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**ICAGEN**

ION CHANNEL ADVANCES

**2008  
ANNUAL  
REPORT**

Received SEC

APR 28 2009

Washington, DC 20549



Dear Fellow Shareholder:

In 2008, based on our ion channel discovery platform, Icagen advanced the development of clinical and research programs in epilepsy, inflammation and pain. As Phase I clinical studies of ICA-105665 for epilepsy and pain and of senicapoc for asthma were completed and Phase II studies planned or initiated, additional new compounds for pain were also discovered by our talented research team. These new drug candidates are aimed at markets with significant commercial potential and thus provide the basis for meaningful growth of our Company and added value for our shareholders. Furthermore, we believe that these programs have generated exciting opportunities for strategic partnering with other pharmaceutical companies.

#### Epilepsy and Pain Programs

Over three million Americans of all ages are affected by epilepsy, and approximately 30% of these people continue to experience seizures despite treatment with available drugs. Many more of these patients experience unacceptable side effects due to these same treatments. In addition, millions of people suffer from one or more pain disorders, such as inflammatory and neuropathic pain without adequate therapy.

In nonclinical studies, Icagen's novel compound ICA-105665, which selectively targets KCNQ potassium channels in the nervous system, has demonstrated efficacy in models of a wide range of epilepsy syndromes, including studies conducted at the NIH that may indicate the potential for effectiveness in patients who suffer from treatment-resistant seizures. In addition to epilepsy, our nonclinical studies demonstrate potential for the effectiveness of ICA-105665 in a variety of pain disorders. Therefore, we are enthusiastic about both the therapeutic and market potential for this compound.

We have successfully completed a series of Phase I clinical trials in which ICA-105665 was well tolerated in human volunteers and in patients with epilepsy. Subject to the successful completion of ongoing preclinical studies and approval by the FDA, we plan to begin a Phase II proof-of-concept study in patients with epilepsy in 2009. We additionally plan to initiate studies to investigate the potential of ICA-105665 as a treatment for pain. We believe that ICA-105665 could offer a treatment option for patients who are either resistant to or experience unacceptable side effects from currently available drugs used to treat epilepsy or pain.

In addition to our KCNQ program, in which our compounds are being pursued for pain indications, we have other exciting pain programs that target sodium, calcium and TRP channels. Given that there are many types of pain conditions and many different ways in which pain is experienced by individuals, we believe that multiple specifically-targeted approaches will be necessary to fulfill the needs of patients who suffer from a variety of pain syndromes. In one of our pain programs, we are working collaboratively with one of the world's premier drug companies, Pfizer. In this multi-target ion channel program, we have identified leads and advanced leads targeting sodium channels in the pain pathway and have demonstrated efficacy in animals with certain of our compounds. This partnership with Pfizer attests to the strength of Icagen's ion channel technology and to the excellence of our pain research pipeline.

#### Inflammation Programs Including Asthma

There is a broad array of inflammatory conditions for which novel treatments are needed. One of these is asthma, which is a chronic inflammatory disease of the airways characterized by reactions of the airways to various stimuli, which makes breathing difficult. Asthma remains a serious condition inadequately treated by current therapies. Approximately 14 million adults and three million children in the United States have been diagnosed with asthma, with expectations for growth in these numbers.

As a novel anti-inflammatory approach to asthma, we have targeted a potassium channel called KCa3.1 with our selective blocker senicapoc. Nonclinical data using senicapoc support its potential anti-inflammatory effects, specifically its ability to reduce antigen-induced increases in airway resistance and airway hyper-reactivity, hallmarks of asthma. Following the successful completion of multiple Phase I clinical studies, senicapoc was advanced to Phase II in which two proof-of-concept trials for asthma are targeted for completion in 2009. If efficacious in these and future clinical trials, this compound may provide a first-in-class, once-a-day, oral anti-inflammatory treatment designed to decrease the incidence and severity of asthma attacks.

We are also targeting other ion channels as novel anti-inflammatory treatments. For example, a new target in our research pipeline is a calcium-release-activated calcium channel that allows calcium to flow into immune system cells, thus influencing inflammatory cell activation, regulation and cytokine release. Targeting this channel may provide opportunities to treat both immune and inflammatory diseases, such as asthma and rheumatoid arthritis.

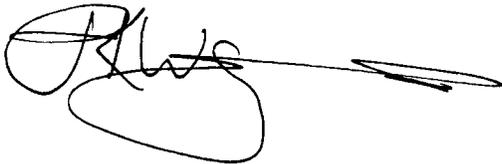
### Looking Ahead

Looking ahead, we are excited by the opportunities and aware of the challenges. To exploit the opportunities and face the challenges, we have assembled what we believe to be the premier ion channel drug discovery organization in the industry. There are very few companies, whether large or small, which have our capabilities, technologies and experience in ion channel drug discovery. For over sixteen years, other companies in our industry have recognized our strength in this area and have sought out Icagen for assistance with their ion channel drug discovery efforts. Today, given the level of interest expressed by other companies in our programs, we anticipate that we will continue to achieve success, at least in part, by striking strategic partnerships to support and advance the science and business of finding new treatments for areas of substantial need.

In addition to creating opportunities for partnerships, we are facing the economic realities of supporting a drug discovery and development business in a struggling economy. Throughout our history, we have managed our bottom line closely while others, many of which have come and gone, have spent capital more aggressively. Now, more than ever, we are actively engaged in measures to preserve our capital.

We have designed targeted clinical trials that are intended to provide us with valuable efficacy and safety data, while at the same time minimizing costs. Likewise, we have continued to create efficiencies in all areas of our operations to better position the company to effectively advance its strategic plan. Yet, in times of turmoil, even small setbacks impact our investors negatively and our stock price adversely. What cannot be lost in the turmoil is our outstanding and focused ion channel science, which has the very real promise of leading to better therapies for a variety of diseases.

In conclusion, with our clinical and research programs progressing well and strategic partnership discussions a priority, we believe that we have opportunities to build value for the Company and its shareholders. The Board of Directors and I firmly believe that we have the right team and the right strategy to meet the current challenges. We look forward to the coming year with enthusiasm. We will leave no stone unturned to chart the best course for Icagen and its shareholders.



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, 2008

**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: ~~000-50676~~ 1-3-1217

**Icagen, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**56-1785001**  
(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**  
(Title of class)

**The Nasdaq Global Market**  
(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 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, 2008, was approximately \$44,044,124 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, 2009 was 46,995,276.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's Definitive Proxy Statement for its 2009 Annual Meeting of Stockholders scheduled to be held on June 2, 2009, or the 2009 Proxy Statement, which will be filed with the Securities and Exchange Commission, or SEC, not later than 120 days after December 31, 2008, are incorporated by reference into Part III of this Annual Report on Form 10-K. With the exception of the portions of the 2009 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 and our logo are our trademarks. Each of the other trademarks, trade names or service marks appearing in this report belongs to its respective holder.

**ICAGEN, INC.**  
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**FOR THE FISCAL YEAR ENDED DECEMBER 31, 2008**

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## **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 two most advanced programs are:

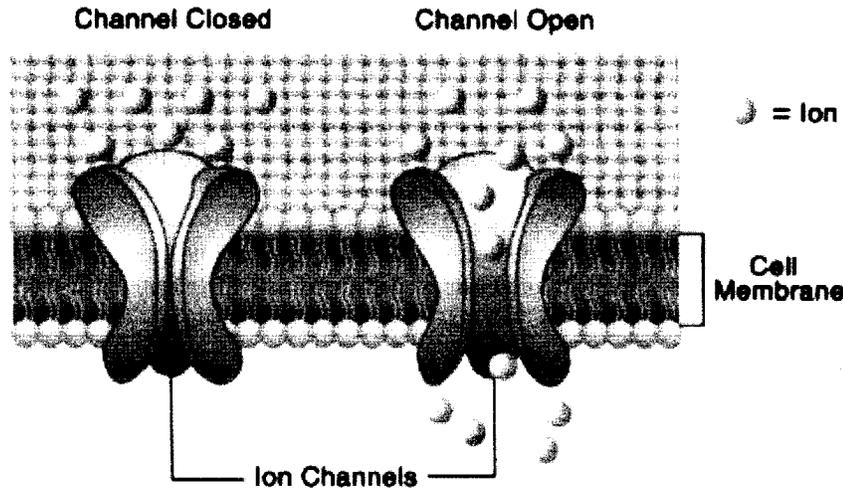
- ICA-105665 for epilepsy and neuropathic pain, for which we are conducting a Phase I multiple ascending dose study in healthy volunteers and epilepsy patients; and
- Senicapoc, previously referred to as ICA-17043, for asthma, for which we are conducting two Phase II proof-of-concept clinical trials.

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 two clinical stage programs with what we believe are novel chemical entities;
- 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 neuropathic pain, and senicapoc, which we are developing for asthma. 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. 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 neuropathic 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 Programs

The following table summarizes key information about our product candidates that are in clinical trials. The compounds in these programs are the result of our internal research efforts. In these programs, we are developing small molecule drugs that target specific ion channels.

<u>Product Candidate/Indication</u>	<u>Development Phase</u>	<u>Commercialization Rights</u>	<u>Status</u>
ICA-105665 for epilepsy and neuropathic pain	Phase I	Icagen	Phase I multiple ascending dose study in progress
Senicapoc for asthma	Phase II	Icagen	Phase II proof-of-concept studies in progress

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

Our most advanced compound for the treatment of epilepsy and neuropathic pain is ICA-105665, for which we are currently conducting a Phase I multiple ascending dose study. 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 lead 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 neuropathic 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 totaled approximately \$8.9 billion in the United States during 2006, according to IMS Health. These sales included prescriptions of these drugs 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 Neuropathic Pain***

***Disease overview.*** 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 neuropathic 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 neuropathic pain.

**Market opportunity and current treatment.** According to Datamonitor, over 1.5 million patients in the United States, Japan, the United Kingdom, France, Germany, Italy and Spain are estimated to suffer from neuropathic pain, and the neuropathic pain market is estimated to be worth \$2.6 billion across these markets in 2007. A variety of drugs are used for the treatment of neuropathic pain, including some anticonvulsants, tricyclic antidepressants and antiarrhythmics.

