

## **GNS HEALTHCARE SECURES CONTRACT TO UNLOCK MECHANISMS OF MAJOR CANCER DRUGS WITH NCI 60 DATA AND REFS™ DATA-DRIVEN COMPUTATION MODELS**

Cambridge, MA – January 25, 2011 – [GNS Healthcare, Inc.](#) (GNS) today announced that it has entered into a subcontract with SAIC-Frederick, Inc. in support of SAIC-Frederick’s prime contract with the National Cancer Institute. GNS will analyze National Cancer Institute (NCI) data generated from the application of several well-known cancer treatments to the NCI-60 cancer cell line panel. These drugs include several well-known, clinically active, mechanistically distinct anticancer agents: doxorubicin X2, Velcade® (bortezomib), paclitaxel, Sprycel® (dasatinib), Sutent® (sunitinib), and rapamycin. This collaboration will utilize GNS’s supercomputer-driven REFS™ platform to build computer models in a hypothesis-free, unbiased manner that will be simulated to identify key genetic and molecular mechanisms of drug efficacy and resistance in cancer. The goal of this project is to identify biomarkers and biological mechanisms that will lead to better matching of drugs to patients and new effective drugs in cancer. Financial terms of the agreement were not disclosed.

“GNS is excited to be undertaking this radically new approach to unraveling mechanisms of cancer drugs that is complementary to the expert driven, but biased, approaches that have been the standard in cancer research for decades,” said Dr. Iya Khalil, Executive Vice President and co-founder of GNS. “This work with NCI, the world’s leading cancer research institute, is another example of GNS applying our supercomputer-driven REFS™ platform to accelerate better treatments for patients with cancer.”

The NCI-60 panel of human tumor cell lines was initially developed by NCI in the 1980s as an *in vitro* resource for drug discovery to replace the use of transplantable animal tumors in the screening of anti-cancer agents. Since then, thousands of drugs have been run against the panel, and various data have been collected from these experiments. The panel is perhaps one of the most extensively characterized panel of cell lines in the world in broad laboratory use.

In the first phase of the project, GNS will utilize transcriptional profiling data previously collected by NCI from the application of the NCI-60 panel. GNS will utilize the REFS™ platform to reverse-engineer network models from the data that connect drug doses to transcriptional networks to endpoints. The results from millions of *in silico* simulations of these models will provide unique insights into the varied response that heterogeneous tumors exhibit to commonly used anti-cancer agents, enabling the exploration of diverse patient clinical responses and providing additional context for better clinical care.

This first phase represents the foundation for a revolutionary new approach to cancer drug development, which begins with data, machine-learning algorithms, and massively parallel computers. In an unbiased manner, the data is probed with the algorithms and supercomputers to uncover which genes and proteins drive drug efficacy and cancer biology. GNS will then build versions of the computer models that may be made available more broadly to cancer scientists for their own research via a web interface.

**About REFS™**

REFS™ is comprised of integrated machine learning algorithms and software that extract “causal” relationships from complex, multi-dimensional data and enable the simulation of billions of “what if?” hypotheses to explore novel unseen conditions and predictions forward in time. This model-centric discovery and simulation approach represents a paradigm shift in data analysis, leapfrogging existing approaches such as high-dimensional pattern matching. REFS™ is licensed to GNS Healthcare from Via Science.

### **About GNS Healthcare, Inc.**

[GNS Healthcare](#), a subsidiary of [Via Science](#), is a healthcare IT company that applies machine learning and simulation technology to optimize patient treatment in partnership with health insurance companies, pharmacy benefit managers, and pharmaceutical & biotech companies. GNS Healthcare is the information guru between drug makers and drug buyers matching drugs to patients to deliver on the promise of ‘smart’ medicine.

### **About SAIC-Frederick, Inc.**

SAIC-Frederick, Inc., a wholly owned subsidiary of Science Applications International Corporation (SAIC), a Fortune 500® company, is the operations and technical support contractor for the National Cancer Institute’s research and development center in Frederick, Md. This is a national laboratory dedicated to rapidly translating basic research into new technologies for diagnosing, treating, and preventing cancer and AIDS. SAIC-Frederick maintains a full suite of advanced technologies in areas such as nanotechnology, genomics and imaging; operates the federal government’s drug and vaccine manufacturing facilities; operates the high-performance Advanced Biomedical Computing Center; and supports more than 300 clinical trials for patients in the United States and around the world.

### **About the National Cancer Institute**

The National Cancer Institute (NCI) leads the National Cancer Program and the National Institutes of Health’s effort to dramatically reduce the burden of cancer and improve the lives of cancer patients and their families, through research into prevention and cancer biology, the development of new interventions, and the training and mentoring of new researchers.

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