

# Life Sciences

## DISCOVERY FUND

### NEWS RELEASE

For Immediate Release

Media contact: Alden Jones

Tel: 206-732-6770

alden@lsdfa.org

### WASHINGTON STATE LIFE SCIENCES DISCOVERY FUND ANNOUNCES COMMERCIALIZATION GRANT AWARDS AND A FOLLOW-ON COMPETITION

SEATTLE, Washington, July 20, 2010—The Life Sciences Discovery Fund (LSDF) today announced \$600,000 in awards to four Washington state-based research teams to support commercial development of health-related technologies. The funded projects will concentrate on improving the success rate of lumbar punctures (spinal taps) in children; developing a safer and more effective magnetic resonance imaging (MRI) contrast agent; enhancing a DNA sequencing technology to profile T cells within the immune system; and developing a device to detect early stages of tooth decay.

The LSDF awardees are: Julie Brown, Seattle Children’s Hospital; Rodney Ho, University of Washington; Harlan Robins, Fred Hutchinson Cancer Research Center; and Eric Seibel, University of Washington. (See Backgrounder Information.)

LSDF’s commercialization grant competition, which debuted in 2009, promotes the translation of promising ideas or technologies from Washington’s non-profit research sector into marketable products and services having the power to improve health, foster economic growth, and enhance life sciences competitiveness in the state.

“LSDF is pleased to make these awards. This new cohort aligns well with our current portfolio strengths in immunology, genomics, and medical imaging, yet also represents an expansion of our investments to the critical areas of dental health and pediatric emergency care,” said executive director Lee Huntsman.

The four awards were selected from the 12 proposals received. A panel of national experts convened by the American Association for the Advancement of Science evaluated the scientific and technical merit of the proposals, while a panel of commercialization experts assessed each

proposal's commercial potential and possible health and economic benefits. The LSDF Board of Trustees made the final award selections.

In the competition for these commercialization grants, LSDF instituted a hands-on process in which applicants were interviewed by commercialization experts at an early stage of the review process. The experts critiqued the proposed ideas and provided insight about their commercial viability. John DesRosier, director of programs, indicated his belief that the interaction between scientists and commercialization experts during the review process enhanced applicants' ability to present more competitive proposals. "Applicants told us that the feedback and advice provided by the commercialization experts was very helpful. We believe that the interviews both enhanced reviewers' understanding of the applicants' work and markedly improved the quality of the proposals."

In light of this improvement, LSDF is launching a second round of the 2010 Commercialization Grant Competition. Visit the LSDF website, <http://www.lsdfa.org/>, for more information.

Funding for the latest set of awards comes from donations to LSDF by Amgen, the Bill & Melinda Gates Foundation, Group Health Cooperative, Microsoft Corporation, the Paul G. Allen Family Foundation, Regence BlueShield, and Safeco Insurance Foundation; and 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 to benefit Washington and its citizens.*

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### BACKGROUNDER INFORMATION

#### Life Sciences Discovery Fund 2010 Commercialization Grant Competition Awards

##### **Julie Brown, Seattle Children's Hospital, \$150,000**

Project Title: *A Randomized Clinical Trial of Pediatric Lumbar Puncture Success using The Compass, a Compact Quantitative Pressure Transducer*

Project Focus: To test if a pressure transducing device increases the success of lumbar puncture

Lumbar punctures (LPs) to extract a sample of cerebrospinal fluid (CSF) are necessary to diagnose meningitis, neurological diseases, and some cancers. They are common pediatric emergency department procedures that frequently require repeated attempts or are only partially successful. Measuring CSF pressure during LP is recommended but rarely done, due to limitations of current technology. The Compass is a new, inexpensive, and disposable medical device specifically designed for use during LPs. A randomized clinical trial will compare the Compass against standard care and document time to successfully collect sample, physician satisfaction, and complications. Positive results will improve patient care, decrease costs due to inconclusive results, and help attract investment capital or strategic partnerships to develop the market for the Compass. Mirador Biomedical, Inc., a start-up medical device company, is collaborating.

##### **Rodney Ho, University of Washington, \$150,000**

Project Title: *Gadolinium-Lipid Nanoparticles for More Effective and Safe Medical Diagnosis with MRI*

Project Focus: To test the safety and pharmacology of a novel MRI contrast agent

Approximately 65% of all magnetic resonance imaging (MRI) procedures use chemical agents to enhance contrast to deliver a better image. MRI contrast agents, notably gadolinium-containing formulations, deliver modest image resolution and are associated with serious safety concerns. Gadolinium is associated with nephrogenic systemic fibrosis, which can be especially severe in

patients with renal failure. Currently, all gadolinium contrast agents carry an FDA ‘black box’ warning in the product labels. Dr. Ho’s research team has developed a gadolinium-containing lipid nanoparticle carrier (LNC) that shows improved image contrast at gadolinium concentrations that are much lower than those presently used. The LNC offers the prospect of improved safety and use in patients with kidney disease. LSDF will support gadolinium-LNC pharmacokinetic and preliminary safety studies to compare this new agent with the existing MRI contrast products.

### **Harlan Robins, Fred Hutchinson Cancer Research Center, \$150,000**

Project Title: *High-Throughput Sequencing of T-Cell Receptors*

Project Focus: To scale up a high-throughput T cell receptor gene sequencing service to expand researcher access and enable better diagnostics and treatments for conditions involving the immune system

T cell receptors (TCRs) are key components of the immune system and are also believed to play a role in autoimmune disease. Dr. Robins and colleagues have developed a method to sequence TCR genes at very high throughput and formed a company, Adaptive TCR Corporation, to offer this service to the research community. TCR sequence information allows investigators to study topics such as immune system reconstitution following cord blood transplantation; immune responses to vaccines; and association of specific TCRs with autoimmune disorders. The proposed work will scale up Adaptive TCR’s sequencing service by improving the assay as well as the associated software/analytical tools. This scale-up is anticipated to markedly reduce the cost of Adaptive TCR’s service and thus broaden researcher access within a short timeframe. In addition to enhancing research competitiveness, this expanded access could potentially enable improved post-transplantation treatment protocols, more effective vaccines, and new diagnostics for autoimmune disorders.

### **Eric Seibel, University of Washington, \$150,000**

Project Title: *Laser Imaging for Early Caries Detection and Cost-Effective Oral Health*

Project Focus: To develop a low-cost imaging system for early detection of tooth decay

Standard methods for detecting tooth decay—visual inspection, metal hand picks, and X-ray imaging—cannot detect the early stage of dental caries (cavity) formation, when it is still possible to restore (remineralize) the enamel without drilling. The goal of the proposed work is to develop a prototype low-cost imaging system to detect early tooth decay, thus allowing intervention before dental fillings or tooth extraction are required as well as monitoring of the remineralization process without X-rays. Such early detection and intervention would be

expected to reduce dental care costs and improve overall oral health. The proposed studies include adaptation of Dr. Seibel's existing laser-based endoscopic device for dental imaging and preliminary assessment of sensitivity and specificity in detecting early lesions in extracted teeth.

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