s/ ANDRÉ L. LAMOTTE, SC.D.<br>**André L. Lamotte, Sc.D.** | Director | March 30, 2010 |
| /s/ ANTHONY B. EVNIN, PH.D.<br>**Anthony B. Evnin, Ph.D.** | Director | March 30, 2010 |
| /s/ CHARLES A. SANDERS, M.D.<br>**Charles A. Sanders, M.D.** | Director | March 30, 2010 |
| **Dennis B. Gillings, Ph.D.** | Director | |
| /s/ RICHARD G. MORRISON, PH.D.<br>**Richard G. Morrison, Ph.D.** | Director | March 30, 2010 |
| /s/ MARTIN A. SIMONETTI<br>**Martin A. Simonetti** | Director | March 30, 2010 |
| /s/ ADEOYE Y. OLUKOTUN, M.D.<br>**Adeoye Y. Olukotun, M.D.** | Director | March 30, 2010 |

## ICAGEN, INC.

## INDEX TO FINANCIAL STATEMENTS

## Report of Independent Registered Public Accounting Firm

**The Board of Directors and Stockholders of Icagen, Inc.**

We have audited the accompanying balance sheets of Icagen, Inc. as of December 31, 2009 and 2008, and the related statements of operations, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2009. 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 financial position of Icagen, Inc. at December 31, 2009 and 2008, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2009, in conformity with U.S. generally accepted accounting principles.

As discussed in Note 1 to the financial statements, the Company's recurring losses from operations and negative operating cash flows raise substantial doubt about its ability to continue as a going concern. Management's plans as to these matters also are described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Icagen, Inc.'s internal control over financial reporting as of December 31, 2009, 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 30, 2010 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Raleigh, North Carolina
March 30, 2010

**Icagen, Inc.**

**Balance Sheets**

(in thousands, except share and per share data)

| | December 31, 2009 | December 31, 2008 |
|---|---|---|
| **Assets** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 18,149 | $ 34,215 |
| Accounts receivable | 24 | 14 |
| Prepaid expenses and other | 641 | 568 |
| Total current assets | 18,814 | 34,797 |
| Property and equipment, net | 1,837 | 2,586 |
| Technology licenses and related costs, net of accumulated amortization of $394 and $383 as of December 31, 2009 and 2008, respectively | 336 | 392 |
| Deposits and other | 105 | 105 |
| Total assets | $ 21,092 | $ 37,880 |
| **Liabilities and stockholders' equity** | | |
| Current liabilities: | | |
| Accounts payable | $ 1,085 | $ 1,436 |
| Accrued expenses | 639 | 892 |
| Current portion of deferred revenue | 1,357 | 5,378 |
| Current portion of equipment debt financing | 493 | 662 |
| Total current liabilities | 3,574 | 8,368 |
| Deferred revenue, less current portion | — | 56 |
| Equipment debt financing, less current portion | 478 | 971 |
| Other non-current liabilities | 341 | 373 |
| Total liabilities | 4,393 | 9,768 |
| Commitments and contingencies | | |
| Stockholders' equity: | | |
| Common stock, $0.001 par value; 120,000,000 shares authorized at December 31, 2009 and 2008; 47,375,211 and 46,906,589 shares issued and outstanding at December 31, 2009 and 2008, respectively | 47 | 47 |
| Additional paid-in capital | 155,861 | 154,505 |
| Accumulated deficit | (139,209) | (126,440) |
| Total stockholders' equity | 16,699 | 28,112 |
| Total liabilities and stockholders' equity | $ 21,092 | $ 37,880 |

*See accompanying notes.*

**Icagen, Inc.**

**Statements of Operations**
(in thousands, except share and per share data)

| | Years ended December 31, | | |
|---|---|---|---|
| | 2009 | 2008 | 2007 |
| Collaborative research and development revenues: | | | |
| Research and development fees | $ 9,342 | $ 11,711 | $ 17,383 |
| Reimbursed research and development costs | 291 | 580 | 3,734 |
| Total collaborative research and development revenues | 9,633 | 12,291 | 21,117 |
| Operating expenses: | | | |
| Research and development | 18,063 | 22,140 | 27,854 |
| General and administrative | 4,290 | 5,748 | 5,940 |
| Total operating expenses | 22,353 | 27,888 | 33,794 |
| Loss from operations | (12,720) | (15,597) | (12,677) |
| Other income (expense): | | | |
| Interest income | 36 | 972 | 1,960 |
| Interest expense | (173) | (190) | (168) |
| Total other (expense) income, net | (137) | 782 | 1,792 |
| Loss before income taxes | (12,857) | (14,815) | (10,885) |
| Income tax benefits | (88) | — | — |
| Net loss | $ (12,769) | $ (14,815) | $ (10,885) |
| Basic and diluted net loss per share | $ (0.27) | $ (0.32) | $ (0.29) |
| Weighted average common shares outstanding—basic and diluted | 47,064,761 | 46,167,902 | 37,432,144 |

*See accompanying notes.*

**Icagen, Inc.**

**Statements of Stockholders' Equity**
(in thousands, except share and per share data)

| | Common Stock | | Additional Paid-In Capital | Accumulated Deficit | Total |
|---|---|---|---|---|---|
| | Number of Shares | Amount | | | |
| Balance at December 31, 2006 | 22,312,266 | $ 22 | $112,765 | $(100,740) | $ 12,047 |
| Issuance of common stock and warrants in the 2007 private placement, net of offering costs | 15,423,640 | 16 | 21,653 | — | 21,669 |
| Issuance of common stock to Pfizer, net of issuance costs | 2,688,172 | 3 | 4,906 | — | 4,909 |
| Issuance of restricted stock | 48,629 | — | (6) | — | (6) |
| Exercise of options and warrants for 397,912 common shares | 397,912 | — | 370 | — | 370 |
| Stock-based compensation expense | — | — | 2,580 | — | 2,580 |
| Net loss | — | — | — | (10,885) | (10,885) |
| Balance at December 31, 2007 | 40,870,619 | 41 | 142,268 | (111,625) | 30,684 |
| Issuance of common stock to Pfizer, net of issuance costs | 5,847,953 | 6 | 9,988 | — | 9,994 |
| Issuance of restricted stock | 100,802 | — | (38) | — | (38) |
| Exercise of options and warrants for 87,215 common shares | 87,215 | — | 59 | — | 59 |
| Stock-based compensation expense | — | — | 2,228 | — | 2,228 |
| Net loss | — | — | — | (14,815) | (14,815) |
| Balance at December 31, 2008 | 46,906,589 | 47 | 154,505 | (126,440) | 28,112 |
| Issuance of restricted stock | 301,079 | — | (25) | — | (25) |
| Exercise of options for 167,543 common shares | 167,543 | — | 100 | — | 100 |
| Stock-based compensation expense | — | — | 1,281 | — | 1,281 |
| Net loss | — | — | — | (12,769) | (12,769) |
| Balance at December 31, 2009 | 47,375,211 | $ 47 | $155,861 | $(139,209) | $ 16,699 |

*See accompanying notes.*

**Icagen, Inc.**

**Statements of Cash Flows**
(in thousands)

| | Years ended December 31, | | |
|---|---|---|---|
| | 2009 | 2008 | 2007 |
| **Operating activities** | | | |
| Net loss | $(12,769) | $(14,815) | $(10,885) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | | |
| Depreciation and amortization of property and equipment | 811 | 790 | 758 |
| Amortization of technology licenses and related costs | 38 | 47 | 119 |
| Stock-based compensation | 1,281 | 2,228 | 2,580 |
| Loss on the disposal of equipment | 4 | — | — |
| Write-off of technology licenses and related costs | 18 | 26 | 1,599 |
| Changes in operating assets and liabilities: | | | |
| Accounts receivable | (10) | 39 | (44) |
| Prepaid expenses and other current and non-current assets | (73) | 217 | 1,036 |
| Accounts payable and accrued expenses | (604) | (1,171) | (1,378) |
| Other liabilities | (32) | 311 | 62 |
| Deferred revenue | (4,077) | (5,651) | (1,424) |
| Net cash used in operating activities | (15,413) | (17,979) | (7,577) |
| **Investing activities** | | | |
| Acquisition of property and equipment | (66) | (1,640) | (545) |
| Proceeds from the sale of equipment | — | — | 2 |
| Net cash used in investing activities | (66) | (1,640) | (543) |
| **Financing activities** | | | |
| Proceeds from sale of common stock and warrants, net of stock issuance costs | — | 9,994 | 26,578 |
| Proceeds from equipment debt financing | — | 1,021 | 221 |
| Common stock withheld for payroll taxes upon vesting of restricted stock | (25) | (38) | (6) |
| Payments on equipment debt financing | (662) | (715) | (661) |
| Proceeds from exercise of warrants and stock options | 100 | 59 | 370 |
| Net cash (used in) provided by financing activities | (587) | 10,321 | 26,502 |
| (Decrease) increase in cash and cash equivalents | (16,066) | (9,298) | 18,382 |
| Cash and cash equivalents at beginning of year | 34,215 | 43,513 | 25,131 |
| Cash and cash equivalents at end of year | $ 18,149 | $ 34,215 | $ 43,513 |
| **Supplemental disclosure of cash flow information** | | | |
| Cash paid for interest | $ 170 | $ 184 | $ 162 |
| **Non-cash items** | | | |
| Equipment acquired through debt financing | — | — | $ 385 |

*See accompanying notes.*

**Icagen, Inc.**

**Notes to Financial Statements**

**December 31, 2009**

## 1. Company Description and Significant Accounting Policies

### Company Description

Icagen, Inc. ("Icagen" or the "Company") was incorporated in Delaware in November 1992. Icagen is a biopharmaceutical company focused on the discovery, development and commercialization of novel orally-administered small molecule drugs that modulate ion channel targets. The Company has identified multiple drug candidates that modulate ion channels. These drug candidates were developed internally or through collaborative research programs. The Company is conducting research and development activities in a number of disease areas, including epilepsy, pain and inflammation.