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 neuropathic pain, including the Chung model, which is one of the most predictive models of neuropathic pain.

During the third quarter of 2007, the Company 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 of healthy volunteers were studied at doses ranging from 30mg to 400mg administered orally. ICA-105665 was well tolerated at all dose levels. There were no serious adverse events, no dose limiting toxicities, and no dropouts from this study. Pharmacokinetics were linear, dose proportional, and consistent with the potential for twice daily dosing.

During the second quarter of 2008 the Company initiated a multiple ascending dose Phase I clinical trial of ICA-105665 to further assess the safety, tolerability and pharmacokinetics of this novel compound. Three cohorts of healthy volunteers were studied at doses of 50mg, 100mg and 200mg administered orally twice daily for a period of seven days. ICA-105665 was well tolerated at all dose levels. There were no serious adverse events, no

dose limiting toxicities, and no dropouts from this portion of the study. Pharmacokinetics were linear, dose proportional, and consistent with the potential for twice daily dosing. In order to assess the safety, tolerability and pharmacokinetics of ICA-105665 in the target population, the study was subsequently expanded to include patients with epilepsy. Based upon study results to date, there were no serious adverse events, no dose limiting toxicities and no dropouts from this portion of the study. Full results from this study are expected to be available in the second quarter of 2009.

In March 2009, the Company discussed its plans for the further development of ICA-105665 with the FDA. The FDA agreed with the Company's plans to proceed with a proof-of-concept study in pain. The Company is planning to conduct its epilepsy proof-of-concept study in patients with photosensitive seizures. The FDA requested that the Company submit the protocol for this study to the FDA for approval prior to initiating the study.

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 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 are developing for the treatment of asthma, for which we are currently conducting two Phase II proof-of-concept studies. Senicapoc targets a particular potassium channel that is expressed on a number of cells believed to be important in the pathogenesis of asthma, including various cells of the immune and inflammatory system and airway epithelial cells. Senicapoc is taken orally and is being developed for once-a-day dosing. We retain all worldwide rights to senicapoc.

***Disease overview.*** Asthma is a lung disease characterized by airway obstruction, airway inflammation, and increased airway responsiveness to a variety of stimuli. Typical symptoms include shortness of breath, cough and wheezing in response to particular stimuli. The disease varies in severity from a mild intermittent form to a severe persistent form. While asthma cannot be cured, most people with asthma are able to be treated so that they are able to live active lives.

While spasmodic constriction of the airways, or bronchospasm, is an important aspect of the disease, there is believed to be an underlying inflammatory process that triggers bronchospasm when a patient is exposed to certain stimuli. The inflammation results in narrowed, swollen airways, increased mucus and frequently is accompanied by constriction of the smooth muscle in the airways, or bronchoconstriction, causing difficulty breathing and the familiar wheeze often associated with the disease. Relevant inflammatory cells are believed to include the bronchial mucosal mast cell, lymphocytes and eosinophils.

The ion channel target for senicapoc is a potassium channel that is expressed in mast cells, lymphocytes, eosinophils, airway epithelial cells and other cell types. This potassium channel facilitates the influx of calcium into certain cells in the immune and inflammatory systems, thus contributing to the activation of these cells during immune and inflammatory responses to certain stimuli. Blocking this channel in these cells decreases the calcium-dependent activation. Moreover, this potassium channel has also been shown to be expressed at increased levels in activated T-lymphocytes and, when inhibited by selective blockers, to decrease T-cell proliferation in a dose-dependent manner.

***Market opportunity and current treatment.*** According to the National Heart Lung and Blood Institute, about 20 million people have been diagnosed with asthma in the United States, nearly 9 million of whom are children. A variety of drugs are used for the treatment of asthma, including inhaled beta agonists, inhaled and oral corticosteroids, cromolyn and leukotriene inhibitors. Sales of drugs used for the treatment of asthma exceeded \$8.0 billion in 2007, according to data from Datamonitor.

Drugs currently approved for the treatment of asthma include both inhaled and orally available therapies. Inhaled agents include beta agonists, inhaled corticosteroids, and cromolyn, while orally available agents include systemic corticosteroids and leukotriene inhibitors such as Singulair. These drugs are believed to work through a

variety of mechanisms, including relaxation of the bronchial smooth muscle and inhibition of the inflammatory process. Many patients require combination therapy to adequately control their asthma symptoms. These drugs are therefore typically utilized in a stepwise manner, with inhaled agents used for patients with more mild asthma on a “rescue” basis and oral agents typically added to inhalation therapy for those with more severe and persistent forms of asthma. Each of these drugs is associated with certain side effects, the most problematic of which are caused by the corticosteroids when administered orally on a chronic basis. In addition, many patients do not respond adequately to orally available leukotriene inhibitors, leaving a large group of patients without a satisfactory long-term orally available therapy.

**Senicapoc.** Senicapoc is a novel small molecule ion channel inhibitor that targets a particular potassium channel that is expressed on a number of cells believed to be important in the pathogenesis of asthma, including mast cells, macrophages, eosinophils and airway epithelia. 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 the Company initiated a Phase II proof-of-concept clinical trial to evaluate the safety and efficacy of senicapoc in patients with allergic asthma. This Phase II trial is a double-blind, placebo-controlled, parallel group study that is 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 are being randomized (1:1) to receive senicapoc or placebo once a day for two weeks. Patients receiving senicapoc are receiving 40mg once daily following an initial loading dose. The primary efficacy analysis is 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, the Company initiated a second Phase II proof-of-concept study in patients with exercise-induced asthma. This double-blind, placebo-controlled, parallel group study is 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 will be randomized (1:1) to receive senicapoc or placebo once a day for four weeks. Patients receiving senicapoc will receive 40mg once daily following an initial loading dose. The primary efficacy analysis is the comparison between treatment arms in the percent change in FEV1 following exercise.

A sheep model demonstrating naturally occurring bronchoconstriction and airway hyperreactivity in response to exposure to a certain antigen was used in preclinical efficacy studies. Following exposure to the natural antigen, this model demonstrates an early and a late antigen response characterized by increases in airway resistance and airway hyperreactivity. In controlled studies conducted in this model, senicapoc was demonstrated to reduce the antigen induced changes in both late phase airway resistance and airway hyperreactivity following intravenous, inhalation and oral administration. These results were statistically significant. Furthermore, in the intravenous study, in which two different doses were tested, the results were dose dependent and at the high dose, there was additionally a statistically significant reduction in the early phase airway resistance.

Previously we had been developing 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.

During the development program for sickle cell disease, 445 clinical trial participants received one or more doses of senicapoc. Of these, 159 were healthy volunteers and 286 were patients with sickle cell disease. In these studies, we obtained safety information that we believe will be important in our development program for asthma. During the development program for sickle cell disease, senicapoc was generally found to be safe and well-tolerated. In a published Phase II study of senicapoc in patients with sickle cell disease, diarrhea and nausea occurred more frequently in patients who received either of two doses of senicapoc than in those who received a placebo. The most common serious adverse events were related to sickle cell disease and none were considered to be related to senicapoc. Patients who took senicapoc had small increases in serum gamma-glutamyl transpeptidase, or GGT, a protein found in the liver and biliary tract, but the clinical significance of this change is not known.

However, adverse events, if any, with long-term chronic use of the doses we may use in the asthma studies may be different from those observed in prior long-term studies. Furthermore, 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 studies does not mean that subsequent clinical trials will confirm earlier findings.

## **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 900 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. 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 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. 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 will be two years from the effective date of the agreement unless earlier terminated or extended, 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.

### ***Astellas***

We had previously collaborated with Astellas to discover small molecule ion channel inhibitors that target a particular potassium channel located on the membrane of neurons in the hippocampus, a region of the brain that has been demonstrated to be important in the formation of memories and other central nervous system, or CNS, functions, as well as in certain other areas of the central nervous system. The research term of this collaboration agreement expired in December 2003. Astellas was evaluating certain of these compounds for the chronic treatment of memory loss associated with aging, such as occurs in dementia, including Alzheimer's disease. We had previously considered developing certain of these compounds for certain other CNS indications, such as attention deficit/ hyperactivity disorder, or ADHD, and sleep disorders, but are no longer pursuing these indications.

During 2004, Astellas selected one of these compounds for advanced preclinical studies. During 2005, Astellas decided not to pursue further development of that particular compound but instead decided to develop other lead compounds. During the fourth quarter of 2007, Astellas notified us that it had decided not to continue the development of another of these lead compounds due to genotoxicity issues. During the third quarter of 2008, Astellas notified us that following further evaluation of certain compounds discovered in collaboration with us for the chronic treatment of memory loss associated with aging, such as occurs in dementia, including Alzheimer's disease, it has decided not to pursue their further development. As a result of this decision, our collaboration with Astellas has now concluded.

### ***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.

### ***Bristol-Myers Squibb***

In October 1997, we entered into a collaboration with Bristol-Myers Squibb to discover, develop and commercialize novel small molecule drugs that act on a specified ion channel target and that are identified as potential treatments for atrial fibrillation. This collaboration concluded in 2007 following the decision by Bristol-Myers Squibb to terminate preclinical development of a lead compound that had been discovered in collaboration with us.

## **Research and Development**

For the years ended December 31, 2008, 2007 and 2006, we spent approximately \$22.1 million, \$27.9 million and \$28.8 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: 2008 – \$12.3 million; 2007 – \$21.1 million; and 2006 – \$8.4 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, 2009, we owned approximately 60 United States patents and approximately 60 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 neuropathic pain, and senicapoc. We consider two patents directed at senicapoc and the patent covering the chemotype which includes ICA-105665 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 neuropathic 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, and one United States patent application relating to composition of matter, 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 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 collaborator do not preclude it from pursuing development efforts using a different approach from that which is the subject of our agreement with it. 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 candidates that are undergoing clinical trials, which are described under “Clinical Programs” 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;
- Cymbalta and Lyrica are approved for the treatment of specified types of neuropathic pain; and
- drugs such as Albuterol, Advair and Singulair are approved for the treatment of asthma.

