NEW FACULTY BRING RESEARCH EXPERIENCE

Steven Chemtob  
**ASSISTANT PROFESSOR, EARTH & ENVIRONMENTAL SCIENCE**

Steven Chemtob uses a variety of analytical techniques to study mineral coatings on recent volcanic formations, geochemical controls in oceans and river waters, and environments of rock alteration on Mars. He received his PhD from the California Institute of Technology in 2012 and went on to a NSF postdoctoral fellowship at Washington University in St. Louis. His work has been published in *American Mineralogist, Journal of Geophysical Research* and *Journal of Volcanology and Geothermal Research*.

Atsuhiro Muto  
**ASSISTANT PROFESSOR, EARTH & ENVIRONMENTAL SCIENCE**

Atsuhiro Muto has spent six seasons in the challenging environment of Antarctica, including a 65-day long traverse to the South Pole. In 2011, he received the Antarctica Service Medal of the United States of America. He has more than a dozen journal articles published and several more accepted for publication. Muto received his PhD from the University of Colorado. Prior to coming to Temple, he taught at the Pennsylvania State University.

Masatoshi Nei  
**LAURA H. CARNELL PROFESSOR OF BIOLOGY**

Masatoshi Nei has been a major contributor to population and evolutionary genetics theory throughout his distinguished career. He is one of a select few to have a statistic named for him, and “Nei’s genetic distance” is a cornerstone of population genetic analyses. His many awards include the Kyoto Prize in Basic Sciences, in 2013, and the Thomas Hunt Morgan Medal, Genetics Society of America. Before coming to Temple, he was Evan Pugh Professor of Biology at Pennsylvania State University and director of the Institute of Molecular Evolutionary Genetics.

Sergei Kosakovsky Pond  
**PROFESSOR, BIOLOGY**

Sergei Kosakovsky Pond is internationally recognized for research in computational biology, next-generation sequencing analysis and as creator of scientific and biomedical software. Before he was associate professor in residence in the Department of Medicine at the University of California San Diego, Pond received his doctorate in applied mathematics from the University of Arizona. He is currently participating in three active NIH grants.

Sean Gillian Queisser  
**ASSOCIATE PROFESSOR, MATHEMATICS**

Sean Queisser has helped to pioneer detailed computational modeling and simulation for investigating the structure-function interplay in biological systems. His research has shown that cells and organelles alter their morphology in order to adapt their computational properties for long-term information storage. Before coming to Temple, Queisser was an assistant professor at the Goethe University Frankfurt and an independent research group leader at the University of Heidelberg.

Yugang Sun  
**ASSOCIATE PROFESSOR, CHEMISTRY**

Yugang Sun comes to Temple from the Center for Nanoscale Materials at the Argonne National Laboratory. In Thomson Reuters’ *Highly Cited Researchers 2014* he is listed as both a materials scientist and a chemist. His research focuses on developing novel approaches for synthesis of a range of nanostructures including metal nanoparticles with well-controlled morphologies and metal/semiconductor nanocomposites with multiple functionalities. Sun has more than 100 publications in respected journals such as the *Journal of the American Chemical Society*. 
Darius Torchinsky  
**ASSISTANT PROFESSOR, PHYSICS**

As a postdoctoral fellow at the Massachusetts Institute of Technology, Darius Torchinsky’s research focused on optical pump probe and transient grating studies of high-T superconductors and surface-sensitive measurements of topological insulators. More recently, Torchinsky has turned his attention to the problem of hidden order in the heavy fermion system URu2Si2. Prior to Temple, Torchinsky was a postdoctoral scholar in physics at the California Institute of Technology. He has been published in the *Review of Scientific Instruments*.

Anduo Wang  
**ASSISTANT PROFESSOR, COMPUTER AND INFORMATION SCIENCES**

Anduo Wang’s research is in the area of formal verification with applications in a wide range of computer systems, especially in the sub-area of software-defined networking. Wang received her PhD degree from University of Pennsylvania in 2013 and has since worked as postdoctoral fellow in the Department of Computer Science, University of Illinois Urbana-Champaign. Wang has more than a dozen publications in respected journals.

Qiang Zeng  
**ASSISTANT PROFESSOR, COMPUTER AND INFORMATION SCIENCES**

Qiang Zeng’s main research interest is software security, with a focus on intrusion detection, diagnosis and automated response. During a research internship at NEC Labs in fall 2012 and spring 2013, Qiang worked on a software engineering project called DeltaPath. DeltaPath was accepted by 2014 International Symposium on Code Generation and Optimization, which is a premier conference in code generation and optimization. Zeng received his PhD in 2014 from the Pennsylvania State University.

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**USING AUTONOMOUS VEHICLES TO IMPROVE TRAFFIC FLOW**

As an assistant professor of mathematics, Benjamin Seibold has been awarded a three-year, $1 million grant from the National Science Foundation’s Division of Computer and Network Systems to investigate how autonomous vehicles—likely to officially debut on America’s roadways within the decade—might assist with traffic flow and fuel consumption.

“These vehicles collect a lot of data about the environment around them in order to operate safely, and in principle, data can be communicated from one vehicle to another,” says Seibold, whose research involves traffic-flow modeling.

By synchronizing autonomous vehicles so that they can communicate and share certain types of information—such as traffic density and flow velocity—with each other, the vehicles could react in a way that alters the flow of traffic on the highway.

“Traffic that’s about to run into a jam could be slowed down by these autonomous vehicles in a subtle way, perhaps maybe just two miles an hour under the speed limit, so that it’s not a big nuisance to the rest of the drivers,” Seibold says. “This could, for example, help dissipate stop-and-go waves in the traffic flow and prevent prolonging the traffic jam ahead.”

With autonomous vehicles keeping traffic flow at a controlled velocity or reducing the speed of traffic to avoid prolonged jams, all cars on the road will use less gasoline. “If you consider the amount of fuel that is wasted every day because of people being stuck in traffic or having to drive at an unsteady velocity due to unpredictable driving behaviors, being able to reduce that consumption by as much as 1 percent would have a tremendous economic and environmental impact,” says Seibold.

—Preston Moretz