### Basis of Presentation, Liquidity and Management's Plans

The accompanying financial statements have been prepared assuming the Company will continue to operate as a going concern, which contemplates the realization of assets and liabilities and commitments in the normal course of business. However, as presented in the financial statements, as of December 31, 2009, the Company had a cash balance of $18.1 million and an accumulated deficit of $139.2 million. The Company also incurred a net loss of $12.8 million and negative cash flows from operations of $15.4 million in 2009. As a result, there exists substantial doubt about the Company's ability to continue as a going concern. The 2009 financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from uncertainty related to the Company's ability to continue as a going concern.

In order to conserve capital, during 2009 the Company implemented a limited reduction of its workforce and other cost reduction measures. The Company believes that based on its current operating plan, its existing cash and cash equivalents will be sufficient to enable it to fund its operations; lease, debt and other obligations; and capital expenditure requirements into the third quarter of 2010. The Company will need additional funds to meet its obligations and fund operations beyond that time. The Company has renewed its research collaboration with Pfizer for a one year term through September 2010. Except for collaboration revenue it expects to receive from Pfizer as funding for research and development activities, the Company does not currently have any commitments for future external funding.

Additional equity or debt financing, or corporate collaboration and licensing arrangements, may not be available on acceptable terms, if at all, particularly in the current economic environment. If adequate funds are not available, the Company may be required to delay, reduce the scope of or eliminate one or more of its research and development programs. If these measures are not sufficient to maintain an adequate level of capital, it may be necessary to terminate operations or seek relief under applicable bankruptcy laws. These conditions have caused the Company's independent registered public accounting firm to raise substantial doubt about its ability to continue as a going concern.

In June 2009, the Company announced that it had retained J.P. Morgan to provide advice and assistance on a range of possible transactions, including the formation of one or more collaborations or the potential acquisition of the Company. There can be no assurance that, if any transactions commence, it will be completed or as to the value that any such transaction might have for our stockholders.

If sufficient funding is available and the scope of the clinical trials that the Company is conducting expands, the Company expects to incur losses from operations for at least the next several years. Until such time, if ever, as the Company can generate substantial product revenues, the Company will be required to finance its cash

needs through public or private equity offerings, debt financings and corporate collaboration and licensing arrangements. If the Company raises additional funds by issuing equity securities, its stockholders may experience dilution. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Any debt financing or additional equity that the Company may raise may contain terms, such as liquidation and other preferences, that are not favorable to the Company or its stockholders. If the Company raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish valuable rights to the Company's technologies, research programs or product candidates or grant licenses on terms that may not be favorable to the Company.

**Private Placement**

On February 6, 2007, the Company completed a private placement in which the Company issued 15,423,640 shares of common stock, together with warrants to purchase an aggregate of 5,398,256 additional shares of common stock with an exercise price of $1.45 per share (the "Securities") for a total price of $1.42375 per Security, resulting in gross proceeds of approximately $22.0 million.

In August 2007, in connection with the collaborative research and license agreement with Pfizer Inc ("Pfizer"), the Company also entered into a purchase agreement with Pfizer to sell to Pfizer up to $15.0 million of the Company's common stock. In a first closing of the transaction on August 20, 2007, the Company sold 2,688,172 shares of common stock to Pfizer at a price of $1.86 per share, which was the closing bid price of the Company's common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the execution of the purchase agreement, resulting in gross proceeds to the Company of approximately $5.0 million. In the second closing of the transaction on February 13, 2008, the Company sold 5,847,953 shares of common stock to Pfizer at a price of $1.71 per share, which was the closing bid price of the Company's common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the date of the Company's exercise of its put option to sell the shares, resulting in gross proceeds to the Company of approximately $10.0 million.

**Revenue Recognition**

The Company's collaboration agreements contain multiple elements, including non-refundable upfront license fees, payments for reimbursement of research and development costs, payments for ongoing research and development, payments associated with achieving development, regulatory and commercialization milestones and royalties based on specified percentages of net product sales, if any. The Company applies the revenue recognition criteria outlined in Staff Accounting Bulletin ("SAB") No. 104, *Revenue Recognition* ("SAB 104") and Accounting Standards Codification ("ASC") 605 (formerly Emerging Issues Task Force ("EITF") Issue 00-21), *Revenue Arrangements with Multiple Deliverables* ("ASC 605"). In applying these revenue recognition criteria, the Company considers a variety of factors in determining the appropriate method of revenue recognition under these arrangements, such as whether the elements are separable, whether there are determinable fair values and whether there is a unique earnings process associated with each element of a contract.

Cash received in advance of revenue recognition is recorded as deferred revenue and recognized as revenue as services are performed over the applicable term of the agreement. When the period of deferral cannot be specifically identified from the agreement, the deferral period is estimated based upon other factors contained within the agreement. The Company continually reviews these estimates, which could result in a change in the deferral period and which might impact the timing and the amount of revenue recognized.

When a payment is specifically tied to a separate earnings process, revenues are recognized when the specific performance obligation associated with the payment is completed. Performance obligations typically consist of significant milestones in the development life cycle of the related program, such as the initiation or completion of clinical trials, filing for approval with regulatory agencies, receipt of approvals by regulatory agencies and the achievement of commercial milestones. Revenues from milestone payments may be considered separable from funding for research and development services because of the uncertainty surrounding the achievement of milestones for products in early stages of development. Accordingly, these payments could be recognized as revenue if and when the performance milestone is achieved if they represent a separate earnings process as described in ASC 605.

In connection with the Company's research and development collaborations, revenues are recognized from non-refundable upfront license fees, which are not believed to be specifically tied to a separate earnings process, ratably over the term of the agreement. Research and development services provided under the Company's collaboration agreement with Pfizer are on a fixed fee basis. Revenues associated with long-term, fixed fee contracts are recognized based on the performance requirements of the agreements and as services are performed. The Company's collaboration agreement with Pfizer allows for research term extensions upon mutually agreeable terms. Revenues from contract extensions are recognized as the extended services are performed.

In connection with the Company's research and development collaborations with Pfizer and the McNeil Pediatrics Division (formerly McNeil Consumer & Specialty Division) of McNeil-PPC, Inc., a subsidiary of Johnson & Johnson ("McNeil"), revenues are recognized from non-refundable upfront license fees, which the Company does not believe are specifically tied to a separate earnings process, ratably over the term of the agreement. With respect to the Company's collaboration with Pfizer, this period is the initial term of the research phase of the collaboration. With respect to the Company's collaboration with McNeil, this period was the estimated service period of the agreement, which initially was estimated to conclude on the expiration of the last-to-expire patent covered by the agreement in 2019, but was revised to be through the termination of the agreement as of September 18, 2007 (See Note 2).

Revenues derived from reimbursement of direct out-of-pocket expenses for research and development costs associated with the Company's collaboration with Pfizer and with the Company's cost sharing arrangement with McNeil are recorded in compliance with ASC 605 (formerly EITF Issue 99-19), *Reporting Revenue Gross as a Principal Versus Net as an Agent*, and ASC 605 (formerly EITF Issue 01-14), *Income Statement Characterization of Reimbursements Received for "Out-of-Pocket" Expenses Incurred.* According to the criteria established by these EITF issues, in transactions where the Company acts as a principal, with discretion to choose suppliers, bears credit risk and performs part of the services required in the transaction, the Company records revenue for the gross amount of the reimbursement. The costs associated with these reimbursements are reflected as a component of research and development expense in the statements of operations.

None of the payments that the Company has received from collaborators to date, whether deferred or recognized as revenue, is refundable even if the related program is not successful.

**Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

### Fair Value of Financial Instruments

The carrying values of cash and cash equivalents, accounts receivable and accounts payable approximate fair values at December 31, 2009 and 2008 based on the liquidity of these financial instruments or their short term nature. The carrying value of equipment debt financing approximates fair values at December 31, 2009 and 2008 based on the market interest rates available to the Company for debt of similar risk and maturities.

### Cash and Cash Equivalents

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. Cash and cash equivalents consist of the following as of (in thousands):

| | December 31, | |
|---|---|---|
| | 2009 | 2008 |
| Cash | $ 257 | $ 172 |
| Money market funds and United States government obligations | 17,892 | 34,043 |
| Total | $18,149 | $34,215 |

### Property and Equipment

Property and equipment are stated at cost. Depreciation of equipment and furniture and fixtures is computed using the straight-line method over the estimated useful lives (ranging from 3 to 5 years) of the assets beginning when the assets are placed in service. Leasehold improvements are depreciated over the lesser of the estimated useful lives of the assets or the remaining lease terms, including renewal options if applicable. Depreciation and amortization recorded on property and equipment totaled $811,000, $790,000 and $758,000 for the years ended December 31, 2009, 2008 and 2007, respectively.

### Technology Licenses and Related Costs

Technology licenses are capitalized and amortized over the lesser of the patent lives or terms of the related agreements (ranging from 10 to 20 years) using the straight-line method. The Company assesses the recoverability of its capitalized technology licenses and related costs by comparing the book value of the asset to the future net undiscounted cash flows expected to be generated by the asset.