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 all 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 neuropathic pain or senicapoc. 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 contract with one third-party manufacturer to supply us with the senicapoc bulk drug substance and a second manufacturer to perform fill/finish services. We obtain our supplies of the product candidates 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 neuropathic pain and senicapoc are both 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 are currently conducting a Phase I clinical study for ICA-105665.
- *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, 2009, we had a total of 73 employees, 70 of whom were full-time, including 30 with doctoral degrees. Of our workforce, 61 employees are engaged in research and development and 12 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](http://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](http://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 March 12, 2009 are as follows:

<u>Name</u>	<u>Age</u>	<u>Position</u>
P. Kay Wagoner, Ph.D. . . . . .	60	President, Chief Executive Officer and Director
Richard D. Katz, M.D. . . . . .	45	Executive Vice President, Finance and Corporate Development, Chief Financial Officer and Treasurer
Seth V. Hetherington, M.D. . . . . .	56	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**

***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, 2008, we had an accumulated deficit of \$126.4 million. We have incurred losses in each year since our inception in 1992. Our net losses were \$14.8 million in 2008, \$10.9 million in 2007 and \$24.8 million in 2006. These losses resulted principally from costs incurred in our research and development programs and from our general and administrative expenses. We expect to continue to incur significant and increasing 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.

***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.***

We expect our research and development expenses to increase in connection with our ongoing activities, particularly as the scope of the clinical trials that we are conducting expands. 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. We will need substantial additional funding and may be unable to raise capital when needed or on attractive terms, particularly in the current economic environment. An inability to raise necessary funds would force us to delay, reduce or eliminate our research and development programs or commercialization efforts.

We believe that our existing cash and cash equivalents, including the gross proceeds of approximately \$10.0 million from our exercise of the equity put option with Pfizer in February 2008, will be sufficient to enable us to fund our operating expenses, obligations under our equipment debt financing and capital expenditure requirements through the second quarter of 2010. 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.

Until such time, if ever, as we can generate substantial product revenues, we expect 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 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.

***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 when it expires. 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 October 27, 2006, 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. On January 17, 2007, we were notified by Nasdaq that we had regained compliance with this listing requirement.

The closing bid price of our common stock on the Nasdaq Global Market was \$0.46 on March 12, 2009, and has been below \$1.00 each trading day since November 10, 2008. Nasdaq has temporarily suspended enforcement of the minimum bid price requirement through April 19, 2009 due to current economic conditions. However, it is possible that after Nasdaq resumes enforcement of the requirement on April 20, 2009, the minimum bid price of our common stock could remain below the required level for 30 consecutive business days such that we are no longer in compliance. 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 candidates, ICA-105665 and our other lead compounds for epilepsy and neuropathic pain and senicapoc for asthma, 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 neuropathic pain and senicapoc for asthma. 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 neuropathic pain and senicapoc are at an early stage. We submitted an IND and began Phase I clinical trials with respect to ICA-105665 during the third quarter of 2007. 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. Previously we had conducted a pivotal Phase III clinical trial of senicapoc for the chronic treatment of sickle cell disease. Following a planned meeting in April 2007, the Data Monitoring Committee, or DMC, recommended that the clinical trial be terminated because of the low probability of achieving a reduction in crisis rate, the primary endpoint. In accordance with the recommendation of the DMC, we terminated the study following notification provided to the FDA. At this time, we do not expect to resume clinical development of senicapoc as a potential treatment for sickle cell disease.

If we are not successful in commercializing either or both of ICA-105665 or one of our other lead compounds for epilepsy and neuropathic pain or senicapoc for asthma, or are significantly delayed in doing so, our business will be materially harmed.

***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 was not successful. As another example, we were notified in the third quarter of 2007 by our collaborator Bristol-Myers Squibb that it had decided, based on formulation issues, among others, not to pursue further development of a lead compound discovered in collaboration with us for the treatment of atrial fibrillation. As a third example, we were notified in the

fourth quarter of 2007 by our collaborator, Astellas, that it had decided, based on genotoxicity issues, not to pursue further development of a lead compound discovered in collaboration with us for the treatment of dementia, including Alzheimer's disease;

- enrollment in our clinical trials may be slower than we currently anticipate, resulting in significant delays. For example, enrollment of patients in our Phase II clinical trial of senicapoc for sickle cell disease took longer than we initially expected. 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. For example, in March 2005, results of our multiple dose safety, tolerability and pharmacokinetic study of ICA-69673 did not support the continued development of ICA-69673 for the chronic oral treatment of epilepsy and neuropathic pain. As a result, at this time, we have decided not to pursue the further clinical development of this compound;
- regulators or institutional review boards may require that we hold, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements;
- 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 the development program for sickle cell disease, 445 clinical trial participants received one or more doses of senicapoc. Of these, 159 were healthy volunteers and 286 were patients with sickle cell disease. In these studies, we obtained safety information that we believe will be important in our development program for asthma. During the development program for sickle cell disease, senicapoc was generally found to be safe and well-tolerated. In a published Phase II study of senicapoc in patients with sickle cell disease, diarrhea and nausea occurred more frequently in patients who received either of two doses of senicapoc than in those who received a placebo. The most common serious adverse events were related to sickle cell disease and none were considered to be related to senicapoc. Patients who took senicapoc had small increases in serum gamma glutamyl transpeptidase, or GGT, a protein found in the liver and biliary tract, but the clinical significance of this change is not known.

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. Analyses of data from these Phase II trials or data from future trials may reveal information that leads us to discontinue development of senicapoc in asthma or other indications.

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 2008, 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. The substantial majority of our research funding under our collaboration with Pfizer is scheduled to end in the third quarter of 2009. 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, in May 2004 our collaborator Yamanouchi signed a definitive merger agreement with Fujisawa Pharmaceutical Co., Ltd., which took effect on April 1, 2005, and Yamanouchi and Fujisawa were renamed Astellas Pharma Inc. As additional examples, during 2006

Johnson & Johnson acquired the Consumer Healthcare Business of Pfizer Pharmaceuticals, and integrated this unit with McNeil, and in January 2009, Pfizer announced its planned acquisition of 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. As another example, our collaboration with Bristol-Myers Squibb concluded upon notification by Bristol-Myers Squibb in the third quarter of 2007 that it was no longer pursuing a lead compound discovered in collaboration with us for the treatment of atrial fibrillation.

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 neuropathic pain, or senicapoc, which we are developing for the treatment of asthma, 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.

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 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.

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.

In addition, our growth will require us to hire a significant number of qualified scientific and commercial personnel, including clinical development, regulatory, marketing and sales executives and field personnel, as well as additional administrative personnel. There is intense competition from other companies and research and academic institutions for qualified personnel in the areas of our activities. If we cannot continue to attract and retain, 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 have been registered under the Securities Act of 1933, as amended, or the Securities Act, and 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.

In accordance with the securities purchase agreement for the private placement, we filed a registration statement with the SEC covering the resale of the 15,423,640 shares of common stock issued in the private placement and the 5,398,256 shares of common stock issuable upon exercise of the warrants. This registration statement became effective on May 1, 2007. These shares are now 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.

***If we do not maintain effectiveness of the registration statement covering the resale of the shares issued in the private placement, we will be required to pay certain liquidated damages, which could be material in amount.***

The terms of the securities purchase agreement that we entered into in connection with the private placement require us to pay liquidated damages to the purchasers in the private placement in the event that 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 this event 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 each purchaser an amount in cash equal to 1% of that purchaser's aggregate purchase price, up to a maximum of 10% of the aggregate purchase price paid by that purchaser. These amounts could be material, and any liquidated damages we are required to pay could have a material adverse effect on our financial condition.

***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, 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 February 28, 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, 2009, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock beneficially owned, in the aggregate, shares representing approximately 64% 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 collaboration agreement with 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. 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 the earlier of (1) December 2, 2018 or (2) December 2, 2009, if our stockholders do not approve the rights plan by that date.

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, 2009, we had 46,995,276 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 11,200,000 shares of our common stock, which include the 8,516,125 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—SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

None.

## PART II

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

#### Market Information and Holders

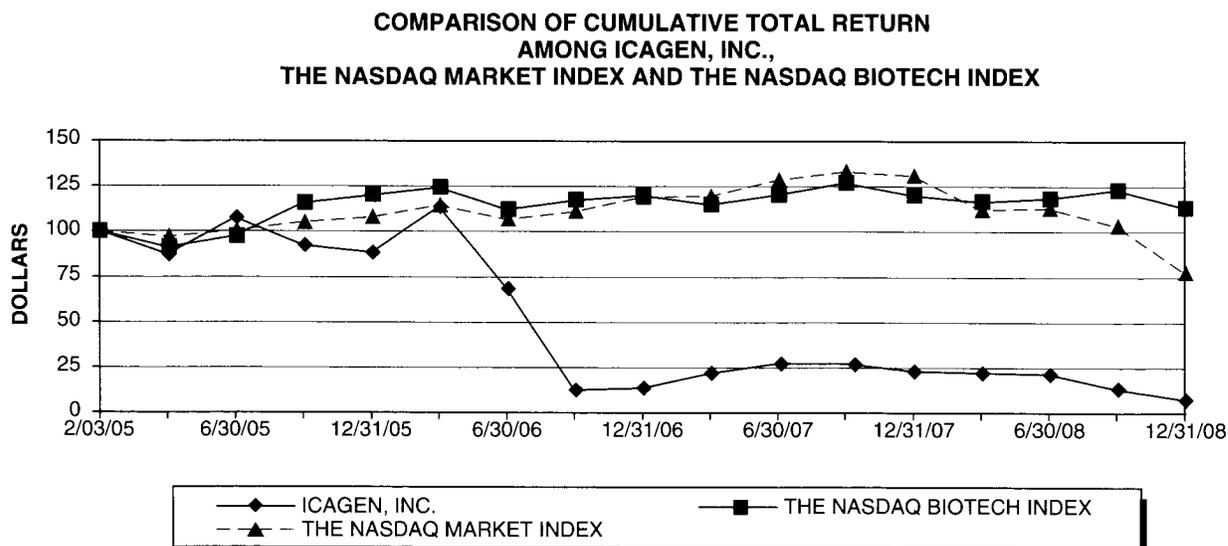
Our common stock has traded on the Nasdaq Global Market (formerly the Nasdaq National Market) under the symbol “ICGN” since our initial public offering, or IPO, on February 3, 2005. The following table sets forth, for the calendar periods indicated, the range of high and low sales prices for our common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

