



Congressional Fellows Povlich and Nekuda Malik shape their interests in policy

www.mrs.org/congressional-fellows



Laura Povlich



Jennifer Nekuda Malik

Last Fall, the Materials Research Society (MRS), along with co-sponsors the Optical Society of America (OSA) and The Minerals, Metals & Materials Society (TMS), selected their 2011–2012 Congressional Science and Engineering Fellows. **Laura Povlich**, a recent graduate of the University of Michigan and current MRS/OSA Congressional Fellow, has been serving in US Representative Sander Levin's office. **Jennifer Nekuda Malik**, a former postdoctoral researcher at Imperial College London and current MRS/TMS

MRS

Congressional Fellow, has been serving on the US Senate Energy and Natural Resources Committee under Chair Jeff Bingaman. The fellows' tenures began last September.

Povlich's interest in science policy began with her desire to learn about the funding, development, and regulation of emerging and sometimes controversial technologies, such as nanotechnology from the toxicological standpoint. She said, "I am intrigued by the balancing act involved in regulating a new technology without stifling scientific innovation." She accepted a position with Rep. Levin (Dem.-Mich), who is the ranking member of the House Committee on Ways and Means, the chief tax-writing committee.

Since starting her fellowship, Povlich has developed a passion for health-care policy and enjoys learning about the intricacies of Medicare—government-funded health insurance for people over 65—and health care reform implementation. Relating to her experience so far, she said, "It's fascinating not only to see how health research is funded, but also the relationship that this research has with actual care by physicians and eventually improved health outcomes. It's very satisfying to work with groups

with a wide variety of interests in health care and to develop a broad view on the entire system."

Povlich received her PhD degree in macromolecular science and engineering at the University of Michigan—Ann Arbor in 2011 as a Rackham Merit Fellow and an NIDCR Tissue Engineering and Regeneration Training Grant recipient. Her thesis work involved the development of new conducting polymers to interface neural prosthetic devices with nervous tissue. In 2009, Povlich moved to the University of Delaware and finished her PhD research as a visiting scholar.

Nekuda Malik accepted a position with the Senate Energy and Natural Resources Committee, which has recently been concentrating on legislation regarding clean energy for electricity generation, nuclear-waste storage, and legislation affecting a reliable domestic supply of molybdenum-99, the parent isotope for technetium-99m, used for medical diagnoses. From her experience working at Imperial College in London, Nekuda Malik increased her awareness of how important US public policy is on a global scale, saying, "the scientific and environmental policies adopted by Congress are widely followed from abroad."

She is particularly interested in science outreach as well as development of energy policy. With these interests, it is fitting that Nekuda Malik is working on the Senate Energy and Natural Resources Committee where she has a portfolio that includes technology transfer, solar energy, offshore wind energy, nuclear energy and rare isotopes, high-performance computing, advanced manufacturing, and Department of Energy programs and oversight. "Energy is one of the most pressing issues facing our world today—it has been an amaz-

ing experience to work on this important issue and learn so much about the ways we are working as a nation to pursue the energy solutions of the future," said Nekuda Malik of her experience so far.

Nekuda Malik received her PhD degree in metallurgy and materials engineering from the Colorado School of Mines (CSM) in 2008. Her thesis work was a collaborative project between CSM and the National Renewable Energy Laboratory (NREL) that focused on development and optimization of deposition and processing conditions for liquid-based precursors for copper-indium-gallium-diselenide (CIGS) photovoltaics. While working on her PhD, Nekuda Malik earned both an R&D 100 Award and recognition for Excellence in Technology Transfer for her work with hybrid CIGS. Following graduation, Nekuda Malik worked as a postdoctoral researcher at Imperial College London, characterizing and optimizing the microstructure of both hybrid (organic–inorganic) and organic materials for electronic applications.

The fellows' terms will end on August 31, 2012.

Congratulations to the 2012 MRS Fellows



The title of MRS Fellow honors MRS members who are notable for their distinguished research accomplishments and their outstanding contributions to the advancement of materials research worldwide.

