



## Louisiana EPSCoR Seed Funding Grows Exponentially

*Louisiana's National Science Foundation (NSF) EPSCoR program offers a unique opportunity that provides seed money to stimulate and support tenured and tenure-track science and engineering faculty in their exploration of innovative or novel research. The Pilot Funding for New Research (Pfund) program's ultimate goal is to help scientists become more competitive in acquiring federal funding.*

*Out-of-state peer reviewers evaluate the merit of each proposal for the one-year grants of up to \$10,000. Untenured faculty may use funding to sharpen their research focus and develop cutting-edge techniques; tenured faculty, to demonstrate a novel or innovative concept or investigate new areas requiring a shift in their current research direction.*

*Following are highlights of four of the 2006 Pfund grants; articles on other recipients will be highlighted in upcoming Newsletters.*

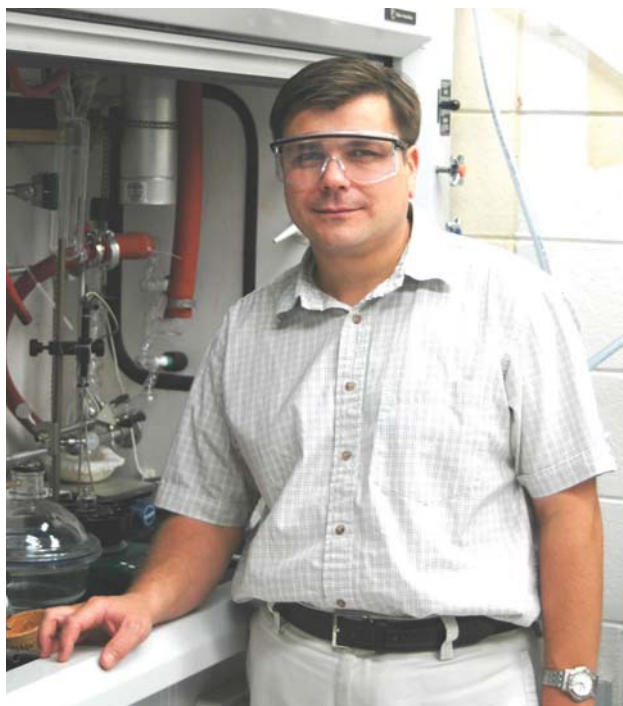
### **Drs. Evgueni E. Nesterov and Henry S. Ashbaugh**

Following their participation in the LA EPSCoR program, these two Pfund principal investigators were awarded an NSF CAREER grant. NSF's most prestigious award for junior faculty, it recognizes and supports the early career development activities of faculty members most likely to become the academic leaders of the 21<sup>st</sup> century.

Dr. Nesterov, Louisiana State University Assistant Professor of Chemistry, was awarded \$580,000, and Dr. Ashbaugh, Tulane University Assistant Professor of Chemical and Biomolecular Engineering, received \$431,000.

The objective of Dr. Nesterov's Pfund research was the development of sensitive and selective fluorescent solid-state chemosensors for real-time chemical monitoring, important in a broad range of areas encompassing medical diagnostics, environmental monitoring, anti-terrorism activities, the food industry, and more.

Preliminary results obtained with the Pfund funding were included in his NSF CAREER proposal.



Dr. Evgueni E. Nesterov, LSU Assistant Professor of Chemistry and a recipient of a 2006 Pfund grant, was subsequently awarded a prestigious NSF CAREER grant.

Dr. Ashbaugh reported that his NSF CAREER grant proposal on protein thermodynamics took advantage of preliminary results obtained during the Pfund support period.

The overarching theme of his Pfund project was the design of nanostructured materials via sophisticated computer models using a combination of statistical thermodynamic theory and molecular simulation.