Pursuant to its license with the Children's Medical Center Corporation ("CMCC"), the Company paid approximately $2.0 million to CMCC based on the upfront and milestone payments received from McNeil. The Company recorded this payment on its balance sheet as a long-lived asset under the category "technology licenses and related costs." Due to the termination of the collaboration agreement with McNeil, the Company determined that this long-lived asset was no longer recoverable. In accordance with ASC 360 (formerly Statement of Financial Accounting Standards ("SFAS") No. 144), *Accounting for the Impairment or Disposal of Long-Lived Assets* ("ASC 360), the Company recorded an impairment loss of $1.6 million during the second quarter of 2007. These impairment losses are reflected as a component of research and development expense in the statements of operations.

During the years ended December 31, 2009, 2008 and 2007, the Company recorded amortization of technology licenses and related costs of $38,000, $47,000 and $119,000, respectively. The weighted average

remaining amortization period of all technology licenses is 10 years. The Company estimates that future amortization of its technology licenses and related costs as of December 31, 2009 will be approximately $37,000 for each of the five years in the period ended December 31, 2014 and an aggregate of $151,000 thereafter.

During 2009, 2008 and 2007, the Company identified certain technology licenses that no longer met its strategic objectives, which were determined to be unrecoverable and for which the Company had no alternative future uses. Accordingly, the Company recorded impairment losses for such agreements at the time of determination totaling $18,000, $26,000 and $37,000, respectively for the years ended December 31, 2009, 2008 and 2007. These impairment losses are reflected as a component of research and development expense in the statements of operations.

### Deposits and Other Assets

Deposits and other assets consist of utility and rent deposits, prepayments required under the terms of clinical trial contracts for which the remaining term of the clinical trial exceeds one year and restricted cash.

### Long-Lived Assets

Long-lived assets are reviewed for impairment when events or changes in circumstances indicate the book value of the assets may not be recoverable. In accordance with ASC 360, recoverability is measured by comparing the carrying value of the asset to the future net undiscounted cash flows expected to be generated by the asset. If such an asset is considered to be impaired, the impairment to be recognized is calculated using the amount by which the book value of the asset exceeds the projected discounted future net cash flows arising from the asset.

### Accrued Expenses

The Company records all expenses in the period incurred. In addition to recording expenses for invoices received, the Company estimates the cost of services provided by third parties or materials purchased for which no invoices have been received as of each balance sheet date. Accrued expenses as of December 31, 2009 and 2008 consist primarily of development and clinical trial expenses payable to contract research organizations in connection with the Company's research and development programs.

### Significant Concentrations and Credit Risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents and accounts receivable. The Company maintains its cash and cash equivalents in accounts with three major financial institutions in the United States. Substantially all deposits in these institutions exceeded the amount of FDIC insurance provided on such deposits at December 31, 2009 and 2008. Concentrations of credit risk with respect to accounts receivable, which are unsecured, are limited due to the strong financial position of the Company's collaborator.

The Company operates in a single industry and is engaged in discovering drugs that may lead to treatments for disabling and life-threatening diseases. Collaborative research revenues from the Company's collaboration partners representing 10% or more of total collaborative research revenues are as follows:

| | Years ended December 31, | | |
|---|---|---|---|
| | 2009 | 2008 | 2007 |
| Pfizer | 100% | 100% | 21% |
| McNeil | — | — | 79% |

### Research and Development Costs

Research and development expenses include costs for scientific personnel, supplies, equipment, consultants, research sponsored by the Company, allocated facility costs, costs related to pre-clinical and clinical trials, and stock-based compensation expense. All such costs are charged to research and development expense as incurred. Collaboration agreements generally specify minimum levels of research effort required to be performed by the Company. The Company accounts for its clinical trial costs by estimating the total cost to treat a patient in each clinical trial and recognizing this cost, based on a variety of factors, beginning with the preparation for the clinical trial. This estimated cost includes payments to contract research organizations for trial site and patient-related costs, including laboratory costs related to the conduct of the trial and other costs. The cost per patient varies based on the type of clinical trial, the site of the clinical trial and the length of the treatment period for each patient.

### Income Taxes

The Company accounts for income taxes using the liability method in accordance with the provisions of ASC 740 (formerly SFAS No. 109), *Accounting for Income Taxes*. Under this method, deferred tax assets and liabilities are determined based on differences between the financial reporting and tax basis of the Company's assets and liabilities and are estimated using enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is provided when the Company determines that it is more likely than not that some portion or all of a deferred tax asset will not be realized.

### Comprehensive Loss

The Company has adopted the provisions of ASC 220 (formerly SFAS No. 130), *Comprehensive Income*, which establishes standards for the reporting and display of comprehensive income and its components for general purpose financial statements. For all periods presented, there were no differences between net loss and comprehensive loss.

### Net Loss Per Share Attributable to Common Stockholders

The Company computes net loss per share attributable to common stockholders in accordance with ASC 260 (formerly SFAS No. 128), *Earnings Per Share* ("ASC 260"). Under the provisions of ASC 260, basic net loss per share attributable to common stockholders ("Basic EPS") is computed by dividing net loss attributable to common stockholders by the weighted average number of common shares outstanding. Diluted net loss per share attributable to common stockholders ("Diluted EPS") is computed by dividing net loss attributable to common stockholders by the weighted average number of common shares and dilutive common share equivalents then outstanding. Common share equivalents consist of the incremental common shares issuable upon the conversion of preferred stock, shares issuable upon the exercise of stock options, shares issuable upon the vesting of restricted stock units and shares issuable upon the exercise of warrants. For the periods presented, Diluted EPS is identical to Basic EPS because common share equivalents, including all of the Company's Preferred Stock, outstanding stock options, outstanding restricted stock units and outstanding warrants, are excluded from the calculation, as their effect is antidilutive. Had the Company been in a net income position, these securities may have been included in the calculation. These potentially dilutive securities consist of the following on a weighted average basis:

| | Years ended December 31, | | |
|---|---|---|---|
| | 2009 | 2008 | 2007 |
| Outstanding common stock options | 5,571,746 | 5,636,519 | 5,039,193 |
| Restricted stock units | 1,939,066 | 586,193 | 300,459 |
| Outstanding warrants | 5,218,920 | 5,218,920 | 4,830,422 |
| Total | 12,729,732 | 11,441,632 | 10,170,074 |

**Stock-Based Compensation**

The Company recognizes stock-based compensation expense in accordance with ASC 718 (formerly SFAS No. 123(R)), *Share-Based Payment,* ("ASC 718") which requires that share-based payments be measured at fair value and recognized as compensation expense over the service period in which the awards are expected to vest.

**Segment Information**

ASC 280 (formerly SFAS No. 131), *Disclosure About Segments of an Enterprise and Related Information,* establishes standards for the reporting of information about operating segments. Since its inception, the Company has conducted its operations in one operating segment.

**Recent Accounting Pronouncements**

In June 2009, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Codification ("ASC") 105 (formerly Statement of Financial Accounting Standards ("SFAS") No. 168), *"The FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles—a replacement of FASB Statement No. 162"* ("ASC 105"). ASC 105 establishes the ASC as the single source of authoritative U.S. accounting and reporting standards applicable for all non-governmental entities, with the exception of guidance issued by the SEC and its staff. ASC 105 was effective July 1, 2009 and applies to all interim periods ending after September 15, 2009. Therefore, the Company adopted ASC 105 for the reporting in our 2009 third quarter. The adoption of ASC 105 did not have a material impact on the Company's financial statements.

In May 2009, the FASB issued ASC 855 (formerly SFAS No. 165), *"Subsequent Events"* ("ASC 855"). ASC 855 establishes general standards of accounting for and disclosure of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. It requires the disclosure of the date through which an entity has evaluated subsequent events and the basis for that date. ASC 855 was effective for the Company for the quarter ended June 30, 2009. The adoption of ASC 855 did not have a significant impact upon the Company's accounting for and disclosure of subsequent events.

In December 2007, the FASB issued ASC 805 (formerly SFAS No. 141R), *"Business Combinations"* ("ASC 805"). ASC 805 establishes principles and requirements for how an acquirer in a business combination recognizes and measures the assets acquired, liabilities assumed and any noncontrolling interest in the acquiree. This statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. ASC 805 applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first fiscal year beginning on or after December 15, 2008. The adoption of ASC 805 did not have a material impact on the Company's financial statements.

In November 2007, the Emerging Issues Task Force ("EITF") of the FASB reached consensus on ASC 808 (formerly EITF Issue No. 07-1), *"Accounting for Collaborative Arrangements"* ("ASC 808"). ASC 808 addresses the issue of how costs incurred and revenue generated on sales to third parties should be reported by participants in a collaborative arrangement in each of their respective income statements. ASC 808 also provides guidance on how an entity should characterize payments made between participants in a collaborative arrangement in the income statement and what participants should disclose in the notes to the financial statements about collaborative arrangements. ASC 808 was effective for fiscal years beginning after December 15, 2008 and has been applied retrospectively to all periods presented for all collaborative arrangements existing as of the effective date. The adoption of ASC 808 did not have a material impact on the Company's financial statements.

In September 2006, the FASB issued ASC 820 (formerly SFAS No. 157), *"Fair Value Measurements"* ("ASC 820"). ASC 820 defines fair value, establishes a framework for measuring fair value in accordance with accounting principles generally accepted in the United States, and expands disclosures about fair value measurements. This pronouncement applies under the other accounting standards that require or permit fair value measurements. Accordingly, this statement does not require any new fair value measurements. ASC 820 was effective for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years, for all financial assets and liabilities and for nonfinancial assets and liabilities that are recognized or disclosed at fair value at least annually. It is effective for fiscal years beginning after November 15, 2008 for all other nonfinancial assets and liabilities. ASC 820 is to be applied prospectively. The adoption of the requirements of ASC 820 that were effective January 1, 2008 and January 1, 2009 did not have a material impact on the Company's financial statements.