<u>2007</u>	<u>High</u>	<u>Low</u>
First Quarter .....	\$3.09	\$1.04
Second Quarter .....	\$2.19	\$1.20
Third Quarter .....	\$2.80	\$1.59
Fourth Quarter .....	\$2.20	\$1.42
<u>2008</u>	<u>High</u>	<u>Low</u>
First Quarter .....	\$2.00	\$1.36
Second Quarter .....	\$1.74	\$1.40
Third Quarter .....	\$2.20	\$0.95
Fourth Quarter .....	\$1.28	\$0.35

On February 28, 2009, there were 108 stockholders of record of our common stock. On February 27, 2009, the last sale price reported on the Nasdaq Global Market for our common stock was \$0.46 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, 2008 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	119.14
The Nasdaq Biotechnology Index .....	100	91.20	97.27	115.68	120.14	124.22	112.03	117.41	119.84
	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 .....	119.54	128.54	133.31	130.99	112.23	112.98	103.35	77.69	
The Nasdaq Biotechnology Index .....	115.02	120.20	126.95	119.94	116.62	118.28	122.98	113.25	

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 2008.

### Issuer Purchases of Equity Securities

We did not make any purchases of our shares of common stock in the fourth quarter of fiscal 2008, 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, 2008 and 2007 and for the years ended December 31, 2008, 2007 and 2006 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,				
	2008	2007	2006	2005	2004
	(in thousands, except share and per share data)				
<b>Selected statement of operations data:</b>					
Collaborative research and development revenues:					
Research and development fees . . . . .	\$ 11,711	\$ 17,383(1)	\$ 1,953	\$ 4,454	\$ 4,643
Reimbursed research and development costs . . . . .	580	3,734	6,467	4,340	1,851
Total collaborative research and development revenues . . . . .	12,291	21,117	8,420	8,794	6,494
Operating expenses:					
Research and development . . . . .	22,140	27,854	28,820	25,906	20,390
General and administrative . . . . .	5,748	5,940	5,907	4,589	3,041
Total operating expenses . . . . .	27,888	33,794	34,727	30,495	23,431
Loss from operations . . . . .	(15,597)	(12,677)	(26,307)	(21,701)	(16,937)
Other income, net . . . . .	782	1,792	1,499	1,452	214
Net loss . . . . .	\$ (14,815)	\$ (10,885)	\$ (24,808)	\$ (20,249)	\$ (16,723)
Basic and diluted net loss per share attributable to common stockholders . . . . .	\$ (0.32)	\$ (0.29)	\$ (1.12)	\$ (1.03)	\$ (10.61)
Weighted average common shares outstanding—basic and diluted . . . . .	46,167,902	37,432,144	22,219,662	19,636,848	1,575,923

	December 31,				
	2008	2007	2006	2005	2004
	(in thousands)				
<b>Selected balance sheet data:</b>					
Cash and cash equivalents . . . . .	\$ 34,215	\$ 43,513	\$ 25,131	\$ 47,763	\$ 30,217
Working capital . . . . .	26,429	32,896	19,571	42,394	26,756
Total assets . . . . .	37,880	46,657	30,815	54,393	38,137
Equipment debt financing, less current portion . . . . .	971	757	774	1,194	732
Accumulated deficit . . . . .	(126,440)	(111,625)	(100,740)	(75,932)	(55,683)
Total stockholders' equity . . . . .	28,112	30,684	12,047	33,992	17,227

(1) Amount includes \$11.5 million of incremental revenue recognized as a result of the termination of the collaboration agreement with McNeil. 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.

## 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.*

### 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, asthma, 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 two clinical development programs, 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, 2008, we had an accumulated deficit of \$126.4 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. 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.

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. In particular, as we advance ICA-105665 and the other lead compounds that we are developing for the treatment of epilepsy and neuropathic pain and as we pursue the development of senicapoc, formerly ICA-17043, for the treatment of asthma, we expect that our research and development expenses will increase significantly. 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. We estimate that we will incur at least approximately \$4.0 million over the course of the next year for the currently ongoing Phase I multiple ascending dose study and the planned proof-of-concept trials for ICA-105665. The actual amount of expenses is subject to a number of variables, including successful completion of the ongoing Phase I trial and the planned proof-of-concept trial in pain, as well as the approval by the FDA of a proposed proof-of-concept study in epilepsy. Additionally, we expect to incur at least approximately \$3.0 million over the course of the next year to complete the two ongoing proof-of-concept trials of senicapoc for the treatment of asthma. The conduct of these programs beyond these proof-of-concept studies will be dependent upon the availability of additional capital or the formation of one or more new collaborations.

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 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 are recognizing this payment from Pfizer as revenue in accordance with Staff Accounting Bulletin No. 104, *Revenue Recognition*, or SAB 104, EITF 00-21 and other relevant accounting literature. Specifically, we recorded the \$12.0 million upfront payment as deferred revenue, which we are amortizing 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, 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 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***

Effective January 1, 2006, we account for stock-based compensation in accordance with the fair value recognition provisions of 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, 2008, we had net operating loss carryforwards of approximately \$110.2 million and research and development credit carryforwards of approximately \$3.6 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, 2008 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: 2008—\$12.3 million; 2007—\$21.1 million; and 2006—\$8.4 million. During the year ended December 31, 2008, revenues from our collaboration with Pfizer accounted for all of our revenues, and currently we are only receiving research funding under our collaboration with Pfizer. Research funding under our collaboration with McNeil ended on September 18, 2007 and research funding under our collaboration agreements with Abbott ended on December 31, 2005.

In connection with our collaboration with Pfizer, Pfizer paid us an initial upfront payment of \$12.0 million. We are recognizing this payment from Pfizer as revenue over the two-year initial term of the collaboration in accordance with SAB 104, 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, 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. We expect that research and development expenditures will increase substantially after 2009 due to the following:

- clinical studies of ICA-105665 for the treatment of epilepsy and neuropathic pain;

- clinical studies of senicapoc for asthma; and
- the continued development of our research programs.

The conduct of our clinical stage programs 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 for asthma, and formerly senicapoc for sickle cell disease, and ICA-105665 and our other lead compounds for epilepsy and neuropathic 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:

<u>Development Program</u>	<u>Year ended December 31,</u>		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
		(in thousands)	
Senicapoc .....	\$1,728	\$ 7,551	\$12,971
ICA-105665 and other lead compounds for epilepsy and neuropathic pain .....	4,720	3,686	1,655
Total .....	\$6,448	\$11,237	\$14,626

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. These 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 2009 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, 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 neuropathic 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.

### ***Comparison of Years Ended December 31, 2007 and December 31, 2006***

#### ***Collaborative Research and Development Revenue***

Collaborative research and development revenues increased by \$12.7 million, or 151%, to \$21.1 million for the year ended December 31, 2007 from \$8.4 million for the year ended December 31, 2006. This increase reflects an increase of approximately \$11.5 million in revenue resulting from the accelerated recognition of deferred revenue due to the termination of the McNeil collaboration and a \$4.4 million increase in revenue due to the Pfizer collaboration, partially offset by a decrease in revenue of \$3.2 million due 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.

#### ***Research and Development Expense***

Research and development expense decreased by \$966,000, or 3%, to \$27.9 million for the year ended December 31, 2007 from \$28.8 million for the year ended December 31, 2006. The decrease was due primarily to a decrease of \$5.4 million in expense related to the development of senicapoc for the treatment of sickle cell disease, a decrease of \$142,000 in depreciation expense and a decrease of \$106,000 related to relocation and recruiting expenses, offset by an increase of \$2.0 million in expense related to the development of ICA-105665 and our other lead compounds for epilepsy and neuropathic pain, an increase 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, an increase of \$372,000 related to license fee expense, an increase of \$370,000 in patent expense, an increase of \$205,000 in expense related to pharmacology studies and expense related to our inflammation and other pain studies and an increase in the aggregate of \$207,000 related to increases in equity compensation expense, travel and seminar expense and building rent and maintenance expense.

#### ***General and Administrative Expense***

General and administrative expense increased by \$33,000, or 1%, to \$5.9 million for the year ended December 31, 2007 from \$5.9 million for the year ended December 31, 2006. The increase was due primarily to an increase of \$313,000 in insurance expense, offset by a decrease of \$287,000 in pre-commercialization expenses for senicapoc for the treatment of sickle cell disease.

#### ***Interest Income and Interest Expense***

Interest income increased \$248,000, or 14%, to \$2.0 million for the year ended December 31, 2007 from \$1.7 million for the year ended December 31, 2006. The increase in interest income was attributable to a higher average cash balance.

Interest expense decreased \$45,000, or 21%, to \$168,000 for the year ended December 31, 2007 from \$213,000 for the year ended December 31, 2006. The decrease in interest expense was attributable to a lower average debt balance.

### **Liquidity and Capital Resources**

On February 8, 2005, we completed an IPO of 5,000,000 shares of our common stock at a price of \$8.00 per share. On March 9, 2005, the underwriters purchased an additional 100,000 shares of common stock pursuant to an over-allotment option. Our net proceeds from the IPO, including the over-allotment option and after deducting underwriter's discounts and commissions and offering expenses, were approximately \$35.3 million.

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 are bearing 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 is providing 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 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, 2008, we have raised net proceeds of \$151.5 million from our IPO, private equity financings and the exercise of stock options and warrants. From inception through December 31, 2008, we have also received \$91.6 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, 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 \$273,000 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 \$10.4 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.

