

UWM Research Foundation Research Fellows Award Winners

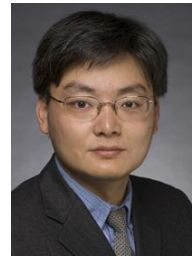


Research Fellow Awards – Fall 2009

In November 2009, the UWM Research Foundation selected eight new Research Fellow awards in the second round of the program. These awards span a range of disciplines, recognize both junior and senior faculty, and help foster the growth of important research clusters at UWM.

Sponsoring PI: **Zhen (Jason) He**, Ph.D., Assistant Professor, Civil Engineering and Mechanics
Research Fellow: Ph.D student to be recruited in spring 2010
Research Area: **Microbial Fuel Cells**

Zhen (Jason) He's research focuses on the development of microbial fuel cell (MFC) technology for simultaneous bio energy production and biological wastewater treatment. His work lies at the crossroads of microbiology, engineering and electrochemistry. Dr. He joined UWM's College of Engineering and Applied Science in the fall of 2009 as part of a cluster of researchers working in the energy area. The Research Fellow award will help him recruit a PhD student in the competitive area of energy research. He has already filed an invention disclosure with the UWM Research Foundation and is in active discussions with a company interested in collaborating on his work.



Zhen He

Sponsoring PI: **Vincent Larson**, Ph.D., Associate Professor, Mathematical Sciences
Research Fellow: **Brian Griffin**, Ph.D. student and UWM undergraduate alumni
Research Area: **Atmospheric Sciences – Numerical Modeling of Clouds and Turbulence**

Dr. Larson's research group works in atmospheric sciences, specifically numerical modeling of clouds and turbulence. He is among the best funded researchers in the Department of Mathematical Sciences. His strong record of support, from sources that include the National Science Foundation (NSF) and the National Oceanographic Atmospheric Administration (NOAA), demonstrates the strength of his fundamental research. Other academic centers have demonstrated the commercial potential for work of this sort where improved forecasting accuracy can have significant economic impact on energy trading. However, this award, the first award of any kind made by the UWM Research Foundation to UWM's Department of Mathematical Science, represents an investment in a nationally-recognized researcher with a strong potential to bring significant future sponsored research support to UWM.



Vince Larson

Sponsoring PI: **Sandra McLellan**, Ph.D., Associate Scientist, Great Lakes WATER Institute, School of Freshwater Sciences
Research Fellow: **Ryan Newton**, Ph.D. Post-Doctoral Research Associate
Research Area: **Genetics Signatures to Pinpoint Pollution Sources**

Sandra McLellan's research focuses on the impacts of pollution from urban areas on the Great Lakes including the use of genetic signatures to pinpoint pollution sources. She is among a strong cluster of water related researchers at UWM's WATER Institute that will form a research core in the new School of Freshwater Sciences. The UWMRF Research Fellow award will help Dr. McLellan to recruit Ryan Newton as a post-doctoral research assistant. Dr. Newton has expertise in natural freshwater bacterial communities and the implementation of novel ecological statistics. This expertise will help the McLellan lab to pursue significant funding from the National Institutes of Health (NIH) from an R01 grant.



Sandra McLellan

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Sponsoring PI: Christopher Quinn, Ph.D., Assistant Professor, Department of Biological Sciences
Research Fellow: Yan Xu, Ph.D., Post-Doctoral Research Associate
Research Area: *Axon Guidance – Neural Circuit Formation Processes that may underlie Autism and Down Syndrome*

Christopher Quinn is a new assistant professor in the Department of Biological Sciences. His research is focused on axon guidance, a key step in the formation of neural circuits. Failures in this process may underlie mental and neurological disorders such as Autism and Down Syndrome. He is part of a cluster of new researchers in biological sciences and chemistry who have joined UWM to enhance healthcare research in the area of drug discovery. Dr. Quinn has identified a highly qualified post doctoral researcher, Dr. Yan Xu, who will conduct experiments defined in a small NIH grant; this important preliminary data will be critical to the success of a future, much larger, NIH R01 grant application.