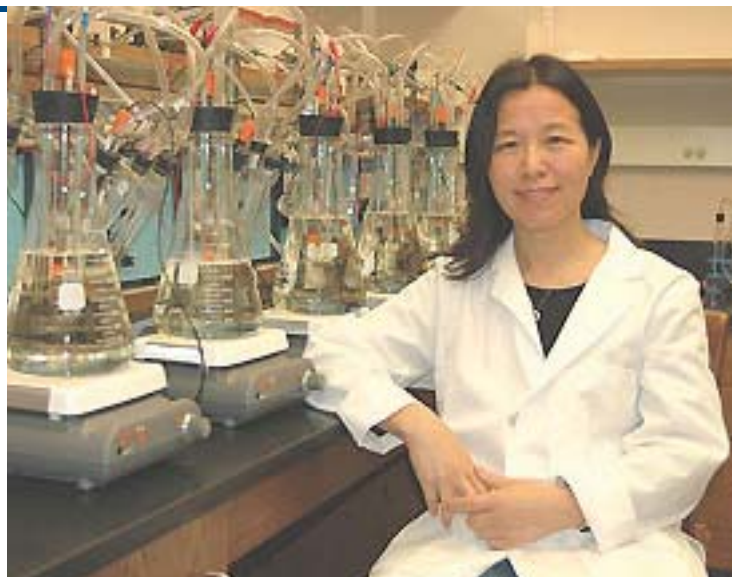
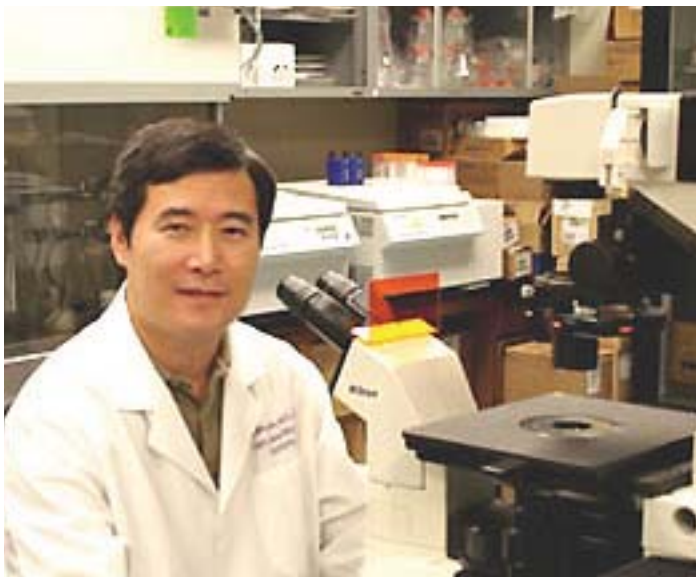
### **Dr. Aixin Hou**

A partnership between a Pfund research team and the U.S. Interior Department's National Wetlands Research Center (NWRC) will reportedly have a large impact on wetland restoration methods and land management issues affecting such environmental problems facing Louisiana and the Lower Mississippi Valley as hypoxia in the Gulf of Mexico and greenhouse gas emissions.

Led by Dr. Hou, the Pfund team employed cutting-edge molecular techniques to gain quantitative understanding of changes that occur in the soil and the structure of its microbial community in the lower Mississippi Delta's restored forested wetlands.

The FY 2008-09 Request for Proposals for Louisiana's National Science Foundation EPSCoR Pfund Program is available at [www.laregents.org](http://www.laregents.org). The last day for questions and answers about the program is November 6, 2008. Proposals are due November 13, 2008.

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Louisiana NSF EPSCoR 2006 Pfund recipients included Dr. Wei-Ming Duan, LSU Health Sciences Center - Shreveport Assistant Professor, Department of Cellular Biology and Anatomy, left, and Dr. Aixin Hou, LSU Assistant Professor of Environmental Sciences.

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According to NWRC Wetland Research Biologist Stephen Faulkner, the research will help fill important gaps in two of his current research projects, one on climate change, the other on agricultural watersheds in the Lower Mississippi Valley.

As a result of the Pfund project, Dr. Hou, an LSU Assistant Professor of Environmental Sciences, along with her LSU collaborator, Dr. Irv Mendelssohn, was awarded a \$268,498 grant from the University of New Hampshire and a \$74,400 Coastal Science Assistantship Grant from Louisiana's Department of Natural Resources, Office of Coastal Restoration and Management.

## Dr. Wei-Ming Duan

Recent developments in molecular biology have made intracranial gene therapy a potential option for the treatment of central nervous system diseases. This alternative therapeutic approach has been employed in studies focusing on the treatment of Parkinson's Disease and malignant gliomas, the most common primary tumors of the central nervous system.

Members of an LSU Health Sciences Center-Shreveport (LSUHSC-S) Pfund team worked on the development of a novel delivery system addressing a major obstacle in the process of delivering genetic materials in the brain.

Led by Dr. Duan, Assistant Professor of Cellular Biology and Anatomy, they

focused on a system that could yield better transgenic delivery, during which a gene taken from the genome of one organism is introduced into the genome to another by artificial techniques.

The LSUHSC-S study also provided important information regarding the feasibility of using adult bone marrow-derived stem cells as vehicles for delivering therapeutic genes to the brain.

Noting that "the Pfund grant helped us to generate a large quantity of preliminary data from the project," Dr. Duan adds that he has since been the recipient of five grants totaling \$270,000. He has also made 11 presentations on the research, four of which were at national conferences and one to an international audience.