Net cash used in operating activities was \$7.6 million for the year ended December 31, 2007. This reflects a net loss of approximately \$10.9 million, a decrease of approximately \$1.4 million in deferred revenue and a decrease of approximately \$1.4 million in accounts payable and accrued expenses. These amounts were partially offset by \$2.6 million of non-cash expenses related to stock-based compensation, \$1.6 million of non-cash expenses related to impairment of technology licenses, a decrease of approximately \$1.0 million in prepaid expenses and other current and non-current assets, \$758,000 of non-cash expenses related to depreciation and amortization of property and equipment and \$119,000 of non-cash expenses for amortization of technology licenses.

Net cash used in investing activities in the year ended December 31, 2007 was \$543,000 and consisted primarily of purchases of property and equipment.

Net cash provided by financing activities during the year ended December 31, 2007 was \$26.5 million and consisted primarily of \$26.6 million in net proceeds from the issuance of equity securities, \$370,000 in net proceeds from the exercise of stock options and warrants and \$221,000 in proceeds from equipment debt financing, partially offset by \$661,000 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 2009 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 Statement of Financial Accounting Standards, or SFAS 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*, or SFAS 144, 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.

The following table summarizes as of December 31, 2008 our contractual obligations for operating leases, equipment debt financing principal and interest payments, annual technology license maintenance fees and other contractual obligations, including minimum annual royalties. 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						2014 and Thereafter
	Total	2009	2010	2011	2012	2013	
	(in thousands)						
Operating leases . . . . .	\$1,750	\$ 528	\$ 518	\$498	\$199	\$ 7	\$—
Equipment debt financing . . . . .	1,923	820	583	386	134	—	—
Annual technology license maintenance fees . . . . .	1,113	183	183	83	63	294	307
Other contractual obligations . . . . .	841	682	159	—	—	—	—
Total . . . . .	<u>\$5,627</u>	<u>\$2,213</u>	<u>\$1,443</u>	<u>\$967</u>	<u>\$396</u>	<u>\$301</u>	<u>\$307</u>

Other contractual obligations as of December 31, 2008 consisted of \$841,000 related to commitments for contract research services for preclinical research and other commitments.

**Funding Requirements**

We expect to incur losses from operations for at least the next several years. In particular, as described above, we expect to incur increasing research and development expense and general and administrative expense in the future. We believe our existing cash and cash equivalents will be sufficient to enable us to fund our operating expenses, obligations under our equipment debt financing and capital expenditure requirements through the second quarter of 2010. 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.

We do not anticipate that we will generate product revenue for at least the next several years. In the absence of additional funding, we expect our continuing operating losses to result in increases in our cash used in operations over the next several quarters and years. To the extent our capital resources are insufficient to meet future capital requirements, we will need to finance future cash needs through public or private equity offerings, debt financings or corporate collaboration and licensing arrangements. Except for collaboration revenue we expect to receive from Pfizer as funding for research and development activities through August 2009, 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 our research and development programs, reduce our planned commercialization efforts, or obtain funds through arrangements with collaborators or others that may require us to relinquish rights to certain drug candidates that we might otherwise seek to develop or commercialize independently. Additionally, any future equity funding may dilute the ownership of our equity investors.

### **Recent Accounting Pronouncements**

In December 2007, the FASB issued Statement of Financial Accounting Standards, or SFAS, No. 141 (revised 2007), *Business Combinations*, or SFAS No. 141(R). SFAS No. 141(R) 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. SFAS No. 141(R) 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. We do not expect that the adoption of SFAS No. 141(R) will have a material impact on our financial statements.

In June 2007, the FASB ratified the consensus reached by the Emerging Issues Task Force, or EITF, on EITF Issue No. 07-3, *Accounting for Advance Payments for Goods or Services to Be Used in Future Research and Development Activities*, or EITF 07-3. EITF 07-3 requires companies to defer and capitalize prepaid, nonrefundable research and development payments to third parties and amortize them over the period that the research and development activities are performed or the services are provided, subject to an assessment of recoverability. EITF 07-3 was effective for new contracts entered into during fiscal years beginning after December 15, 2007, including interim periods within those fiscal years. The adoption of EITF 07-3, effective January 1, 2008, did not have a material impact on our financial statements.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities*, or SFAS No. 159. SFAS No. 159 permits an entity to measure certain financial assets and financial liabilities at fair value. Entities that elect the fair value option will report unrealized gains and losses in earnings at each subsequent reporting date. The provisions of SFAS No. 159 were effective for fiscal years beginning after November 15, 2007. The adoption of SFAS No. 159, effective January 1, 2008, did not have a material impact on our financial statements.

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements*, or SFAS No. 157. SFAS No. 157 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. SFAS No. 157 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. SFAS No. 157 is to be applied prospectively. The adoption of the requirements of SFAS No. 157 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, 2008. 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, 2008, 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, 2008. 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, 2008, 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, 2008 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, 2008 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 Stockholders of Icagen, Inc.**

We have audited Icagen, Inc.'s internal control over financial reporting as of December 31, 2008, 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. 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, 2008, 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, 2008 and 2007, and the related statements of operations, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2008 of Icagen, Inc. and our report dated March 5, 2009 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Raleigh, North Carolina  
March 5, 2009

## **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 2009 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 2009 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](http://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 2009 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 2009 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 2009 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 2009 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 2009 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 2009 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 2009 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, 2008 and 2007
- Statements of Operations for the years ended December 31, 2008, 2007 and 2006
- Statements of Stockholders’ Equity for the years ended December 31, 2008, 2007 and 2006
- Statements of Cash Flows for the years ended December 31, 2008, 2007 and 2006
- 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 16, 2009

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.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ P. KAY WAGONER, PH.D.</u> <b>P. Kay Wagoner, Ph.D.</b>	Director, Chief Executive Officer and President (Principal Executive Officer)	March 16, 2009
<u>/s/ RICHARD D. KATZ, M.D.</u> <b>Richard D. Katz, M.D.</b>	Senior Vice President, Finance and Corporate Development and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 16, 2009
<u>/s/ ANDRÉ L. LAMOTTE, SC.D.</u> <b>André L. Lamotte, Sc.D.</b>	Director	March 16, 2009
<u>/s/ ANTHONY B. EVNIN, PH.D.</u> <b>Anthony B. Evnin, Ph.D.</b>	Director	March 16, 2009
<u>/s/ CHARLES A. SANDERS, M.D.</u> <b>Charles A. Sanders, M.D.</b>	Director	March 16, 2009
<u>/s/ DENNIS B. GILLINGS, PH.D.</u> <b>Dennis B. Gillings, Ph.D.</b>	Director	March 16, 2009
<u>/s/ RICHARD G. MORRISON, PH.D.</u> <b>Richard G. Morrison, Ph.D.</b>	Director	March 16, 2009
<u>/s/ MARTIN A. SIMONETTI</u> <b>Martin A. Simonetti</b>	Director	March 16, 2009
<u>/s/ ADEOYE Y. OLUKOTUN, M.D.</u> <b>Adeoye Y. Olukotun, M.D.</b>	Director	March 16, 2009

**ICAGEN, INC.**  
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## **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, 2008 and 2007, and the related statements of operations, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2008. 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, 2008 and 2007, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2008, in conformity with U.S. generally accepted accounting principles.

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, 2008, 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 5, 2009 expressed an unqualified opinion thereon.

As discussed in Note 1 to the financial statements, effective January 1, 2006, the Company adopted the provisions of Statement of Financial Standards No. 123(R), "Share-Based Payment", to account for stock-based compensation.

/s/ Ernst & Young LLP

Raleigh, North Carolina  
March 5, 2009

**Icagen, Inc.**

**Balance Sheets**

(in thousands, except share and per share data)

	December 31,	
	2008	2007
<b>Assets</b>		
Current assets:		
Cash and cash equivalents .....	\$ 34,215	\$ 43,513
Accounts receivable .....	14	53
Prepaid expenses and other .....	568	774
Total current assets .....	34,797	44,340
Property and equipment, net .....	2,586	1,736
Technology licenses and related costs, net of accumulated amortization of \$383 and \$393 as of December 31, 2008 and 2007, respectively .....	392	465
Deposits and other .....	105	116
Total assets .....	\$ 37,880	\$ 46,657
<b>Liabilities and stockholders' equity</b>		
Current liabilities:		
Accounts payable .....	\$ 1,436	\$ 2,633
Accrued expenses .....	892	866
Current portion of deferred revenue .....	5,378	7,375
Current portion of equipment debt financing .....	662	570
Total current liabilities .....	8,368	11,444
Deferred revenue, less current portion .....	56	3,710
Equipment debt financing, less current portion .....	971	757
Other non-current liabilities .....	373	62
Total liabilities .....	9,768	15,973
Commitments and contingencies		
Stockholders' equity:		
Common stock, \$0.001 par value; 120,000,000 shares authorized at December 31, 2008 and 2007; 46,906,589 and 40,870,619 shares issued and outstanding at December 31, 2008 and 2007, respectively .....	47	41
Additional paid-in capital .....	154,505	142,268
Accumulated deficit .....	(126,440)	(111,625)
Total stockholders' equity .....	28,112	30,684
Total liabilities and stockholders' equity .....	\$ 37,880	\$ 46,657

*See accompanying notes.*

**Icagen, Inc.**

**Statements of Operations**

(in thousands, except share and per share data)

	Years ended December 31,		
	2008	2007	2006
Collaborative research and development revenues:			
Research and development fees .....	\$ 11,711	\$ 17,383	\$ 1,953
Reimbursed research and development costs .....	580	3,734	6,467
Total collaborative research and development revenues .....	12,291	21,117	8,420
Operating expenses:			
Research and development .....	22,140	27,854	28,820
General and administrative .....	5,748	5,940	5,907
Total operating expenses .....	27,888	33,794	34,727
Loss from operations .....	(15,597)	(12,677)	(26,307)
Other income (expense):			
Interest income .....	972	1,960	1,712
Interest expense .....	(190)	(168)	(213)
Total other income, net .....	782	1,792	1,499
Loss before income taxes .....	(14,815)	(10,885)	(24,808)
Income taxes .....	—	—	—
Net loss .....	\$ (14,815)	\$ (10,885)	\$ (24,808)
Basic and diluted net loss per share .....	\$ (0.32)	\$ (0.29)	\$ (1.12)
Weighted average common shares outstanding—basic and diluted .....	46,167,902	37,432,144	22,219,662

