

# Life Sciences

## DISCOVERY FUND

### NEWS RELEASE

#### For Immediate Release

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### **LIFE SCIENCES DISCOVERY FUND ANNOUNCES GRANTS TO COMMERCIALIZE HEALTH-RELATED PRODUCTS AND SERVICES**

SEATTLE, Washington, June 27, 2013 — The Life Sciences Discovery Fund (LSDF) today announced nearly \$1.5 million in Proof of Concept grants to Washington for-profit and non-profit organizations to foster translation of health-related technologies from idea to market launch. Also announced was over \$300,000 in supplemental funding to two ongoing grants to enhance the commercial potential of the technologies developed through those awards. (See Backgrounder Information.)

The LSDF Board of Trustees made the final award selections following review of proposals for scientific and technical merit, commercial potential, and possible health and economic benefits.

The six Proof of Concept grants will advance the development of products to better prevent, diagnose, or treat brain injury, infectious diseases, and cancer. Funding will also support applications of information technology to improve the efficiency and cost-effectiveness of medical care.

“LSDF continues to be impressed with the high quality of the technologies emerging from Washington’s research organizations and companies, and we are pleased this quarter to announce our largest cohort of commercialization-focused awards to date,” stated LSDF executive director John DesRosier. “These grants are intended to accelerate commercial development of promising technologies that will enhance the health of Washington’s residents and contribute to economic prosperity.”

The grant supplement to the University of Washington builds upon LSDF-funded initiatives that have improved surgical care, saved the state over \$67 million dollars in health-care costs, and saved hundreds of lives. LSDF will provide up to \$285,204 to principal investigator David Flum

to expand these activities to engage patients before they enter the hospital and to develop a business model.

The grant supplement of up to \$23,000 to Viket Medical Corporation will support software enhancements to a device that rapidly visualizes and removes blood clots from the brain in stroke patients.

“LSDF’s prior investments in Dr. Flum’s health-care initiatives and Viket’s catheter have been very successful in terms of technology and process validation, follow-on funding, and cost savings,” noted board chair Lura Powell. “However, additional work is still required for sustainability and broad translation, and we are pleased to provide supplemental funding to support such efforts.”

LSDF will release the Request for Proposals for its 2013-2014 granting programs in early August 2013, and the first pre-proposal deadline is anticipated to be in September 2013. For more details, please visit the LSDF website at <http://www.lsdfa.org/>, email [programs@lsdfa.org](mailto:programs@lsdfa.org), or call 206-456-9577.

Funding for the new awards comes from Washington’s allocation of payments under the Master Tobacco Settlement Agreement of 1998, revenues arising from multi-state litigation with tobacco product manufacturers.

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*The Life Sciences Discovery Fund, a Washington state agency established in May 2005, makes grant investments in innovative life sciences research and development to benefit Washington and its citizens.*

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### BACKGROUNDER INFORMATION

#### LIFE SCIENCES DISCOVERY FUND AWARDS, JUNE 2013

**Shailender Bhatia, University of Washington, \$249,928**

Project Title: *A Proof-of-Concept Clinical Trial of Intratumoral Injection of Glucopyranosyl Lipid A (GLA), a Toll-like Receptor 4 (TLR4) Agonist, in Patients with Merkel Cell Carcinoma*

Project Focus: To conduct a clinical trial of GLA therapy in Merkel cell carcinoma patients

Grant Mechanism: 2012-2013 Proof of Concept Granting Program

This grant will support novel use of a vaccine adjuvant developed by Immune Design Corporation as a cancer therapeutic for Merkel cell carcinoma (MCC). MCC often occurs in the skin, presenting the opportunity to inject adjuvant directly into the tumor. The adjuvant, which will be tested in 10 MCC patients, is expected to recruit immune cells to the tumor to assist the patient's own immune system in attacking the cancer. Immune therapies with antibodies have had some recent spectacular successes, and although this is a different approach (no tumor-specific antibodies will be injected), activating the patient's immune system shows promise and is generally safer and better tolerated than traditional chemotherapy. Only about 1,600 patients per year develop MCC, but the University of Washington is a center that attracts both in-state and out-of-state patients, and the therapy may ultimately be applicable to other cancers.

**Tom Clement, Aqueduct Neurosciences, Inc., \$249,500**

Project Title: *Smart External CSF Drain*

Project Focus: To set up pilot production and test a smart external drain system in preparation for commercialization

Grant Mechanism: 2012-2013 Proof of Concept Granting Program

External ventricular drains are placed to reduce intracranial cerebrospinal fluid (CSF) volume and lower intracranial pressure (ICP) in situations such as brain trauma, brain hemorrhage, stroke, brain tumors, and hydrocephalus. Among other drawbacks, current drain systems require frequent adjustments by nurses to control drainage rate and require patients to remain

completely still. An LSDF Commercialization grant to the University of Washington supported development of a prototype smart external drain (SED) that automatically maintains proper CSF drainage in response to changes in CSF production rate and patient position. Aqueduct Neurosciences, Inc. (ANI) was formed to commercialize the SED and related technologies. The grant to ANI will support pilot production of SED devices for 1) verification testing for regulatory submissions, and 2) limited clinical studies to demonstrate performance advantages. Successful completion of these activities is expected to put ANI in a strong position for private investment to carry the SED to market launch and sales.

**Stefan Kappe, Seattle Biomedical Research Institute, \$249,336**

Project Title: *In vitro Production of Plasmodium falciparum Sporozoites*

Project Focus: To manufacture genetically altered malaria sporozoites at large scale for immunization

Grant Mechanism: 2012-2013 Proof of Concept Granting Program

Dr. Kappe and colleagues will scale up and pilot test a process to manufacture genetically altered malaria sporozoites in conjunction with a new startup company, MalarVx. Production at large scale is necessary to produce enough material for initial immunization and maintenance of ongoing immunity. The Washington market is travelers to endemic regions and the military; the developing world is a vastly larger market but at a lower cost.

