West Virginia Experimental Program to Stimulate Competitive Research

DIRECTORY OF RESEARCH INFRASTRUCTURE IMPROVEMENT (RII) PARTICIPANTS

2010-2015

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PRINCIPAL INVESTIGATORS

SENIOR PERSONNEL
MARSHALL UNIVERSITY

Brian Antonsen, Ph.D.
Assistant Professor, Biological Sciences

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Dr. Antonsen's research focuses on how an animal's experience changes its nervous system and subsequent behavior.

Eric Blough, Ph.D.
Associate Professor, Biological Sciences

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Dr. Blough's research is focused on using nanotechnology to develop new means to diagnose, monitor and treat chronic disease.

Tina Cartwright, Ph.D.
Assistant Professor, Education

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Dr. Cartwright is working to increase the representation and advancement of women and minorities in academic science and engineering careers.

Michael L. Norton, Ph.D.
Professor, Chemistry

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Dr. Norton's laboratory focuses on self-organized optoelectronic chemical sensors using molecular lithography to detect threat agents in the environment.

F. Robin O'Keefe, Ph.D.
Associate Professor, Biological Sciences

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Robin O'Keefe is a vertebrate paleontologist and evolutionary biologist who studies how animal shape changes over time in response to developmental, evolutionary and abiotic forces.

Elmer M. Price, Ph.D.
Professor and Chair, Biological Sciences

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Dr. Price's research involves the study of cellular differentiation and function, focusing on neural stem cells and vascular cells, with the goal of developing novel therapies and detection methods.

Gary E. Schultz, Ph.D.
Assistant Professor, Biological Sciences

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Dr. Schultz is exploring the diversity of the bacterial community in various ecosystems, including the Ohio and Guyandotte Rivers, to learn how to better understand and manipulate ecosystems.

Wendy C. Trzyna, Ph.D.
Associate Professor, Biological Sciences

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Dr. Trzyna's research focuses on how microbes respond to and tolerate various stresses in diverse environments, leading toward an understanding of how single cells accommodate stressful conditions.

Bin Wang, Ph.D.
Assistant Professor, Chemistry

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Dr. Wang's research is focused on RNA structural determination and RNA nanotechnology that ultimately could be used in hand-held sensors to improve threat detection.

MARSHALL UNIVERSITY

SENIOR PERSONNEL
WEST VIRGINIA STATE UNIVERSITY

Sean Collins, Ph.D.
Assistant Professor, Biology

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Dr. Collins is investigating the impacts of local environmental factors on the distribution and genetic diversity of salamanders. Ultimately, he plans to assess the influence of altered distributions on patterns of gene expression.

Gerald R. Hankins, Ph.D.
Associate Professor, Biology

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Dr. Hankins is investigating the alteration between different tissue types during cell differentiation; this may eventually help us understand how to engineer new tissue for medical treatments.

Tim Ruhnke, Ph.D.
Professor, Biology

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Dr. Ruhnke investigates the biodiversity, taxonomy and molecular systematics of marine tapeworms and is interested in further understanding their relationships and co-evolution with their host animals. His research will lead to a better understanding of how the parasitic way of life is maintained in nature.

WEST VIRGINIA STATE UNIVERSITY

SENIOR PERSONNEL
WEST VIRGINIA UNIVERSITY

Jeffrey Carver, Ed.D.
Assistant Professor, Curriculum and Instruction/Literacy Studies
Adjunct Professor, Chemistry

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Dr. Carver's research focuses on how a summer research experience can impact the use of inquiry-based instructional methods for teaching and learning in the middle and high school science classroom.

Jeremy Dawson, Ph.D.
Research Assistant Professor, Computer Science and Electrical Engineering

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Dr. Dawson is developing sensor devices that will enable rapid DNA-based identification of humans and harmful biological materials.

Cerasela Zoica Dinu, Ph.D.
Assistant Professor, Chemical Engineering

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The successful completion of Dr. Dinu's work will lead to novel tools that integrate nanotechnology with biology, advanced technology and electrochemistry in applications for homeland security, medical diagnostics and environmental protection.