## 2. Collaborations

The Company has entered into research collaboration agreements to extend the Company's ion channel drug discovery technology into additional therapeutic areas and to benefit from the research, development and commercialization capabilities of the Company's collaborators, as well as to augment the Company's financial resources. A non-refundable upfront license fee was paid by each collaborator for rights to certain of the Company's technology. These collaborative research agreements also provide for periodic payments to support the research phase of such programs and payments upon completion of specified research, development, regulatory and commercial milestones. The Company may also receive reimbursement for certain research costs and royalty payments under these agreements based on specified percentages of net product sales, if any. As of December 31, 2009, the Company had one collaboration with Pfizer. The Company's collaboration with McNeil terminated effective September 18, 2007.

### *Pfizer*

On August 13, 2007, the Company entered into a collaborative research and license agreement with Pfizer for the discovery, development, manufacture and commercialization of compounds and products that modulate three specific sodium ion channels as new potential treatments for pain and related disorders. Pursuant to the collaboration arrangement, Pfizer paid the Company an initial upfront license fee of $12.0 million. The Company recognized this payment from Pfizer as revenue in accordance with SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature. Specifically, the $12.0 million upfront license payment was recorded as deferred revenue, which was amortized to revenue over the two-year life of the initial research term. In September 2009, the research term was extended for one year through September 30, 2010. In addition to the upfront license fee, Pfizer is providing the Company with research and development funding over the research period pursuant to the agreement. The research term may be extended upon mutual agreement of Pfizer and the Company. Additionally, Pfizer is obligated to make payments to the Company upon achievement of specified research, development, regulatory and commercialization milestones of $359.0 million for each drug candidate developed. The Company is also eligible to receive tiered royalties, against which Pfizer may credit any commercialization milestones, based on specified percentages of net product sales. The Company recognized $9.6 million, $12.3 million and $4.4 million of revenue related to the Pfizer collaboration agreement for the years ended December 31, 2009, 2008 and 2007, respectively.

In connection with the collaborative research and license agreement with Pfizer, on August 13, 2007, the Company also entered into a purchase agreement with Pfizer to sell to Pfizer up to $15.0 million of the Company's common stock. In a first closing of the transaction on August 20, 2007, the Company sold 2,688,172 shares of common stock to Pfizer at a price of $1.86 per share, which was the closing bid price of the common

stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the execution of the purchase agreement, resulting in gross proceeds to the Company of approximately $5.0 million. In the second closing of the transaction on February 13, 2008, the Company sold 5,847,953 shares of common stock to Pfizer at a price of $1.71 per share, which was the closing bid price of the Company's common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the date of the Company's exercise of its put option to sell the shares, resulting in gross proceeds to the Company of approximately $10.0 million.

On March 14, 2008, together with Pfizer, the Company entered into a collaboration with the laboratory of Professor B. A. Wallace at Birkbeck College, University of London, to study the structural biology of sodium channels. This three party relationship was created to support the previously established collaboration between Icagen and Pfizer for the discovery of compounds which modulate specific sodium ion channels as potential new treatments for pain and related disorders. In connection with the Birkbeck collaboration, the Company also entered into a supplemental agreement with Pfizer that required Pfizer to reimburse the Company for certain equipment to be used in the collaboration as well as pay the Company for additional research and development services over a two year term. The Company is also contributing services to the collaboration and is recognizing these payments from Pfizer as revenue ratably over the term of the collaboration in accordance with SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature.

***McNeil***

On June 14, 2004, the Company entered into collaboration and copromotion agreements with McNeil to develop and commercialize senicapoc for the treatment of sickle cell disease. Pursuant to the collaboration arrangement, McNeil paid the Company an initial upfront payment of $10.0 million, $1.3 million of which the Company paid to Children's Medical Center Corporation ("CMCC"), and a milestone payment of $5.0 million upon acceptance by the U.S. Food and Drug Administration ("FDA") of the protocol for the Company's Phase III clinical trial of senicapoc for the treatment of sickle cell disease, $650,000 of which the Company paid to CMCC in February 2005. The Company recognized these payments from McNeil as revenue in accordance with SAB 104, ASC 605 (formerly EITF 00-21) and other relevant accounting literature. Specifically, both the $10.0 million upfront payment and the $5.0 million milestone payment were recorded as deferred revenue, which was being amortized to revenue over the life of the agreement. At the time of the execution of the agreement, the achievement of the milestone above was not considered to represent a separate earnings process, and therefore this payment was treated in a manner consistent with the accounting treatment applied to the $10.0 million upfront payment rather than recognized as revenue when received. McNeil was also potentially obligated to pay the Company up to an additional $48.0 million based on the achievement of specified clinical and regulatory milestones.

Under the terms of the agreements, the Company and McNeil agreed to copromote senicapoc for the treatment of sickle cell disease in the United States and share equally in profits and losses from the commercialization of senicapoc for the treatment of sickle cell disease in the United States. The Company was also entitled to copromote senicapoc for the treatment of sickle cell disease with McNeil, at its option, in Canada. Under the collaboration agreement, the Company granted McNeil a worldwide exclusive license to senicapoc for the treatment of sickle cell disease and other compounds covered by a specific patent. McNeil was entitled, subject to specified rights retained by the Company, to commercialize senicapoc for the treatment of sickle cell disease and the other licensed compounds outside the copromotion territory pursuant to this license and was required to pay the Company a royalty on net product sales.

The Company and McNeil had agreed to fund equally the ongoing development costs incurred pursuant to an agreed upon development plan for senicapoc in the copromotion territory for sickle cell disease. McNeil was

required to fund all development costs outside of the copromotion territory. The Company recorded revenue from reimbursed research and development costs for development expenses outside of the copromotion territory based on the actual percentage of patients enrolled at clinical trial sites outside the copromotion territory.

During the second quarter of 2007, the Company received notification from McNeil of its termination of the collaboration agreement between the Company and McNeil for the development of senicapoc (formerly ICA-17043) for the treatment of sickle cell disease effective as of September 18, 2007. A Phase III clinical trial to evaluate the ability of senicapoc to reduce crisis rate, the primary endpoint, in patients with sickle cell disease was previously terminated during the second quarter of 2007. The Company had recorded an upfront payment and a milestone payment from McNeil totaling $15.0 million as deferred revenue and was amortizing such deferred revenue over the original 15 year estimated service period of the contract. In June 2007, the Company revised its estimate of the term of its substantive obligations under the contract from ending in June 2019 to ending in September 2007. Accordingly, the Company recognized the remaining balance of deferred revenue in 2007 as the collaboration ended and the Company's contractual obligations became complete.

For the year ended December 31, 2007, loss from continuing operations and net loss decreased by $11.5 million due to this change in estimate. For the year ended December 31, 2007, basic and diluted net loss per share decreased by $0.31 due to this change in estimate.

## 3. Property and Equipment, Net

Property and equipment, net consists of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2009 | 2008 |
| Equipment | $ 8,632 | $ 8,755 |
| Leasehold improvements | 1,729 | 1,715 |
| Furniture and fixtures | 373 | 352 |
| | 10,734 | 10,822 |
| Less: accumulated depreciation and amortization | (8,897) | (8,236) |
| Property and equipment, net | $ 1,837 | $ 2,586 |

## 4. Accrued Expenses

Accrued expenses consist of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2009 | 2008 |
| Accrued development and clinical trial expenses | $247 | $761 |
| Restructuring reserve | 223 | — |
| Other accrued expenses | 169 | 131 |
| Total accrued expenses | $639 | $892 |

## 5. Commitments and Contingencies

The Company's obligations consist of equipment debt financing, noncancelable operating leases, technology licenses, employment arrangements and other contractual obligations.

*Equipment Debt Financing*

In July 1999, the Company entered into an equipment financing agreement with Oxford Finance Corporation, which was subsequently amended to provide for the acquisition of up to $3.7 million in equipment and other fixed assets. The financing agreement carries an interest rate indexed to the average yields on four-year U.S. Treasury Notes, as published by the Dow Jones Telerate Access Service, and requires repayment of principal and interest over 36 to 48 months with a final maturity of 2012. The applicable interest rates through December 31, 2009 ranged from 12.52% to 13.11%. This financing is structured as individual equipment notes, secured by the assets financed under such notes, and does not allow additional asset purchases under this financing beyond December 2008.

In November 2007, the Company entered into a Master Security Agreement with General Electric Capital Corporation (the "GE Agreement") to finance up to $1.0 million of additional equipment, computer hardware and office furniture through December 31, 2007. Borrowings under the GE Agreement bear interest at a fixed rate of 11.30% per year and are payable in monthly installments over 36 to 42 months with a final maturity date of 2011. This financing is structured as individual equipment notes, secured by the assets financed under such notes, and does not allow additional asset purchases under this financing beyond December 2007.

As of December 31, 2009 and 2008, approximately $971,000 and $1.6 million of the equipment debt financing notes were outstanding, respectively. Total equipment with a net carrying value of $984,000 collaterizes the outstanding equipment debt financing balance at December 31, 2009.