Doron Aurbach

Bar Ilan University

For pioneering research in nonaqueous electrochemistry that has led to the development of novel electrodes and electrolytes, and advanced power sources, including innovative Li/Mg-based rechargeable batteries

Phaedon Avouris

IBM Research, T.J. Watson Research Center

For a profound impact on the understanding of the physics, chemistry, and electronic applications of nanoscale materials—in particular, carbon nanotubes, graphene, and semiconductor surfaces

Herbert S. Bennett

National Institute of Standards and Technology

For seminal contributions to computational materials science, theory of materials, and international standards

David G. Cahill

University of Illinois

For the pioneering development of measurement techniques and scientific understanding of thermal transport in materials at nanometer length scales

Yves J. Chabal

University of Texas at Dallas

For the development and application of fundamental surface infrared spectroscopy to silicon surface reactions of importance to the microelectronics and energy industries

Bruce Dunn

University of California, Los Angeles

For extraordinary contributions to development of new materials based on sol-gel chemistry; synthesis, characterization, and development of electrochemical materials; design, materials, and fabrication processes for three-dimensional battery technology

Peter Fratzl

Max Planck Institute of Colloids and Interfaces

For pioneering and exceptional contributions in biomaterials, biomimetics, osteoporosis research, and composite materials; dedicated commitment to the materials science community

William W. Gerberich

University of Minnesota

For exceptional research on the deformation, fracture, and reliability of materials across length scales; years of mentoring and leadership in the materials community

Amit Goyal

Oak Ridge National Laboratory

For pioneering research and seminal contributions to the field of high-temperature superconductors, from fundamental materials science advances to technical innovations that enable large-scale commercialization

Mark C. Hersam

Northwestern University

For pioneering research on the fundamentals and applications of nanoelectronic materials, including the development of methods for sorting carbon nanotubes and graphene; chemical functionalization of semiconductor surfaces

Alex K.-Y. Jen

University of Washington

For pioneering the synthesis of processible conjugated polymers; a seminal role in developing organic photonic and electronic materials for highly efficient information processing and energy-related applications

Kevin S. Jones

University of Florida

For pioneering contributions to the field of ion implantation damage in semiconductors; dedicated service to the Materials Research Society

Lionel C. Kimerling

Massachusetts Institute of Technology

For elucidating the role of defects in controlling semiconductor properties; achievements in on-chip optoelectronic integration; distinguished leadership in the materials community

Jun Liu

Pacific Northwest National Laboratory

For distinguished and sustained contribution to the development, understanding, and controlled synthesis of self-assembled, functional nanostructured materials, and their applications in energy and environmental sciences

C. Mathew Mate

Hitachi Global Storage Technologies

For pioneering research in the field of nanotribology; seminal contributions in elucidating the atomic and molecular origins of friction and lubrication in material systems

Amiya K. Mukherjee

University of California, Davis

For outstanding research contributions in elevated temperature deformation, creep and superplasticity of engineering materials, and mechanical behavior of nanostructured materials; leadership in engineering education and practice

Christopher Murray

University of Pennsylvania

For innovations in the synthesis of nanomaterials with precisely controlled dimensions by chemical approaches; outstanding contributions in nanoparticle self-assembly; pioneering research in the design of nanoparticle-based devices

John Northrup

Palo Alto Research Center, Inc.

For guiding insights based on first-principles calculations of total energies and band structures related to atomic arrangements in semiconductor materials, particularly on surfaces, heterointerfaces, dislocations, and chemical defects

Christopher J. Palmström

University of California, Santa Barbara

For seminal contributions to the science and technology of heteromaterial interfaces through molecular beam epitaxy

Sokrates T. Pantelides

Vanderbilt University

For pioneering and innovative contributions to the field of point defects in semiconductors

George M. Pharr

University of Tennessee and Oak Ridge National Laboratory

For seminal and sustained contributions to the field of small-scale mechanical behavior of materials; distinguished leadership in the materials community

Fan Ren

University of Florida

For the development of advanced semiconductor processing techniques

Clément Sanchez

Collège de France, Chimie de la Matière Condensée de Paris
Université Paris VI-CNRS

For pioneering contributions to the materials chemistry of transition metal oxides based solids and the development of the field of designed organic/inorganic hybrid materials prepared from functionalized nanobuilding blocks

Susan Sinnott

University of Florida

For significant contributions and advances in using atomistic computational methods to investigate mechanical behavior and chemical modification of nanomaterials and ion-beam modification of polymer surfaces

Helena Van Swygenhoven

Paul Scherrer Institute
and École Polytechnique de Lausanne

For pioneering contributions in using a combination of large-scale atomistic simulations and elegant experiments to reveal the mechanisms of plastic deformation in metals with nanocrystalline grain sizes

Patricia Thiel

Iowa State University and the Ames Laboratory

For seminal contributions to understanding the structure, reactivity, and tribology of quasicrystal surfaces, and to understanding growth and stability of metal nanostructures and metal thin films

Richard Vaia

Air Force Research Laboratory

For many seminal contributions to the science and technology of polymer nanocomposites and exceptional leadership and advocacy of materials research in the U.S. defense sector and the Materials Research Society

C. Grant Willson

University of Texas, Austin

For leadership in advancing the state-of-the-art for polymeric materials through innovative research, collaborative spirit, and dedication to material science