*See accompanying notes.*

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

	Common Stock		Additional Paid-In Capital	Deferred Compensation	Accumulated Deficit	Total
	Number of Shares	Amount				
Balance at December 31, 2005 . . . . .	21,991,491	\$ 22	\$112,883	\$(2,981)	\$ (75,932)	\$ 33,992
Elimination of deferred compensation related to the adoption of SFAS 123(R) . . . . .	—	—	(2,981)	2,981	—	—
Exercise of options for 320,775 common shares . . . . .	320,775	—	335	—	—	335
Stock-based compensation expense . . .	—	—	2,528	—	—	2,528
Net loss . . . . .	—	—	—	—	(24,808)	(24,808)
<b>Balance at December 31, 2006 . . . . .</b>	<b>22,312,266</b>	<b>22</b>	<b>112,765</b>	<b>—</b>	<b>(100,740)</b>	<b>12,047</b>
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)
<b>Balance at December 31, 2007 . . . . .</b>	<b>40,870,619</b>	<b>41</b>	<b>142,268</b>	<b>—</b>	<b>(111,625)</b>	<b>30,684</b>
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)
<b>Balance at December 31, 2008 . . . . .</b>	<b>46,906,589</b>	<b>\$ 47</b>	<b>\$154,505</b>	<b>\$ —</b>	<b>\$(126,440)</b>	<b>\$ 28,112</b>

*See accompanying notes.*

**Icagen, Inc.**  
**Statements of Cash Flows**  
(in thousands)

	<b>Years ended December 31,</b>		
	<b>2008</b>	<b>2007</b>	<b>2006</b>
<b>Operating activities</b>			
Net loss .....	\$(14,815)	\$(10,885)	\$(24,808)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization of property and equipment .....	790	758	901
Amortization of technology licenses and related costs .....	47	119	185
Stock-based compensation .....	2,228	2,580	2,528
Loss on the disposal of equipment .....	—	—	63
Write-off of technology licenses and related costs .....	26	1,599	—
Changes in operating assets and liabilities:			
Accounts receivable .....	39	(44)	292
Prepaid expenses and other current and non-current assets .....	217	1,036	(95)
Accounts payable and accrued expenses .....	(1,171)	(1,378)	(79)
Other liabilities .....	273	56	—
Deferred revenue .....	(5,651)	(1,424)	(1,087)
Net cash used in operating activities .....	(18,017)	(7,583)	(22,100)
<b>Investing activities</b>			
Acquisition of property and equipment .....	(1,640)	(545)	(400)
Proceeds from the sale of equipment .....	—	2	—
Net cash used in investing activities .....	(1,640)	(543)	(400)
<b>Financing activities</b>			
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	271
Payments on equipment debt financing .....	(715)	(661)	(738)
Proceeds from exercise of warrants and stock options .....	59	370	335
Net cash provided by (used in) financing activities .....	10,359	26,508	(132)
(Decrease) increase in cash and cash equivalents .....	(9,298)	18,382	(22,632)
Cash and cash equivalents at beginning of year .....	43,513	25,131	47,763
Cash and cash equivalents at end of year .....	\$ 34,215	\$ 43,513	\$ 25,131
<b>Supplemental disclosure of cash flow information</b>			
Cash paid for interest .....	\$ 184	\$ 162	\$ 196
<b>Non-cash items</b>			
Equipment acquired through debt financing .....	—	\$ 385	—

*See accompanying notes.*

**Icagen, Inc.**  
**Notes to Financial Statements**  
**December 31, 2008**

**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, asthma, pain and inflammation.

**Initial Public Offering**

On February 8, 2005, the Company completed an initial public offering (“IPO”) of 5,000,000 shares of its common stock at a price of \$8.00 per share. On March 9, 2005, the underwriters purchased an additional 100,000 shares of common stock pursuant to an over-allotment option. The Company’s net proceeds from the IPO, including the over-allotment option and after deducting underwriter’s discounts and commissions and offering expenses, were approximately \$35.3 million.

All outstanding shares of the Company’s Series A, Series B, Series C, Series D, Series E, Series E-1, Series F, Series G, Series G-1 and Series H convertible preferred stock (“Preferred Stock”) automatically converted into shares of common stock upon completion of the IPO. Series A, Series B, Series C, Series D, Series E, Series F and Series H convertible preferred stock converted at a ratio of one common share per preferred share. Series E-1 and Series G convertible preferred stock converted at a ratio of 1.13809 common shares per preferred share and Series G-1 convertible preferred stock (“Series G-1”) converted at a ratio of 1.875 common shares per preferred share.

**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. Pursuant to the terms of the securities purchase agreement signed in connection with the private placement, the Company filed a registration statement with the Securities and Exchange Commission (“SEC”) to register for resale the shares of common stock sold in the private placement and the shares of common stock issuable upon the exercise of the warrants. This registration statement became effective May 1, 2007.

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.

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

#### 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 Emerging Issues Task Force ("EITF") Issue 00-21, *Revenue Arrangements with Multiple Deliverables* ("EITF 00-21"). 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 EITF 00-21.

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 EITF Issue 99-19, *Reporting Revenue Gross as a Principal Versus Net*

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

as an Agent (“EITF 99-19”), and EITF Issue 01-14, *Income Statement Characterization of Reimbursements Received for “Out-of-Pocket” Expenses Incurred* (“EITF 01-14”). 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, 2008 and 2007 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, 2008 and 2007 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,	
	2008	2007
Cash .....	\$ 172	\$ 989
Money market funds and United States government obligations .....	34,043	42,524
Total .....	<u>\$34,215</u>	<u>\$43,513</u>

#### 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. Depreciation and amortization recorded on property and equipment totaled \$790,000, \$758,000 and \$901,000 for the years ended December 31, 2008, 2007 and 2006, 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.

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

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 Statement of Financial Accounting Standards ("SFAS") No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets* ("SFAS 144"), 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, 2008, 2007 and 2006, the Company recorded amortization of technology licenses and related costs of \$47,000, \$119,000 and \$185,000, respectively. The weighted average remaining amortization period of all technology licenses is 18.5 years. The Company estimates that future amortization of its technology licenses and related costs as of December 31, 2008 will be approximately \$40,000 for each of the three years in the period ended December 31, 2011, approximately \$38,000 in the year ended December 31, 2012, approximately \$37,000 in the year ended December 31, 2013 and an aggregate of \$195,000 thereafter.

During 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 \$26,000 and \$37,000, respectively for the years ended December 31, 2008 and 2007.

#### 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 SFAS 144, 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, 2008 and 2007 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

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

exceeded the amount of FDIC insurance provided on such deposits at December 31, 2008 and 2007. 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:

	<u>Years ended December 31,</u>		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
Pfizer .....	100%	21%	—
McNeil .....	—	79%	100%

**Research and Development Costs**

The Company expenses research and development costs as incurred. Research and development expense includes, among other items, clinical trial costs. 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 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. As of January 1, 2007, the Company accounts for uncertain tax positions in accordance with FASB Interpretation No. 48, "*Accounting for Uncertainty in Income Taxes*," an interpretation of SFAS No. 109.

During the second quarter of 2008, the Internal Revenue Service, (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. 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.

**Comprehensive Loss**

The Company has adopted the provisions of 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 SFAS No. 128, *Earnings Per Share* ("SFAS 128"). Under the provisions of SFAS 128, basic net loss per share

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

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,		
	2008	2007	2006
Outstanding common stock options .....	5,636,519	5,039,193	4,039,258
Restricted stock units .....	586,193	300,459	180,480
Outstanding warrants .....	5,218,920	4,830,422	—
Total .....	11,441,632	10,170,074	4,219,738

**Stock-Based Compensation**

Prior to January 1, 2006, the Company accounted for stock option grants in accordance with Accounting Principles Board Opinion No. 25, *Accounting for Stock Issued to Employees* (“APB 25”), and related Interpretations, as permitted by Financial Accounting Standards Board (“FASB”) Statement No. 123, *Accounting for Stock-Based Compensation* (“Statement 123”). Under APB 25, when the exercise price of the Company’s stock options equals or exceeds the fair market value of the underlying common stock on the date of grant, no compensation expense is recognized. For stock options granted with an exercise price less than the fair value of the underlying common stock on the date of grant, the Company recorded deferred compensation for the difference between the exercise price and the deemed fair value of the Company’s common stock on such date. Deferred compensation was amortized through December 31, 2005 on a straight-line basis over the related option vesting periods, which range from 12 to 48 months. Effective January 1, 2006, the Company adopted the fair value recognition provisions of FASB Statement No. 123 (revised 2004), *Share-Based Payment* (“Statement 123(R)”), using the modified prospective transition method. Under this method, compensation cost recognized includes compensation costs for all share-based payments granted prior to, but not yet vested as of December 31, 2005, based on the grant date fair value estimated in accordance with the original provisions of Statement 123, and compensation costs for all share-based payments granted subsequent to December 31, 2005, based on the grant date fair value estimated in accordance with the provisions of Statement 123(R). Results for prior periods have not been restated.

**Segment Information**

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.

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

#### Recent Accounting Pronouncements

In December 2007, the FASB issued SFAS No. 141 (revised 2007), *Business Combinations* (“SFAS No. 141(R)”). SFAS No. 141(R) 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. SFAS No. 141(R) 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 Company does not expect that the adoption of SFAS No. 141(R) will have a material impact on the Company’s financial statements.