Property and equipment includes the following amounts financed through equipment debt financing (in thousands):

| | December 31, | |
|---|---|---|
| | 2009 | 2008 |
| Equipment, furniture and fixtures | $1,841 | $ 2,966 |
| Less: accumulated depreciation | (857) | (1,225) |
| | $ 984 | $ 1,741 |

As of December 31, 2009, future annual principal payments under equipment debt financing consist of the following for the years ending December 31 (in thousands):

| | |
|---|---|
| 2010 | $ 493 |
| 2011 | 350 |
| 2012 | 128 |
| Total | 971 |
| Current portion of equipment debt financing | (493) |
| Equipment debt financing, less current portion | $ 478 |

*Noncancelable Operating Leases*

The Company leases certain office equipment under noncancelable operating leases expiring in 2013. The Company leases its facilities under various noncancelable operating leases that expire from 2010 through 2012. One of the Company's facility leases is subject to voluntary renewal options and included a $260,000 tenant improvement allowance and another of the Company's facility leases included three months rent abatement. The

terms of the facility leases provide for rental payments on a graduated scale and the Company's payment of certain operating expenses. Minimum rent payments, net of rent abatement and allowances, under operating leases are recognized on a straight line basis over the term of the lease, including renewal options if applicable. At December 31, 2009, the Company had provided one of its lessors with an irrevocable letter of credit with a balance of $100,000 during the lease term. This letter of credit is secured by a cash deposit, which is included in deposits and other in the accompanying balance sheets.

As of December 31, 2009, future annual minimum payments under noncancelable operating leases with terms in excess of one year consist of the following for the years ending December 31 (in thousands):

| | |
|---|---|
| 2010 | $ 518 |
| 2011 | 498 |
| 2012 | 199 |
| 2013 | 8 |
| Total minimum lease payments | $1,223 |

Rental expense associated with operating leases was $706,000, $690,000 and $498,000 for the years ended December 31, 2009, 2008 and 2007, respectively.

*Technology Licenses*

The Company is a party to a number of license agreements, primarily with academic institutions, under which it licenses patents, patent applications and other intellectual property for which the Company paid upfront license fees. The duration of these agreements varies from 10 years to the expiration date of the last-to-expire patent, and the Company has the option to renew some of these agreements at the end of their terms. The Company's technology license agreements are generally terminable by the Company upon short notice. Under certain conditions, the Company can grant sublicenses for which the licensors receive a fee. Some of these licenses require annual maintenance fees and periodic payments upon the achievement of specified development and regulatory milestones. The Company is obligated to pay specified royalties for licensed and sublicensed product sales or specified percentages of income received from sublicenses, and in some cases minimum annual royalties. As of December 31, 2009 and 2008, there were no milestone payments or royalties due under these technology license agreements.

In February 2000, the Company entered into an agreement with CMCC for a worldwide exclusive license to products covered by the patent rights licensed from CMCC. The patent rights licensed to the Company by CMCC include patent rights directed to the use of specified classes of compounds for most fields of human and veterinary therapeutics and diagnostics, including the Company's prior drug candidate for the treatment of sickle cell disease and asthma. The Company has the right to grant sublicenses under this license. Patents licensed under the CMCC agreement expire over the period from 2012 through 2016.

In exchange for the rights licensed from CMCC, the Company paid CMCC an upfront license fee and license maintenance fees aggregating $250,000. Under the Company's license agreement with CMCC, the Company is required to pay CMCC royalties on net product sales by the Company or the Company's affiliates. The Company is also required to make payments to CMCC aggregating up to an additional $250,000 based on achieving specified development and regulatory milestones with respect to each licensed product, which is not a sublicensed product. The Company is entitled to a credit for the development and regulatory milestone payments that it makes against the royalties that the Company would otherwise be obligated to pay of up to, but not more than, 50% of the royalties due in any given payment period. The Company is obligated to pay CMCC specified amounts with respect to any sublicense income received by the Company.

The Company's royalty obligation with respect to each licensed product extends until the expiration of the last-to-expire patent, which expires on September 16, 2014, licensed from CMCC covering the licensed products in any country. Upon the later of the expiration of the last-to-expire licensed patent or February 2015, the agreement expires.

Pursuant to its license with CMCC, the Company's obligation to pay CMCC specified amounts with respect to sublicense income applies to the upfront and milestone payments, royalties and share of profits in the copromotion territory received by the Company under the Company's prior collaboration agreement with McNeil. The Company paid CMCC $1.3 million of the $10.0 million upfront payment that the Company received from McNeil in June 2004, and paid CMCC $650,000 of the $5.0 million milestone payment that the Company received from McNeil upon acceptance of the protocol for the Company's pivotal Phase III clinical trial of senicapoc for the treatment of sickle cell disease by the FDA. Payments or obligations to CMCC were originally recorded on the balance sheet as long-term assets under the category "technology licenses and related costs" and were amortized to expense over the term of the agreement. Due to the termination of the collaboration agreement with McNeil, the Company determined that this long-lived asset was no longer recoverable. In accordance with ASC 360 (formerly SFAS 144), the Company recorded an impairment loss of $1.6 million during the second quarter of 2007, which is recorded as a component of research and development expense in the statement of operations for the year ended December 31, 2007.

As of December 31, 2009, future annual license maintenance fees under the Company's technology license agreements consist of the following for the years ending December 31 (in thousands):

| | |
|---|---|
| 2010 | $ 63 |
| 2011 | 63 |
| 2012 | 63 |
| 2013 | 44 |
| 2014 | 42 |
| 2015 through 2024 | 265 |
| Total | $540 |

The aggregate amount of the annual maintenance fees under these technology license agreements was $46,000, $111,000 and $108,000 in 2009, 2008 and 2007, respectively.

*Employment Arrangements*

The Company provides a severance arrangement for its executive officers and certain other employees, which includes salary and bonus continuance and continued health benefits (or payment of the amount equal to premiums that the Company was paying for such benefits) and which is triggered under certain circumstances. At December 31, 2009, the Company had a remaining obligation of $164,000 related to these arrangements as a result of a workforce reduction which was implemented in 2009. At December 31, 2009, the aggregate amount of potential future obligations under these arrangements was $4.4 million. At December 31, 2008, the Company had not incurred or recorded any obligation related to these arrangements.

*Restructuring*

During 2009, the Company implemented a number of cost savings measures, including a limited workforce reduction, in order to conserve cash. The Company recorded restructuring charges of approximately $469,000 in 2009 related to termination benefits. The restructuring charges are included as a component of both research and development and general and administrative expense in the statement of operations. The restructuring costs are being accounted for pursuant to ASC 420 (formerly "SFAS No. 146"), *Accounting for Costs Associated with Exit or Disposal Activities*. The following table summarizes the activity in the restructuring accrual for the year ended December 31, 2009:

| | Balance at December 31, 2008 | Charges | Payments | Balance at December 31, 2009 |
|---|---|---|---|---|
| Severance Costs | $— | $469 | $(246) | $223 |
| Total | $— | $469 | $(246) | $223 |

*Other Contractual Obligations*

Other contractual obligations as of December 31, 2009 consisted of $251,000 related to commitments for contract research services for preclinical research and other commitments.

## 6. Stockholders' Equity

*Capital Structure*

As of December 31, 2009 and 2008, the Company was authorized to issue up to 120,000,000 shares of $0.001 par value common stock and 10,000,000 shares of $0.001 par value preferred stock in one or more series.

*Common Stock*

In connection with the collaborative research and license agreement with Pfizer, on August 13, 2007, the Company entered into a purchase agreement with Pfizer to sell to Pfizer up to $15.0 million of the Company's common stock. In the first closing of the transaction on August 20, 2007, the Company sold 2,688,172 shares of common stock to Pfizer at a price of $1.86 per share, which was the closing bid price of the common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the execution of the purchase agreement, resulting in gross proceeds to the Company of approximately $5.0 million. In the second closing of the transaction on February 13, 2008, the Company sold 5,847,953 shares of common stock to Pfizer at a price of $1.71 per share, which was the closing bid price of the Company's common stock as reported on the Nasdaq Global Market as of 4:00 p.m. Eastern time on the business day preceding the date of the Company's exercise of its put option to sell the shares, resulting in gross proceeds to the Company of approximately $10.0 million.

Pursuant to the purchase agreement that the Company entered into in connection with the equity investment by Pfizer, the Company has agreed to file, at any time after August 20, 2008, upon the request of Pfizer, a registration statement with the SEC covering the resale of the aggregate number of shares issued pursuant to the purchase agreement. The terms of the purchase agreement require the Company to pay liquidated damages to Pfizer in the event that the Company does not file the registration statement with the SEC within 30 days after the request by Pfizer to file such registration statement, the registration statement does not become effective or its effectiveness is not maintained beginning 90 days after the registration request (if the registration statement is not

reviewed by the SEC) or 120 days after the registration request (if it is so reviewed) or, after the registration statement is declared effective by the SEC, the registration statement is suspended by the Company or ceases to remain continuously effective as to all registrable securities for which it is required to be effective, with certain specified exceptions ("Pfizer Registration Default"). Subject to the specified exceptions, for each 30-day period or portion thereof during which a Pfizer Registration Default remains uncured, the Company is obligated to pay Pfizer an amount in cash equal to 1% of Pfizer's aggregate purchase price, up to a maximum of 10% of the aggregate purchase price paid by Pfizer.

On February 6, 2007, the Company completed a private placement in which the Company issued 15,423,640 shares of common stock, together with warrants to purchase an aggregate of 5,398,256 additional shares of common stock with an exercise price of $1.45 per share for a total price of $1.42375 per Security, resulting in gross proceeds of approximately $22.0 million.

As of December 31, 2009 and 2008, the Company had a total of 47,375,211 and 46,906,589 shares of common stock outstanding, respectively.