Sponsoring PI: Mahsa Ranji, Ph.D., Assistant Professor, Electrical Engineering and Computer Science
Research Fellow: Ph.D. student to be recruited in spring or fall 2010
Research Area: *Noninvasive Optical Tissue Diagnostics Tools*

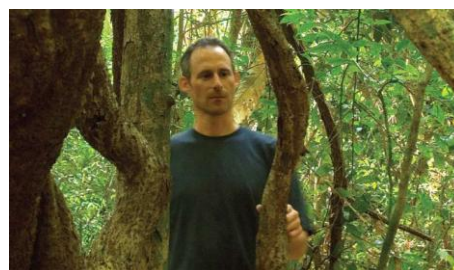
Mahsa Ranji is a new researcher in UWM's College of Engineering and Applied Science; she has joined UWM as part of a cluster of researchers focused on biomedical research. Dr. Ranji's background is in optics and electromagnetics and their applications to biomedical sciences. The main focus of her work is biophotonics, in particular fluorescence spectroscopy, microscopy and imaging as noninvasive tissue diagnostic tools. Dr. Ranji intends to use the Research Fellow award to recruit a UWM undergraduate engineering student to join her laboratory.



Mahsa Ranji

Sponsoring PI: Stefan Schnitzer, Ph.D., Assistant Professor, Department of Biological Sciences
Research Fellow: S. Mangan, Ph.D., Post-Doctoral Research Associate
Research Area: *Species Diversity – a Driver for Carbon Budgets and Climate Change*

Dr. Schnitzer's research relates to species diversity in ecological systems which drives ecosystem productivity and relates directly to global carbon budgets and climate change. His research program has been highly productive, generating over \$2 million in external funding and 27 peer-reviewed papers since 2004. This is the first award by the UWM Research Foundation to recognize a biological sciences researcher working in ecological systems. It acknowledges the strength of the PI's research program and the potential for bringing in significant future support as well as the importance of basic science that leads to understanding of climate change. This award will help Dr. Schnitzer to retain Dr. S. Mangan, a post-doctoral researcher who will help pursue important funding from the National Science Foundation (NSF).



Stefan Schnitzer, recent recipient of an NSF Early Career Development Award

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Sponsoring PI: Vladislav Yakovlev, Ph.D., Professor, Physics
Research Fellow: Ph.D. student to be recruited in spring 2010
Research Area: *Spectroscopic Tools for Biology and Medicine*

Vladislav Yakovlev's research program is focused on applying advanced optical spectroscopy tools to study fundamental problems in biology and medicine. As a physicist, he brings a basic understanding of spectroscopy techniques, including nonlinear Raman spectroscopy, to the development of practical tools for studying large populations of biological cells, continuous evaluation of water quality and understanding of the interaction between cells and pharmaceuticals. Dr. Yakovlev has disclosed several innovative ideas to the UWM Research Foundation, and his work may lead to patentable devices for medical diagnostics. This Research Fellows award will help Dr. Yakovlev to recruit a Ph.D. level graduate student to work in his research program.

Sponsoring PI: Lei (Leslie) Ying, Ph.D., Associate Professor, Electrical Engineering and Computer Science
Research Fellow: Dong Liang, Ph.D., Post-Doctoral Research Assistant
Research Area: *Improving the Speed of MRI*

Lei (Leslie) Ying's research program is a systematic effort to address the long-standing issue of low imaging speeds in Magnetic Resonance Imaging (MRI) to enable emerging applications such as cardiac imaging, functional imaging, and dynamic contrast-enhanced cancer imaging. She has a demonstrated record of funding from the National Science Foundation (NSF) and the National Institutes of Health (NHI) as well as industry. In addition, her work is the subject of four patent applications through the UWM Research Foundation. The Research Fellow award will help retain Dr. Dong Liang, a post-doctoral researcher working with Dr. Ying who will continue to help collect data to validate her innovative techniques and provide preliminary data for upcoming grant applications.



Lei Ying