**Alisa Littau, Cancer Targeted Technology, \$250,000**

Project Title: *Development of a Novel PET Imaging Agent for Prostate Cancer*

Project Focus: To produce a GMP-quality, novel metastatic prostate cancer targeted imaging agent product for use in a toxicology study to prepare for FDA review

Grant Mechanism: 2012-2013 Proof of Concept Granting Program

Metastatic prostate cancer cannot be diagnosed adequately and is associated with high mortality. Early identification of prostate cancer metastasis would enable more rapid and aggressive treatment and better patient outcomes. Cancer Targeted Technology has developed a highly specific, easily produced agent that can identify human prostate cancer cells implanted in an animal model through binding to prostate-specific membrane antigen (PSMA). This grant focuses on developing that agent for the diagnosis of metastatic prostate cancer via positron emission tomography (PET) imaging. Ultimately, the diagnostic could be radioactively labeled to act as a therapeutic and kill metastatic cells. LSDF funding will support manufacture of good manufacturing practice (GMP)-compliant material and toxicology studies in an animal model in preparation for human studies.

**Edwin Rubel, University of Washington, \$249,991**

Project Title: *Development of Therapeutic Drugs to Prevent Hearing Loss*

Project Focus: To develop drugs to protect hearing when particular antibiotics are used

Grant Mechanism: 2012-2013 Proof of Concept Granting Program

This grant will support development and testing of a novel class of drugs that promises to protect the hearing of patients taking an antibiotic that is underutilized because of its negative impact on hearing. Three candidate drugs will be produced in sufficient quantity and tested for efficacy and toxicology in an animal model. Those same animal models could be a platform for discovering other drugs that protect hearing in other situations (*e.g.*, from chemotherapeutic drugs or excessive noise). A start-up company, Oricula Therapeutics, has been formed to commercialize the drugs.

**Paul Song, BenchMark Medical, \$250,000**

Project Title: *Better Healthcare through Better Data*

Project Focus: To link surgical supply use data with quality of care information to help hospitals reduce costs while maintaining patient safety

Grant Mechanism: 2012-2013 Proof of Concept Granting Program

In the era of health-care reform and fiscal constraints, pressure is mounting on hospitals to deliver higher value and more efficient care. Surgery is the most resource-intensive of all services and is an important target for improvement. Lack of information on correlations between expenses and patient outcomes has resulted in wide variation in costs and use of expensive technology that offers little benefit. BenchMark Medical (BMM) has developed a proprietary data platform, tools, and services to link surgical supply use data with quality of care information from the LSDF-funded Surgical Care and Outcomes Assessment Program (SCOAP) or similar initiatives. Such technologies can help hospitals identify means to safely reduce costs and also inform device companies' pricing and marketing strategies. This grant will support improvements in analytics and data presentation that will allow BMM to scale up and serve significantly more customers.

**David Flum, University of Washington, up to \$285,204**

Project Title: *SCOAP Comparative Effectiveness Research Translation Network*

Project Focus: To expand and leverage datasets on quality of surgical care and collect patient outcomes, which will allow the health-care system to dynamically “learn” from patient care

Grant Mechanism: Grant Award Supplement

The Surgical Care and Outcomes Assessment Program (SCOAP), funded in part by a 2007 LSDF grant to David Flum at the University of Washington, collects and shares data on surgical procedures and patient outcomes among hospitals statewide to promote widespread use of the safest and most effective practices. SCOAP serves as a platform for comparative effectiveness research (CER), the science of understanding how well health-care interventions work and how different health-care strategies impact patients and the health-care system. Integrating CER into health-care decision-making will likely be critical for getting more value out of health-care dollars. CERTN links SCOAP data to records from outpatient facilities, statewide payer health-care and claims data, the state's vital status registry, and patient-reported outcomes surveys to provide investigators, insurers, health-care stakeholders, and policymakers with longitudinal data on surgical and medical treatment and patient outcomes to ultimately improve best practices and cost-effectiveness. CERTN is analogous to the aviation safety system, in which problems and errors are quickly reported and acted on to improve safety. CERTN will serve as a model for other communities that are trying to develop a learning health-care system. A supplement was awarded to extend the program to pre-hospital care, *i.e.*, in clinicians' offices, to optimize patient health prior to surgical intervention. A pilot to eliminate smoking in patients prior to spine fusion is expected to reduce re-operations necessary for failed spine surgery, saving an estimated \$8 million annually in Washington. A business plan to create and market SCOAP/CERTN services will also be developed and implemented.

**Robert Wilcox, Viket Medical Corp., up to \$23,000**

Project Title: *MITT - Minimally Invasive Transcranial Thrombectomy*

Project Focus: To test a catheter that removes intracranial blood clots from stroke patients

Grant Mechanism: Grant Award Supplement

Hemorrhagic stroke affected more than 2,000 Washingtonians last year. Half of all victims die within one month; most survivors require support for the remainder of their lives. In 2010, the direct cost of hemorrhagic stroke in Washington was \$274 million (\$12.7 billion in the US). Recent preclinical and clinical evidence supports evacuation of stroke-related blood clots through minimally invasive surgery to improve patient outcomes. Viket has designed a catheter that is compatible with familiar neuronavigation imaging equipment and that can be used to remove clots in minutes. The tip includes an ultrasound proximity sensor to help surgeons avoid healthy brain tissue. Through LSDF funding, Viket has tested its second-generation catheter design in a human skull model and an animal model. A supplement was awarded to add 3-D visualization of the clot. This modification is expected to simplify use by the neurosurgeon and increase the catheter's commercial appeal.

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