*Stockholder Rights Plan*

On December 2, 2008, the Company adopted a stockholder rights plan pursuant to which it issued a dividend of one preferred share purchase right for each share of common stock held by stockholders of record on December 15, 2008. The Company's stockholders approved the rights plan on June 2, 2009. Each right entitles stockholders to purchase one one-thousandth of a share of the Company's Series A Junior Participating Preferred Stock at a price of $7.50, subject to adjustment under certain circumstances. Unless the Company redeems or exchanges the rights at an earlier date, they will expire upon the close of business on December 2, 2018.

The rights issued under the stockholder rights plan will automatically trade with the underlying common stock and will initially not be exercisable. If a person acquires or commences a tender offer for 15% (or in the case of Pfizer, which currently owns approximately 18% of the Company's common stock, 20%) or more of the Company's common stock in a transaction that was not approved by the Company's Board of Directors, each right, other than those owned by the acquiring person, would instead entitle the holder to purchase $15.00 worth of common stock for the $7.50 exercise price. If the Company is involved in a merger or other transaction with another company that is not approved by its Board of Directors, in which the Company is not the surviving corporation or which transfers more than 50% of its assets to another company, then each right, other than those owned by the acquiring person, would instead entitle the holder to purchase $15.00 worth of the acquiring company's common stock for the $7.50 exercise price.

The Company's Board of Directors may redeem the rights for $0.001 per right at any time until ten business days after a person acquires 15% (or in the case of Pfizer, 20%) of the Company's common stock, or on the date on which any executive officer of Icagen has actual knowledge of such acquisition, whichever is later. The Board of Directors may also extend the date by which the rights may be redeemed. Unless the Company redeems or exchanges the rights at an earlier date, they will expire upon the close of business on December 2, 2018.

*Warrants*

In connection with the Company's private placement completed on February 6, 2007, the Company issued warrants to purchase an aggregate of 5,398,256 shares of common stock with an exercise price of $1.45 per share. These warrants may be exercised for cash or on a cashless basis and expire in February 2012. During the year ended December 31, 2007, warrants to purchase 179,336 shares of common stock were exercised resulting

in the issuance of 169,863 shares of common stock. At December 31, 2009 and 2008, there were warrants to purchase 5,218,920 shares of common stock outstanding.

*Common Stock Reserved for Future Issuance*

The Company had reserved shares of common stock for future issuance as follows:

| | December 31, 2009 |
|---|---|
| Outstanding stock options | 5,083,978 |
| Outstanding restricted stock units | 1,708,508 |
| Outstanding warrants | 5,218,920 |
| Possible future issuance under the 2004 equity compensation plan | 2,566,933 |
| Total shares reserved | 14,578,339 |

**7. Stock-Based Compensation**

In January 1996, the Board of Directors adopted and the stockholders approved the Icagen, Inc. Equity Compensation Plan (the "1996 Plan") to create an additional incentive for key employees, directors and consultants or advisors. The 1996 Plan authorized the issuance of stock options to be granted as incentive and nonqualified stock options, restricted stock, and other stock-based awards. The Board of Directors determined the exercise prices of all options granted. The options vest based on terms provided for in the individual stock option agreements issued pursuant to the 1996 Plan. Options generally vest on a monthly basis over a period of one to four years and have a contractual life of ten years.

In February 2004, the Board of Directors adopted and on May 19, 2004, the stockholders approved, the 2004 Stock Incentive Plan (the "2004 Plan"), which became effective on February 3, 2005, the date on which the Company's registration statement for its IPO was declared effective. The 2004 Plan provides for the grant of incentive stock options, non-statutory stock options, restricted stock awards and other stock-based awards. Upon effectiveness of the 2004 Plan, the number of shares of common stock reserved for issuance under the 2004 Plan was 3,080,892 shares. The 2004 Plan also contains a provision that allows for an automatic annual increase in the number of shares authorized under the 2004 Plan, beginning in 2006, subject to certain limitations specified in the 2004 Plan. On June 26, 2007, the 2004 plan was amended to increase the number of shares reserved for issuance under the plan from 3,150,000 to 6,150,000.

The fair value of each option award is estimated on the date of grant using the Black-Scholes-Merton option pricing model, using the assumptions noted in the following table. Expected volatility is based on the historical volatility of the Company's common stock price and the volatility of the common stock prices of other comparable companies in the biotechnology industry. The Company uses historical data to estimate option exercises and forfeitures used in the model. The expected term of options granted represents the period of time that options granted are expected to be outstanding. The Company analyzed separate groups of employees with similar exercise behavior to determine the expected term. The risk-free interest rate for periods within the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant. As of December 31, 2009, the Company had 5,083,978 options outstanding with a weighted average exercise price of $2.21, and 1,708,508 restricted stock units outstanding. Remaining compensation expense as of December 31, 2009 to be recognized on these options and restricted stock units through December 2013 is approximately $457,000 and $900,000, respectively. The weighted-average period of time over which these costs will be recognized for stock options and restricted stock units is 1.8 and 2.8 years, respectively. As of December 31,

2009, the Company had 4,631,497 options exercisable with a weighted average exercise price of $2.26. As of December 31, 2009, the Company had 5,073,380 options vested and expected to vest with a weighted average exercise price of $2.21. The weighted-average remaining contractual terms of the exercisable options and options vested and expected to vest at December 31, 2009 is 5.1 and 5.3 years, respectively. The aggregate intrinsic value of exercisable options and options vested and expected to vest at December 31, 2009 was $2,900.

The fair value of each option grant was determined using the Black-Scholes-Merton option pricing model with the following weighted average assumptions:

| | Years ended December 31, | | |
|---|---|---|---|
| | 2009 | 2008 | 2007 |
| Expected dividend yield | 0.0% | 0.0% | 0.0% |
| Risk-free interest rate | 3.2% | 3.3% | 4.5% |
| Expected volatility | 100.0% | 100.0% | 70.0% |
| Expected life (in years) | 7.0 | 5.7 | 4.8 |
| Estimated weighted average grant date fair value per share of options granted | $ 0.35 | $ 1.19 | $0.92 |

The following table summarizes activity related to stock options and restricted stock units as of December 31, 2009, and changes during the year then ended:

| | Shares Available for Grant | Stock Options Outstanding | Weighted Average Exercise Price | Restricted Stock Units Outstanding |
|---|---|---|---|---|
| Balance at December 31, 2008 | 2,887,234 | 5,683,558 | $2.15 | 559,948 |
| Authorized | 1,000,000 | — | — | — |
| Granted | (1,719,308) | 90,000 | 0.42 | 1,629,308 |
| Exercised/Released | — | (167,543) | 0.61 | (345,861) |
| Forfeited/Cancelled | 399,007 | (522,037) | 1.80 | (134,887) |
| Balance at December 31, 2009 | 2,566,933 | 5,083,978 | $2.21 | 1,708,508 |

Selected information regarding stock options as of December 31, 2009 follows:

| Options Outstanding | | | | Options Exercisable | |
|---|---|---|---|---|---|
| Range of Exercise Prices | Number of Options | Weighted Average Remaining Life in Years | Weighted Average Exercise Price | Number of Options | Weighted Average Exercise Price |
| $0.42 – $0.75 | 366,239 | 2.9 | $0.66 | 366,239 | $0.66 |
| 0.76 – 1.08 | 1,711,044 | 6.5 | 0.91 | 1,669,013 | 0.91 |
| 1.09 – 2.00 | 1,236,946 | 5.4 | 1.70 | 945,716 | 1.75 |
| 2.01 – 2.50 | 861,565 | 4.6 | 2.18 | 748,655 | 2.20 |
| 2.51 – 5.00 | 386,445 | 4.4 | 4.94 | 384,939 | 4.94 |
| 5.01 – 6.50 | 336,235 | 4.6 | 6.27 | 332,804 | 6.27 |
| 6.51 – 8.00 | 135,766 | 5.0 | 7.21 | 134,643 | 7.21 |
| 8.01 – 9.12 | 49,738 | 5.7 | 8.79 | 49,488 | 8.79 |
| $0.42 – $9.12 | 5,083,978 | 5.3 | $2.21 | 4,631,497 | $2.26 |

The intrinsic value of options exercised during the years ended December 31, 2009, 2008 and 2007 was $39,000, $76,000 and $295,000, respectively. The total fair value of options vested during the years ended December 31, 2009, 2008 and 2007 was $631,000, $1.6 million and $2.0 million, respectively.

At December 31, 2009 and 2008, 4,631,497 and 4,507,383 of the Company's outstanding options were exercisable, respectively.

## 8. Related Party Transactions

At December 31, 2009 and 2008, Pfizer held 8,536,125 shares of the Company's common stock. Total revenues from Pfizer totaled approximately $9.6 million, $12.3 million and $4.4 million in 2009, 2008 and 2007, respectively, including partial recognition of a non-refundable upfront license fee of $12.0 million in 2009, 2008 and 2007 that was recognized as revenue ratably over the initial two-year research term of the Company's collaboration agreement with Pfizer.

The Company incurred expense of $771,000, $658,000 and $6.3 million from Quintiles Transnational Corp. for development and clinical trial services in 2009, 2008 and 2007, respectively. Quintiles Transnational Corp. is an affiliate of one of the Company's stockholders, and the chairman of the board and chief executive officer of Quintiles Transnational Corp. is a stockholder and a member of the Company's Board of Directors. The amounts paid to Quintiles Transnational Corp. are included in research and development expense on the statements of operations. Amounts included in accounts payable related to these services totaled $68,000 and $0 at December 31, 2009 and 2008, respectively.