In June 2007, the FASB ratified the consensus reached by the EITF on EITF Issue No. 07-3, *Accounting for Advance Payments for Goods or Services to Be Used in Future Research and Development Activities* (“EITF 07-3”). EITF 07-3 requires companies to defer and capitalize prepaid, nonrefundable research and development payments to third parties and amortize them over the period that the research and development activities are performed or the services are provided, subject to an assessment of recoverability. EITF 07-3 was effective for new contracts entered into during fiscal years beginning after December 15, 2007, including interim periods within those fiscal years. The adoption of EITF 07-3, effective January 1, 2008, did not have a material impact on the Company’s financial statements.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (“SFAS No. 159”). SFAS No. 159 permits an entity to measure certain financial assets and financial liabilities at fair value. Entities that elect the fair value option will report unrealized gains and losses in earnings at each subsequent reporting date. The provisions of SFAS No. 159 were effective for fiscal years beginning after November 15, 2007. The adoption of SFAS No. 159, effective January 1, 2008, did not have a material impact on the Company’s financial statements.

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements* (“SFAS No. 157”). SFAS No. 157 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 measurement. SFAS No. 157 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. SFAS No. 157 is to be applied prospectively. The adoption of the requirements of SFAS No. 157 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

## **Icagen, Inc.**

### **Notes to Financial Statements—(Continued)**

and royalty payments under these agreements based on specified percentages of net product sales, if any. As of December 31, 2008, 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 is recognizing this payment from Pfizer as revenue in accordance with SAB 104, EITF 00-21 and other relevant accounting literature. Specifically, the \$12.0 million upfront license payment was recorded as deferred revenue, which is being amortized to revenue over the two-year life of the research term. In addition to the upfront license fee, Pfizer is providing the Company with research and development funding over a two-year 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 \$12.3 million and \$4.4 million of revenue related to the Pfizer collaboration agreement for the years ended December 31, 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 in accordance with SAB 104, 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

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

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, 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.

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

**3. Property and Equipment, Net**

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

	December 31,	
	2008	2007
Equipment .....	\$ 8,755	\$ 7,598
Leasehold improvements .....	1,715	1,389
Furniture and fixtures .....	352	318
	10,822	9,305
Less: accumulated depreciation and amortization .....	(8,236)	(7,569)
Property and equipment, net .....	\$ 2,586	\$ 1,736

**4. Accrued Expenses**

Accrued expenses consist of the following (in thousands):

	December 31,	
	2008	2007
Accrued development and clinical trial expenses .....	\$761	\$512
Other accrued expenses .....	131	354
Total accrued expenses .....	\$892	\$866

**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, 2008 ranged from 11.52% to 13.35%. 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, 2008 and 2007, approximately \$1.6 million and \$1.3 million of the equipment debt financing notes were outstanding, respectively. Total equipment with a net carrying value of \$1.7 million collateralizes the outstanding equipment debt financing balance at December 31, 2008.

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

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

	December 31,	
	2008	2007
Equipment, furniture and fixtures .....	\$ 2,966	\$ 2,465
Less: accumulated depreciation .....	(1,225)	(1,207)
	\$ 1,741	\$ 1,258

As of December 31, 2008, future annual principal payments under equipment debt financing consist of the following for the years ending December 31 (in thousands):

2009 .....	\$ 662
2010 .....	493
2011 .....	350
2012 .....	128
Total .....	1,633
Current portion of equipment debt financing .....	(662)
Equipment debt financing, less current portion .....	\$ 971

*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. At December 31, 2008, 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, 2008, 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):

2009 .....	\$ 528
2010 .....	518
2011 .....	498
2012 .....	199
2013 .....	7
Total minimum lease payments .....	\$1,750

Rental expense associated with operating leases was \$690,000, \$498,000 and \$423,000 for the years ended December 31, 2008, 2007 and 2006, 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

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

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, 2008 and 2007, 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 drug candidate for the treatment of 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 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 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.

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

As of December 31, 2008, future annual license maintenance fees under the Company's technology license agreements consist of the following for the years ending December 31 (in thousands):

2009 .....	\$ 183
2010 .....	183
2011 .....	83
2012 .....	63
2013 .....	294
2014 through 2024 .....	<u>307</u>
Total .....	<u>\$1,113</u>

The aggregate amount of the annual maintenance fees under these technology license agreements was \$111,000, \$108,000 and \$117,000 in 2008, 2007 and 2006, respectively.

#### *Employment Arrangements*

The Company provides a severance arrangement for certain of its executive officers and key employees, which includes salary and bonus continuance and continued health benefits. At December 31, 2008 and 2007, the Company had not incurred or recorded any obligation related to these arrangements.

#### *Other Contractual Obligations*

Other contractual obligations as of December 31, 2008 consisted of \$841,000 related to commitments for contract research services for preclinical research and other commitments.

## **6. Stockholders' Equity**

#### *Capital Structure*

As of December 31, 2008 and 2007, 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

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

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. Pursuant to the terms of the securities purchase agreement signed in connection with the private placement, the Company filed a registration statement with the SEC to register for resale the shares of common stock sold in the private placement and the shares of common stock issuable upon the exercise of the warrants. This registration statement became effective May 1, 2007.

The terms of the securities purchase agreement that the Company entered into in connection with the private placement require the Company to pay liquidated damages to the purchasers in the private placement in the event that 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 (“Registration Default”). Subject to the specified exceptions, for each 30-day period or portion thereof during which a Registration Default remains uncured, the Company is obligated to pay each purchaser an amount in cash equal to 1% of that purchaser’s aggregate purchase price, up to a maximum of 10% of the aggregate purchase price paid by that purchaser.

As of December 31, 2008 and 2007, the Company had a total of 46,906,589 and 40,870,619 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. 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.

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.

## Icagen, Inc.

### Notes to Financial Statements—(Continued)

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 rights are redeemed or exchanged earlier, they will expire upon the close of business on the earlier of (1) December 2, 2018 or (2) December 2, 2009, if the Company's stockholders do not approve the rights plan by that date.

#### 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, 2008 and 2007 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:

	<u>December 31,</u> <u>2008</u>
Outstanding stock options .....	5,683,558
Outstanding restricted stock units .....	559,948
Outstanding warrants .....	5,218,920
Possible future issuance under the 2004 equity compensation plan .....	<u>2,887,234</u>
Total shares reserved .....	<u>14,349,660</u>

### 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.

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

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, 2008, the Company had 5,683,558 options outstanding with a weighted average exercise price of \$2.15, and 559,948 restricted stock units outstanding. Remaining compensation expense as of December 31, 2008 to be recognized on these options and restricted stock units through December 2012 is approximately \$1.1 million and \$796,000, respectively. The weighted-average period of time over which these costs will be recognized for stock options and restricted stock units is 2.0 and 2.6 years, respectively. As of December 31, 2008, the Company had 4,507,383 options exercisable with a weighted average exercise price of \$2.27. As of December 31, 2008, the Company had 5,680,261 options vested and expected to vest with a weighted average exercise price of \$2.15. The weighted-average remaining contractual terms of the exercisable options and options vested and expected to vest at December 31, 2008 is 5.7 and 6.3 years, respectively. The aggregate intrinsic value of exercisable options and options vested and expected to vest at December 31, 2008 was \$8,000 and \$8,200, respectively.

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

	<b>Years ended December 31,</b>		
	<b>2008</b>	<b>2007</b>	<b>2006</b>
Expected dividend yield . . . . .	0.0%	0.0%	0.0%
Risk-free interest rate . . . . .	3.3%	4.5%	4.8%
Expected volatility . . . . .	100.0%	70.0%	60.0%
Expected life (in years) . . . . .	5.7	4.8	4.8
Estimated weighted average grant date fair value per share of options granted . . . . .	\$ 1.19	\$0.92	\$1.60

The following table summarizes activity related to stock options and restricted stock units as of December 31, 2008, and changes during the year then ended:

	<b>Shares Available for Grant</b>	<b>Stock Options Outstanding</b>	<b>Weighted Average Exercise Price</b>	<b>Restricted Stock Units Outstanding</b>
Balance at December 31, 2007 . . . . .	2,861,034	5,069,303	\$2.21	413,964
Authorized . . . . .	1,000,000	—	—	—
Granted . . . . .	(976,990)	704,360	1.53	272,630
Exercised/Released . . . . .	—	(87,215)	0.69	(126,346)
Forfeited/Cancelled . . . . .	3,190	(2,890)	1.86	(300)
Balance at December 31, 2008 . . . . .	2,887,234	5,683,558	\$2.15	559,948

On September 27, 2006, the Compensation Committee of the Board of Directors approved an employee retention program with the objective of revitalizing the incentive value of the stock options held by the Company's employees. The employee retention program was comprised of two components: stock option grants to Company employees holding outstanding stock options having an exercise price of \$2.00 or greater (the

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

“Retention Grant Program”), and offers to eligible Company management employees, whereby such employees could surrender certain outstanding stock options (the “Old Options”) issued under the 2004 Stock Plan in exchange for a reduced number of new options (the “New Options”) (the “Option Exchange Program”).

Pursuant to the Retention Grant Program, the Company granted to substantially all employees, including the Company’s executive officers, additional stock options for common stock equivalent to two shares of common stock for every three shares of common stock covered by certain outstanding options having an exercise price of \$2.00 or greater, with the number of shares issuable upon exercise of each new option rounded to the nearest share. The new options were granted at the exercise price of \$0.87, equal to the closing price of the Company’s common stock on the Nasdaq Global Market on September 27, 2006, the date on which the options were granted.

Pursuant to the Option Exchange Program, the Company offered each eligible management employee, including the Company’s executive officers, the opportunity to exchange Old Options for New Options at a rate of two shares of common stock for every three shares issuable upon the exercise of an Old Option, rounded to the nearest share. Old Options eligible for the Option Exchange Program were excluded from the Retention Grant Program. The Company granted New Options at the exercise price of \$0.90, equal to the closing price of the Company’s common stock on the Nasdaq Global Market on September 28, 2006, the date on which the eligible management employees elected to exchange their options and the New Options were granted.

Pursuant to the Retention Grant Program and the Option Exchange Program, the Compensation Committee authorized the grant of stock options for the purchase of up to approximately 1,800,000 shares of the Company’s common stock. After giving effect to the cancellation of certain stock options held by management employees for the purchase of approximately 650,000 shares of common stock pursuant to the Option Exchange Program, shares of the Company’s common stock issuable pursuant to stock options increased by approximately 1,150,000 shares as a result of these programs.

