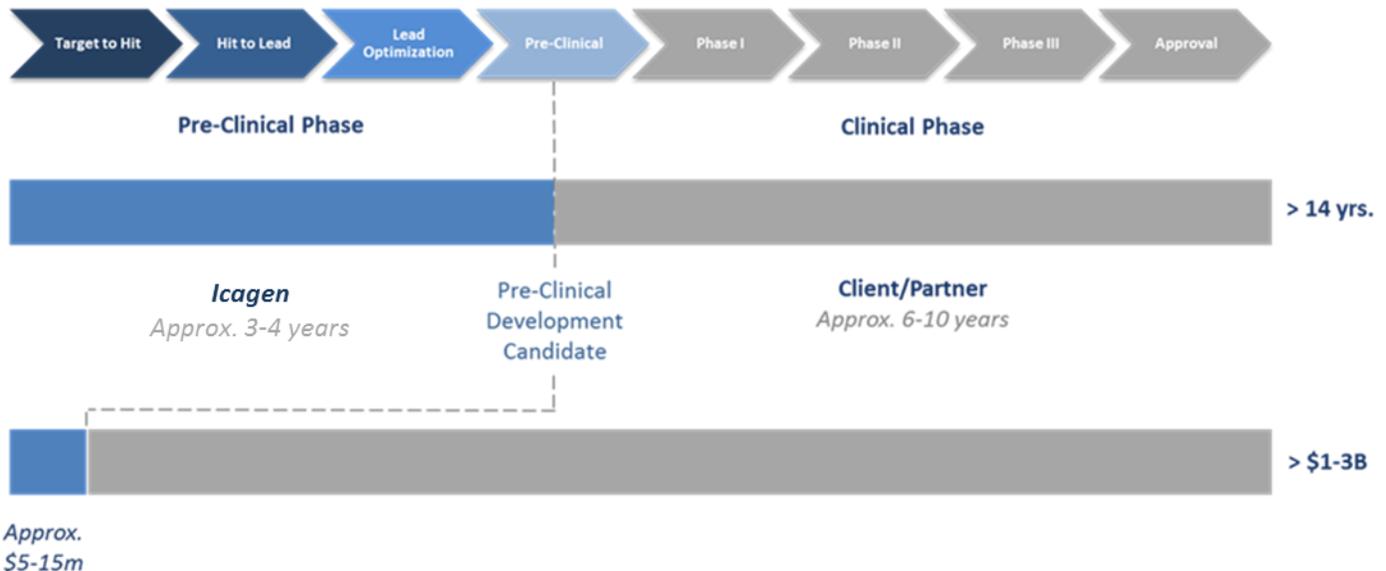


**Corporate Fact Sheet  
Q1 2017**

Icagen currently operates as a partner research organization providing integrated drug discovery services with unique expertise in the field of ion channel, transporter, neuroscience, muscle biology and rare disease targets while also covering many other classes of drug discovery targets and therapeutic areas. Our customers are pharmaceutical and biotechnology companies to whom we offer our industry-leading scientific expertise and technologies to aid in their determination of which molecules to advance into late stage preclinical studies and ultimately clinical trials. The core of our offering is the discovery of Pre-Clinical Drug Candidates (PDC's), which are lead molecules (Leads) that are selected to enter into in-vivo studies during the Pre-Clinical Phase of drug discovery, which ultimately enter into Phase I clinical studies. We offer a full complement of pre-clinical drug discovery services which include assay development technologies (including high throughput fluorescence, manual and automated electrophysiology and radiotracer flux assays), cell line generation, high-throughput and ultra-high-throughput screening, medicinal chemistry, computational chemistry and custom assay services to our customers. Our capabilities also include molecular biology and the use of complex functional assays, electrophysiology, bioanalytics and pharmacology. We believe that this integrated set of capabilities enhances our ability to help our customers identify drug candidates.

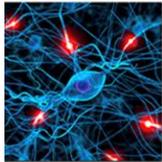
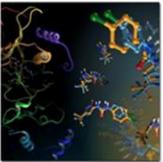


We utilize a target class approach to drug discovery where we leverage our deep expertise in specific areas to more rapidly move drug discovery projects forward. Whereas traditional drug discovery tends to take a more linear approach to compound advancement, our depth of both technical assets and area experts allows us to use more parallel approaches to eliminate problematic molecules early and identify high quality leads in the drug discovery process. This saves time, money and increases the probability

of success in human clinical studies. We believe that our deep understanding of the ion channel genome, neuroscience, muscle biology, and rare disease targets, in particular, and our 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.