## 9. Income Taxes

A reconciliation of the Company's income tax benefit at the federal statutory rate to actual income tax benefit is as follows (in thousands):

| | 2009 | 2008 | 2007 |
|---|---|---|---|
| Income tax benefit at federal statutory rate | $(4,469) | $(5,185) | $(3,810) |
| State taxes, net of federal expense | (638) | (741) | (544) |
| Research and development credit | (406) | (434) | 103 |
| Orphan drug credit | — | 5,887 | (1,145) |
| Stock compensation | 495 | 641 | 749 |
| Other, net | (1,233) | (616) | 83 |
| Change in valuation allowance | 6,163 | 448 | 4,564 |
| Income tax benefit | $ (88) | $ — | $ — |

A reconciliation of the statutory income tax rate to the effective income tax rate as recognized in the statements of operations is as follows:

| | 2009 | 2008 | 2007 |
|---|---|---|---|
| Federal statutory rate | (35.0)% | 35.0% | 35.0% |
| State tax rate, net of federal benefit | (5.0)% | 5.0% | 5.0% |
| Tax credits and non-deductible expenses | (8.6)% | (41.2)% | 10.5% |
| Change in valuation allowance | 47.9% | 1.2% | (50.5)% |
| | (0.7)% | 0.0% | 0.0% |

The income tax effects of temporary differences that give rise to significant portions of deferred tax assets are as follows as of December 31 (in thousands):

| | 2009 | 2008 |
|---|---|---|
| Deferred tax assets: | | |
| Deferred revenue | $ 543 | $ 2,174 |
| Excess book depreciation | 277 | 338 |
| Stock-based compensation expense | 1,325 | 1,094 |
| Net operating loss carryforwards | 51,378 | 44,073 |
| Research and development credit carryforwards | 3,964 | 3,645 |
| Orphan drug credit carryforward | 12,427 | 12,427 |
| Alternative minimum tax credit | 5 | 5 |
| Total deferred tax assets | 69,919 | 63,756 |
| Less: valuation allowance for deferred tax assets | (69,919) | (63,756) |
| Net deferred tax assets | $ — | $ — |

During 2009, the Company received a cash payment of $88,000 from the U.S. Government relating to a refundable tax credit. This amount was recorded as an income tax benefit in the accompanying statement of operations.

At December 31, 2009 and 2008, the Company had net operating loss carryforwards of approximately $128.4 million and $110.2 million, respectively, and research and development credit carryforwards of approximately $4.1 million and $3.6 million, respectively, for income tax purposes that begin to expire in the

year 2011. The Company's orphan drug credit carryforwards of $12.4 million and $12.4 million as of December 31, 2009 and 2008, respectively, for income tax purposes begin to expire in 2020. For financial reporting purposes, a valuation allowance has been recognized to offset the deferred tax assets related to these carryforwards as the Company has determined that it is more likely than not that the deferred tax assets will not be realized.

Based on the number of shares of common and preferred stock issued, the Company has exceeded the limit allowable under the Tax Reform Act of 1986 related to changes in ownership percentage governing future utilization of net operating loss carryforwards and tax credit carryforwards. Ownership changes subsequent to December 31, 2009 may reduce the availability of net operating losses to offset future taxable income.

Effective January 1, 2007, the Company adopted the FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes, an interpretation of FASB Statement No. 109, Accounting for Income Taxes*, primarily codified into Topic 740 "Income Taxes" in the ASC. ASC 740 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The evaluation of a tax position in accordance with this Interpretation is a two-step process. The first step is recognition: the Company determines whether it is more likely than not that a tax position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. In evaluating whether a tax position has met the more-likely-than-not recognition threshold, the Company must presume that the positions will be examined by the appropriate taxing authority that has full knowledge of all relevant information. The second step is measurement: a tax position that meets the more-likely-than-not recognition threshold is measured to determine the amount of benefit to recognize in the financial statements. The tax position is measured at the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. Differences between tax positions taken in a tax return and amounts recognized in the financial statements will generally result in one of the following: an increase in a liability for income taxes payable or a reduction of an income tax refund receivable, a reduction in a deferred tax asset or an increase in a deferred tax liability, or a combination of each. The Company must recognize tax positions that previously failed to meet the more-likely-than-not recognition threshold in the first subsequent financial reporting period in which that threshold is met. The Company must de-recognize previously recognized tax positions that no longer meet the more-likely-than-not recognition threshold in the first subsequent financial reporting period in which that threshold is no longer met. The Company may not use a valuation allowance as a substitute for derecognition of tax positions.

The Company adopted this standard as of the beginning of the Company's first quarter of 2007; however, the adoption of this interpretation did not have a material effect on the Company's financial condition, results of operations or cash flows. In accordance with ASC 740, the Company will classify any interest and penalty expense in interest expense and general and administrative expense, respectively.

During the year ended December 31, 2009, the Company recorded an increase to its liability for unrecognized tax benefits of approximately $72,000. During the year ended December 31, 2008, the Company recorded a decrease to its liability for unrecognized tax benefits of approximately $414,000. During the year ended December 31, 2007, the Company recorded an increase to its liability for unrecognized tax benefits of approximately $1.7 million. Interest or penalties have not been accrued. If the tax benefit is ultimately recognized, there will be no impact to the Company's effective tax rate as a result of the Company's valuation allowance. The Company does not anticipate any significant increases or decreases to its liability for unrecognized tax benefits within the next 12 months.

A reconciliation of the beginning and ending amount of unrecognized tax benefits, which are not recorded as a liability because they are offset by net operating loss carryforwards, are as follows:

| | |
|---|---|
| Balance, January 1, 2007 | $ 0 |
| Increases for tax positions taken during a prior period | 1,466 |
| Increases for tax positions taken during the current period | 246 |
| Balance, December 31, 2007 | 1,712 |
| Increases for tax positions taken during the current period | 77 |
| Decreases related to settlements | (491) |
| Balance, December 31, 2008 | 1,298 |
| Increases for tax positions taken during the current period | 72 |
| Balance, December 31, 2009 | $1,370 |

The tax years 2004 forward are open for assessment of underpayment of tax. The net operating losses dating back to 1995 are open to adjustment by taxing authorities. During the second quarter of 2008, the IRS notified the Company that it had been selected for a routine audit of the Company's 2005 U.S. Federal income tax return. In connection with the IRS audit, the Company revised the amounts recorded for the orphan drug credit and the net operating loss. The audit was completed during the fourth quarter of 2008 and there were no proposed adjustments that had a material effect upon the Company's financial position or results of operations.

**10. Defined Contribution Benefit Plan**

The Company has adopted a 401(k) plan (the "401(k) Plan") covering all qualified employees. The effective date of the 401(k) Plan is August 1, 1997. Participants may elect a salary reduction from 1% to 100% as a contribution to the 401(k) Plan subject to Internal Revenue Service limitations. The 401(k) Plan permits the Company to match these elective deferrals by a percentage determined on an annual basis. Through October 31, 2007 the Company matched 10% of participant's contributions. Effective November 1, 2007, the Company match was increased to 20% of participant's contributions. The Company made matching contributions in the amount of $119,000, $136,000 and $78,000 in 2009, 2008 and 2007, respectively.

## 11. Quarterly Results of Operations (Unaudited)

The following is a summary of the unaudited quarterly results of operations (in thousands, except share and per share amounts):

| | Year ended December 31, 2009 | | | |
|---|---|---|---|---|
| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter |
| Collaborative research and development revenues | $ 3,012 | $ 3,008 | $ 2,236 | $ 1,377 |
| Loss from operations | (3,573) | (2,337) | (3,471) | (3,339) |
| Net loss attributable to common stockholders | (3,614) | (2,379) | (3,503) | (3,273) |
| Basic and diluted net loss per share attributable to common stockholders | $ (0.08) | $ (0.05) | $ (0.07) | $ (0.07) |
| Weighted average common shares outstanding—basic and diluted | 46,978,568 | 47,002,455 | 47,083,785 | 47,191,687 |

| | Year ended December 31, 2008 | | | |
|---|---|---|---|---|
| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter |
| Collaborative research and development revenues | $ 2,968 | $ 3,184 | $ 3,129 | $ 3,010 |
| Loss from operations | (4,014) | (3,962) | (3,749) | (3,872) |
| Net loss attributable to common stockholders | (3,645) | (3,713) | (3,572) | (3,885) |
| Basic and diluted net loss per share attributable to common stockholders | $ (0.08) | $ (0.08) | $ (0.08) | $ (0.08) |
| Weighted average common shares outstanding—basic and diluted | 44,030,160 | 46,834,932 | 46,885,500 | 46,905,029 |

In accordance with prescribed reporting requirements, the sum of per share losses by quarter may not equal loss per share for the full year due to the changes in average share calculations.

## 12. Subsequent Events

On January 4, 2010, the Company granted 176,220 restricted stock units to non-employee board members at a fair value of $0.47, the market price of the common stock on the date of grant. These restricted stock units were granted in lieu of the Board's full cash compensation.

On February 18, 2010, the Company issued 1,254,750 stock options to Company employees and executives with an exercise price of $0.82 per share, the market price on the date of grant, and 247,000 restricted stock units to Company employees and executives at a fair value of $0.82 per share, the market price of the common stock on the date of grant.

On March 1, 2010, the Company reported negative results of its Phase Ib pain study of ICA-105665. At the dose studied (200 mg bid), ICA-105665 did not reduce the pain elicited in the capsaicin or sunburn models. The compound was well tolerated with no serious adverse events and with similar number of adverse events across treatment groups. Pharmacokinetic parameters were consistent with expectations.