All options granted pursuant to the Retention Grant Program and the Option Exchange Program were granted pursuant to the terms of the 2004 Plan, with each option vesting as to 25% of the shares covered thereby on the date that is six months after the grant date; an additional 25% of the shares on the date that is twelve months after the grant date; an additional 17% of the shares on the date that is eighteen months after the grant date; an additional 17% of the shares on the date that is twenty-four months after the grant date; and the remaining 16% of the shares on the date that is thirty months after the grant date.

The awards granted under the Retention Grant Program were accounted for as new awards under Statement 123(R). The awards granted under the Option Exchange Program were accounted for as modifications under Statement 123(R) resulting in an incremental compensation cost of \$147,000 which will be amortized to expense over the vesting period described above.

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

Selected information regarding stock options as of December 31, 2008 follows:

<b>Options Outstanding</b>				<b>Options Exercisable</b>	
<u>Range of Exercise Prices</u>	<u>Number of Options</u>	<u>Weighted Average Remaining Life in Years</u>	<u>Weighted Average Exercise Price</u>	<u>Number of Options</u>	<u>Weighted Average Exercise Price</u>
\$0.50 – \$0.75	477,784	1.5	\$0.64	473,039	\$0.64
0.76 – 1.08	1,939,730	7.8	0.91	1,536,501	0.90
1.09 – 1.92	814,255	8.9	1.51	316,425	1.51
1.93 – 2.50	1,491,440	4.6	2.11	1,288,208	2.12
2.51 – 5.00	387,446	5.5	4.94	376,359	4.95
5.01 – 6.50	377,715	6.2	6.28	350,832	6.29
6.51 – 8.00	144,850	6.5	7.19	124,613	7.18
8.01 – 9.12	50,338	6.7	8.78	41,406	8.79
<u>\$0.50 – \$9.12</u>	<u>5,683,558</u>	<u>6.3</u>	<u>\$2.15</u>	<u>4,507,383</u>	<u>\$2.27</u>

The intrinsic value of options exercised during the years ended December 31, 2008, 2007 and 2006 was \$76,000, \$295,000 and \$1,513,000, respectively. The total fair value of options vested during the years ended December 31, 2008, 2007 and 2006 was \$1.6 million, \$2.0 million and \$2.0 million, respectively.

At December 31, 2008 and 2007, 4,507,383 and 3,393,480 of the Company's outstanding options were exercisable, respectively.

**8. Related Party Transactions**

At December 31, 2008 and 2007, Pfizer held 8,536,125 and 2,688,172 shares, respectively, of the Company's common stock. Total revenues from Pfizer totaled approximately \$12.3 million, \$4.4 million and \$0 in 2008, 2007 and 2006, respectively, including partial recognition of a non-refundable upfront license fee of \$12.0 million in 2008 and 2007 that is being recognized as revenue ratably over the initial two-year research term of the Company's collaboration agreement with Pfizer.

The Company incurred expense of \$658,000, \$6.3 million and \$7.5 million from Quintiles Transnational Corp. for development and clinical trial services in 2008, 2007 and 2006, 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 \$0 and \$1.1 million at December 31, 2008 and 2007, respectively.

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

**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):

	<u>2008</u>	<u>2007</u>	<u>2006</u>
Income tax benefit at federal statutory rate . . . . .	\$(5,185)	\$(3,810)	\$(8,683)
State taxes, net of federal expense . . . . .	(741)	(544)	(1,240)
Research and development credit . . . . .	(434)	103	(460)
Orphan drug credit . . . . .	5,887	(1,145)	(3,502)
Stock compensation . . . . .	641	749	577
Other, net . . . . .	(616)	83	139
Change in valuation allowance . . . . .	448	4,564	13,169
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

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

	<u>2008</u>	<u>2007</u>	<u>2006</u>
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 . . . . .	(41.2)%	10.5%	14.0%
Change in valuation allowance . . . . .	1.2%	(50.5)%	(54.0)%
	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>

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):

	<u>2008</u>	<u>2007</u>
Deferred tax assets:		
Deferred revenue . . . . .	\$ 2,174	\$ 4,434
Excess book depreciation . . . . .	338	362
Stock-based compensation expense . . . . .	1,094	688
Net operating loss carryforwards . . . . .	44,073	32,858
Research and development credit carryforwards . . . . .	3,645	3,211
Orphan drug credit carryforward . . . . .	12,427	21,750
Alternative minimum tax credit . . . . .	5	5
Total deferred tax assets . . . . .	<u>63,756</u>	<u>63,308</u>
Less: valuation allowance for deferred tax assets . . . . .	<u>(63,756)</u>	<u>(63,308)</u>
Net deferred tax assets . . . . .	<u>\$ —</u>	<u>\$ —</u>

At December 31, 2008 and 2007, the Company had net operating loss carryforwards of approximately \$110.2 million and \$91.9 million, respectively, and research and development credit carryforwards of approximately \$3.6 million and \$3.2 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 \$21.7 million as of December 31, 2008 and 2007, respectively, for income tax purposes begin to expire in 2020. For financial

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

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, 2008 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* ("FIN 48"). FIN 48 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 FIN No. 48, the Company will classify any interest and penalty expense in interest expense and general and administrative expense, respectively.

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.

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

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
	1,712
Balance, December 31, 2007 .....	1,712
Increases for tax positions taken during the current period .....	77
Decreases related to settlements .....	(491)
	1,298
Balance, December 31, 2008 .....	\$1,298

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 \$136,000, \$78,000 and \$61,000 in 2008, 2007 and 2006, 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, 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

**Icagen, Inc.**

**Notes to Financial Statements—(Continued)**

	Year ended December 31, 2007			
	1st Quarter	2nd Quarter	3rd Quarter (1)	4th Quarter
Collaborative research and development revenues . . .	\$ 1,990	\$ 3,382	\$ 12,870	\$ 2,875
(Loss) income from operations . . . . .	(6,864)	(6,889)	5,146	(4,070)
Net (loss) income attributable to common stockholders . . . . .	(6,485)	(6,454)	5,612	(3,558)
Basic net (loss) income per share attributable to common stockholders . . . . .	\$ (0.20)	\$ (0.17)	\$ 0.14	\$ (0.09)
Diluted net (loss) income per share attributable to common stockholders . . . . .	\$ (0.20)	\$ (0.17)	\$ 0.13	\$ (0.09)
Weighted average common shares outstanding— basic . . . . .	31,637,662	37,928,862	39,245,452	40,796,031
Weighted average common shares outstanding— diluted . . . . .	31,637,662	37,928,862	41,623,856	40,796,031

- (1) The results for the third quarter of 2007 include the impact of \$10.1 million of the \$11.5 million of incremental revenue recognized as a result of the termination of the collaboration agreement with McNeil. 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. The Company recognized the remaining balance of deferred revenue in 2007 as the collaboration ended and the Company's contractual obligations became complete.

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 2, 2009, the Company issued 741,425 restricted stock units to Company employees at a fair value of \$0.51 per share, the market price of the common stock on the date of grant. The restricted stock units vest annually over a period of four years.

On January 23, 2009, the Compensation Committee of the Board of Directors approved the issuance of 711,290 restricted stock units to Company executives at a fair value of \$0.56 per share, the market price of the common stock on the date of grant. The restricted stock units vest annually over a period of four years.

## 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(1)	Amended and Restated Bylaws of the Registrant, as amended.
4.1(2)	Specimen Stock Certificate.
4.2(2)	Amended and Restated Stockholders' Agreement, dated December 15, 2003, by and among the Registrant and the parties listed therein.
4.2.1(3)	Stockholder Waiver, Amendment and Termination Agreement, dated July 10, 2007, among the Registrant and certain stockholders of the Registrant party to the Amended and Restated Stockholders' Agreement dated as of April 16, 2004.
4.3(2)	Warrant to Purchase Shares of Series B Preferred Stock, dated December 28, 1994, issued to Dominion Fund III.
4.4(2)	Warrant to Purchase Shares of Series D Preferred Stock, dated May 23, 1997, issued to Dominion Fund III.
4.5(2)	Warrant to Purchase Shares of Series E Preferred Stock, dated September 3, 1998, issued to Dominion Fund III.
4.6(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.
4.7(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.
4.8(4)	Securities Purchase Agreement, dated January 26, 2007, among the Registrant and the purchasers listed on Exhibit A thereto.
4.9(5)	Form of Warrant to Purchase Shares of Common Stock, dated February 6, 2007, issued to certain purchasers in connection with a private placement.
4.10(6)	Purchase Agreement, dated August 13, 2007, between the Registrant and Pfizer Inc.
4.11(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*(3)	Form of Incentive Stock Option Agreement under the 2004 Stock Incentive Plan.
10.4*(3)	Form of Nonstatutory Stock Option Agreement under the 2004 Stock Incentive Plan.
10.4.1*(3)	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*(9)	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.

<u>Exhibit Number</u>	<u>Description</u>
10.5.2*(7)	Restricted Stock Unit Agreement, dated February 1, 2006, between the Registrant and Richard D. Katz.
10.6*	Summary of Director Compensation.
10.7*	Summary of 2009 Bonus Targets.
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.
10.10.1*(11)	Amendment No. 1 to Amended and Restated Executive Employment Agreement, dated February 1, 2008, between the Registrant and Seth V. Hetherington.
10.10.2*(23)	Amendment No. 2 to Amended and Restated Executive Employment Agreement, dated December 24, 2008, between the Registrant and Seth V. Hetherington.
10.11*(10)	Amended and Restated Executive Employment Agreement, dated August 22, 2007, between the Registrant and Edward P. Gray.
10.11.1*(11)	Amendment No. 1 to Amended and Restated Executive Employment Agreement, dated February 4, 2008, between the Registrant and Edward P. Gray.
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.

Exhibit Number	Description
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.
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 January 19, 2007.
- (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.

† 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.



**ICAGEN**

ION CHANNEL ADVANCES