We currently operate out of two sites, one in Durham, North Carolina and the other in Tucson, Arizona. The teams in both North Carolina and Arizona have extensive experience over the last 20 plus years performing early drug discovery within Pfizer, Inc. and Sanofi US Inc. delivering Leads from the pre-clinical stage to the clinical stage of drug discovery. We are now leveraging these capabilities to the broader market in the form of services, partnerships and collaborations with large pharmaceutical companies, biotech companies and foundations. At the North Carolina site, which we acquired in July 2015, we have a leading biology expertise focused on ion channels which are important targets in neuroscience. The North Carolina site also houses the XRpro® technology, our legacy technology, which has unique capabilities in the transporter target class. More specifically, our capabilities in North Carolina include a focus on ion channels & transporters, HTS and lead optimization, ion channel profiling, assay development and x-ray fluorescence-based assays. At the Arizona site, which we acquired in July 2016, we have leading biology expertise and platform capabilities in rare diseases and muscle biology and integrated drug discovery. The Arizona site provides capacity in cell models, human biomarkers, muscle biology expertise and stem cells-based assays. In addition, the Arizona site provides compound management services, HTS and Hit identification, in vitro pharmacology, medicinal chemistry, computational chemistry and ADME. The facility also features high volume biology with a flexible robotic infrastructure capable of performing high throughput screening in ultra high 1536 format, enhancing our depth of expertise as a specialized pharmaceutical services company. This enables us to offer a broad range of integrated drug discovery services in a growing market.

The extensive integrated drug discovery platform and technologies at the Arizona site enable us to utilize our biology expertise in both North Carolina and Arizona sites to accelerate the drug discovery and identify quality leads faster.

							
<b>Discovery Biology</b>	<b>Chemistry</b>	<b>In Silico Drug Discovery</b>	<b>ADME And Drug Safety</b>	<b>High Throughput Screening</b>	<b>Compound Purification</b>	<b>Analytics</b>	<b>Sample Management</b>

Icagen currently operates at two sites which are located in Durham, North Carolina and Tucson, AZ.



**Tucson, Arizona USA  
Integrated Drug Discovery Site**

**Benefits:**

- Cost effective
- Convenient, West Coast

**Capabilities:**

- Compound management
- HTS & Hit identification
- *In vitro* pharmacology
- Medicinal chemistry
- ADME, PK/PD



**Durham, North Carolina USA  
ION Channel / XR-PRO Site**

**Benefits:**

- Cost effective
- Convenient, East Coast

**Capabilities:**

- Ion Channel/Transporter HTS & Lead Optimization Support
- Ion Channel Profiling
- Assay Development
- X-Ray Fluorescence Platform

## Company History

The Company, formerly known as XRpro Sciences and Caldera, was founded by in 2003 at the request of the then director of Los Alamos National Laboratory (“LANL”) for the purpose of commercializing the use of x-ray fluorescence to measure the chemical composition of pharmaceuticals. In July 2014 the Company acquired assets of Icagen, Inc., the subsidiary of Pfizer, transitioning and increasing the level of expertise in drug discovery and adopted the Icagen name.

Icagen was founded in 1992 as a start-up biotech to discover, develop and commercialize small molecules targeting ion channels. Icagen sent its first molecule into the clinic for sickle cell anemia in 1999. Over the years Icagen also provided access to its innovative discovery platform. In 2007, Icagen entered into a collaborative agreement with Pfizer to identify novel compounds targeting voltage-gated sodium channels for the treatment of pain. Due to the success of the programs Icagen was acquired in 2011 by Pfizer. Pfizer integrated Icagen into Neusentis which was a biotech-like unit within Pfizer combining research in pain, sensory disorders, and regenerative medicine for the next 4 years. In an effort to move to a more variable (outsourced) R&D model Pfizer in July 2015 divested Icagen to XRpro Sciences who re-launched the Icagen team and capabilities under the Icagen name.

Since the Icagen spinout from Pfizer, the company has experienced accelerated growth and market acceptance as a leader in the area of Ion Channel and Transporter Targets with major large pharma clients and biotechs. We then began to look for ways to leverage that success and did so with the newly acquired Icagen Tucson business from Sanofi which added a complete integrated drug discovery capability beyond ion channels and transporters covering most classes of drug discovery targets.

## **Industry Overview**

Pharma R&D organizations are under pressure to deliver differentiated products while holding spending flat. Over the last 15 years, R&D spend has grown five percent annually while output in terms of new molecular entities approved has dropped by approximately 22%. Thus, to invest their R&D budget more efficiently, the pharmaceutical industry has constantly increased the segment of the budget dedicated for outsourcing. This leads to increased flexibility to address the changing landscape in the discovery world and to reduce significantly the fixed costs for headcounts. In addition, this allows rapid access to specific know-how instead of building it up internally which is time and resource intensive. For the foreseeable future, outsourcing is expected to increase even further as a proportion of R&D spending, including significant investment in the early part of the discovery phase. Meanwhile, big pharma's well known innovation gap, including the absence of promising preclinical leads in their pipelines, has been further increased. Therefore, Icagen is at an opportune time evolving as a leading drug discovery company, offering outsource services to support the growing need of the Pharmaceutical industry while in parallel generating proprietary leads for innovative therapies for diseases with a high unmet medical need.