On March 15, 2010, the Company reported positive results in its Phase IIa study of ICA-105665 in patients with photosensitive epilepsy. At the top dose studied (400 mg/day), two of four patients demonstrated a positive response to treatment of ICA-105665, as specified by standard pre-defined criteria. At all dose levels tested, ICA-105665 was well tolerated, with no serious adverse events, no dose limiting toxicities, and no dropouts from the study.

## EXHIBIT INDEX

| Exhibit Number | Description |
|---|---|
| 3.1(1) | Restated Certificate of Incorporation of the Registrant, as amended. |
| 3.1.1(22) | Certificate of Designations of Series A Junior Participating Preferred Stock of the Registrant, dated December 2, 2008. |
| 3.2(27) | Amended and Restated Bylaws of the Registrant, as amended. |
| 4.1(2) | Specimen Stock Certificate. |
| 4.2(2) | Warrant to Purchase Shares of Series B Preferred Stock, dated December 28, 1994, issued to Dominion Fund III. |
| 4.3(2) | Warrant to Purchase Shares of Series D Preferred Stock, dated May 23, 1997, issued to Dominion Fund III. |
| 4.4(2) | Warrant to Purchase Shares of Series E Preferred Stock, dated September 3, 1998, issued to Dominion Fund III. |
| 4.5(2) | First Amendment to Warrants to Purchase Shares of Preferred Stock of Icagen, Inc., dated May 14, 2004, by and between the Registrant, Dominion Fund III and Dominion Ventures. |
| 4.6(2) | Form of Warrant to Purchase Shares of Series D Convertible Preferred Stock, dated March 15, 1997, issued to certain persons in connection with offering of Series D Preferred Stock. |
| 4.7(4) | Securities Purchase Agreement, dated January 26, 2007, among the Registrant and the purchasers listed on Exhibit A thereto. |
| 4.8(5) | Form of Warrant to Purchase Shares of Common Stock, dated February 6, 2007, issued to certain purchasers in connection with a private placement. |
| 4.9(6) | Purchase Agreement, dated August 13, 2007, between the Registrant and Pfizer Inc. |
| 4.10(22) | Rights Agreement, dated December 2, 2008, between the Registrant and American Stock Transfer & Trust Company LLC. |
| 10.1*(2) | 1996 Equity Compensation Plan, as amended. |
| 10.2*(1) | 2004 Stock Incentive Plan, as amended. |
| 10.3* | Form of Incentive Stock Option Agreement under the 2004 Stock Incentive Plan. |
| 10.4* | Form of Nonstatutory Stock Option Agreement under the 2004 Stock Incentive Plan. |
| 10.4.1* | Form of Nonstatutory Stock Option Agreement for Director Options under the 2004 Stock Incentive Plan. |
| 10.4.2*(7) | Nonstatutory Stock Option Agreement, dated January 27, 2006, between the Registrant and Charles A. Sanders. |
| 10.4.3*(8) | Form of Incentive Stock Option Agreement for the Retention Grant Program and Option Exchange Program under the 2004 Stock Incentive Plan. |
| 10.4.4*(8) | Form of Nonstatutory Stock Option Agreement for the Retention Grant Program and Option Exchange Program under the 2004 Stock Incentive Plan. |
| 10.5* | Form of Restricted Stock Unit Agreement under the 2004 Stock Incentive Plan. |
| 10.5.1* | Form of Restricted Stock Unit Agreement for Director Restricted Stock Units under the 2004 Stock Incentive Plan. |
| 10.5.2*(7) | Restricted Stock Unit Agreement, dated February 1, 2006, between the Registrant and Richard D. Katz. |
| 10.5.3*(9) | Form of Restricted Stock Unit Agreement under the 2004 Stock Incentive Plan. |
| 10.6* | Summary of Director Compensation. |
| 10.7* | Summary of 2010 Bonus Targets. |

| Exhibit Number | Description |
|---|---|
| 10.8*(10) | Second Amended and Restated Executive Employment Agreement, dated August 21, 2007, between the Registrant and P. Kay Wagoner. |
| 10.8.1*(23) | Amendment No. 1 to Second Amended and Restated Executive Employment Agreement, dated December 24, 2008, between the Registrant and P. Kay Wagoner. |
| 10.8.2*(24) | Letter Agreement, dated February 11, 2009, between the Registrant and P. Kay Wagoner. |
| 10.9*(10) | Second Amended and Restated Executive Employment Agreement, dated August 21, 2007, between the Registrant and Richard D. Katz. |
| 10.9.1*(11) | Amendment No. 1 to Second Amended and Restated Executive Employment Agreement, dated February 1, 2008, between the Registrant and Richard D. Katz. |
| 10.9.2*(20) | Amendment No. 2 to Second Amended and Restated Executive Employment Agreement, dated March 18, 2008, between the Registrant and Richard D. Katz. |
| 10.9.3*(23) | Amendment No. 3 to Second Amended and Restated Executive Employment Agreement, dated December 24, 2008, between the Registrant and Richard D. Katz. |
| 10.10*(10) | Amended and Restated Executive Employment Agreement, dated August 22, 2007, between the Registrant and Seth V. Hetherington. |
| 10.11*(11) | Amendment No. 1 to Amended and Restated Executive Employment Agreement, dated February 1, 2008, between the Registrant and Seth V. Hetherington. |
| 10.11.1*(23) | Amendment No. 2 to Amended and Restated Executive Employment Agreement, dated December 24, 2008, between the Registrant and Seth V. Hetherington. |
| 10.12(2) | Lease Agreement, dated December 17, 1992, between the Registrant and Royal Center IC, LLC, successor in interest to Petula Associates, LTD., as amended. |
| 10.13(12) | Sixth Amendment to Lease, dated August 3, 2005, by and between the Registrant and Royal Center IC, LLC. |
| 10.14(2) | Lease Agreement, dated October 1997, between the Registrant and Royal Center IC, LLC, successor in interest to Petula Associates, LTD., as amended. |
| 10.15(13) | Fifth Amendment to Lease, dated June 4, 2007, by and between the Registrant and Royal Center IC, LLC. |
| 10.16(6) | Lease dated August 8, 2007, between the Registrant and 3908 Patriot Drive LLC. |
| 10.17(2) | Master Loan and Security Agreement, dated July 14, 1999, between the Registrant and Oxford Venture Finance, as amended. |
| 10.17.1(14) | Letter Agreement, dated April 15, 2005, from Oxford Finance Corporation to the Registrant. |
| 10.17.2(15) | Letter Agreement, dated February 14, 2006, from Oxford Finance Corporation to the Registrant. |
| 10.17.3(16) | Letter Agreement, dated August 27, 2007, from Oxford Finance Corporation to the Registrant. |
| 10.17.4(19) | Letter Agreement, dated February 14, 2008, from Oxford Finance Corporation to the Registrant. |
| 10.18(17) | Master Security Agreement, dated November 28, 2007, between the Registrant and General Electric Capital Corporation. |
| 10.19†(3) | Exclusive License Agreement, dated February 29, 2000, between the Registrant and Children's Medical Center Corporation, as amended. |
| 10.20†(21) | Master Services Agreement, dated June 25, 2008, between the Registrant and Quintiles, Inc. |
| 10.21†(18) | Collaborative Research and License Agreement, dated August 13, 2007, between the Registrant and Pfizer Inc. |
| 10.22(25) | Letter Agreement effective August 12, 2009, from Pfizer Inc. to the Company. |

| Exhibit Number | Description |
|---|---|
| 10.23†(26) | Agreement and Amendment to the Exclusive License Agreement, dated September 17, 2009, between the Registrant and Pfizer Inc. |
| 23.1 | Consent of Independent Registered Public Accounting Firm. |
| 31.1 | Certification of Chief Executive Officer and President pursuant to Exchange Act Rule 13a-14(a). |
| 31.2 | Certification of the Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a). |
| 32.1 | Certification of Chief Executive Officer and President pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 32.2 | Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |

(1) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on July 2, 2007.

(2) Incorporated by reference to the exhibits to the Registrant's Registration Statement on Form S-1 (File No. 333-114336).

(3) Incorporated by reference to the exhibits to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2007.

(4) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on January 31, 2007.

(5) Incorporated by reference to the exhibits to the Registrant's Annual Report on Form 10-K filed with the SEC on March 6, 2007.

(6) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on August 14, 2007.

(7) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on February 1, 2006.

(8) Incorporated by reference to the exhibits to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 14, 2006.

(9) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on February 19, 2010.

(10) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on August 22, 2007.

(11) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on February 4, 2008.

(12) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on August 9, 2005.

(13) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on June 22, 2007.

(14) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on April 19, 2005.

(15) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on February 21, 2006.

(16) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on September 17, 2007.

(17) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on November 30, 2007.

(18) Incorporated by reference to the exhibits to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 5, 2007.

(19) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on February 15, 2008.

(20) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on March 19, 2008.

(21) Incorporated by reference to the exhibits to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 6, 2008.

(22) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on December 5, 2008.

(23) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on December 24, 2008.

(24) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on February 12, 2009.

(25) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on August 13, 2009.

(26) Incorporated by reference to the exhibits to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2009.

(27) Incorporated by reference to the exhibits to the Registrant's Current Report on Form 8-K filed with the SEC on December 11, 2009.

† Confidential treatment granted by the SEC as to certain portions.

* Management contract or compensatory plan or arrangement filed herewith in response to Item 15(a) of Form 10-K.

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