Feruz Ganikhanov, Ph.D.
Assistant Professor, Physics

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Dr. Ganikhanov's research involves nonlinear microscopy and micro-spectroscopy with an access to inter- and intra-molecular interactions.

Peter M. Gannett, Ph.D.
Robert C. Byrd Distinguished Professor of Medicinal Chemistry, School of Pharmacy

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Dr. Gannett is building sensors from DNA and proteins to detect environmental toxins.

Lisa Holland, Ph.D.
Associate Professor, Chemistry

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Dr. Holland focuses on microchannel separations of biological molecules to support rapid and portable screening of environmental contaminants as well as DNA-based identification of humans and pathogens.

David Lederman, Ph.D.
Robert C. Byrd Professor and Robert L. Carroll Chair Professor of Physics

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Dr. Lederman is technical principal investigator of the RII project. His research focuses on magnetic interfaces and nanostructures, as well as bioelectronic devices with a goal of developing electronics that are faster and have increased data storage capabilities.

James P. Lewis, Ph.D.
Associate Professor, Physics

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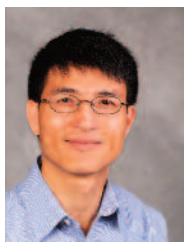
Dr. Lewis' research group uses computational materials science methodologies they developed to understand and develop nanomaterials.



Bingyun Li, Ph.D.
Associate Professor, Orthopedics

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http://www.hsc.wvu.edu/som/ortho/Nanomedica-Group/

Dr. Li's research focuses on nanotechnology and nanomedicine that may lead to improved health and environmental safety.

Yuxin Liu, Ph.D.

Assistant Professor, Computer Science and Electrical Engineering

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Dr. Liu's research focuses on a multi-disciplinary approach to develop microfluidic and lab on chip-based biosensors and bioreactors with the goal of controlling cell behavior and understanding the impacts and effects of environmental stressors on cells.

Slawomir Lukomski, Ph.D.

Associate Professor, Microbiology, Immunology and Cell Biology

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Dr. Lukomski's research is focused on the development of polymerase chain reaction-based methods for detection of microorganisms.

Paul Miller, Ph.D.

Teaching Assistant Professor, Physics

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Dr. Miller's research looks at incorporating peer-led active learning strategies in large lecture physics courses to improve student learning. Early teaching experiences are also used to recruit future high school physics teachers.

Betsy Ratcliff, Ph.D.

Teaching Assistant Professor, Chemistry

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http://laprogram.wvu.edu/

Dr. Ratcliff's research focuses on the impact of active learning strategies and peer-led study groups on student learning and student retention.

Yon Rojanasakul, Ph.D.

Robert C. Byrd Professor
Pharmaceutical and Pharmacological Sciences

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Dr. Rojanasakul's research focuses on the cellular and molecular mechanisms of carcinogenesis and biosafety of nanomaterials.

Letha J. Sooter, Ph.D.

Assistant Professor, School of Pharmacy

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Dr. Sooter is working to develop biological sensors for the U.S. Military to detect and identify potential threats to soldiers and civilians, whether those threats are explosive, chemical or biological.

Eva Erdosne Toth, Ph.D.

Assistant Professor, Science Education

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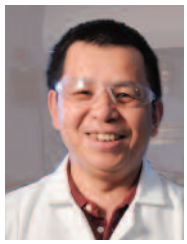
Dr. Toth's research and teaching is focused on ethical/socio-scientific issues that nano-biotechnology brings about for our society, our scientists and teachers. She teaches a course on this for RII-TREK teachers and graduate fellows in science and engineering.



Nianqiang "Nick" Wu, Ph.D.

Associate Professor, Mechanical and Aerospace Engineering

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One of Dr. Wu's research areas is to develop portable sensors for detection of environmental toxic contaminants and for early diagnosis of diseases.

WEST VIRGINIA UNIVERSITY