

## Cowern, Diaz de la Rubia, Mirkin, and Volkert Chair 2001 MRS Spring Meeting



Nicholas Cowern



Tomas Diaz de la Rubia



Chad A. Mirkin



Cynthia Volkert

Nicholas Cowern (Philips Research Laboratories), Tomas Diaz de la Rubia (Lawrence Livermore National Laboratory), Chad A. Mirkin (Northwestern University), and Cynthia Volkert (Max-Planck-Institute—Stuttgart) will chair the 2001 Materials Research Society Spring Meeting on April 16–20 in San Francisco.

The Meeting will include 33 symposia as well as tutorials, a plenary session, and the equipment exhibit. The scientific sessions are organized into clusters, presenting new and developing areas of materials science as well as some well-established and popular topics. The clusters include electronic materials, microelectronics, thin films and surface phenomena, data storage, and nano- and biomaterials.

**Nicholas Cowern** received his BA degree with honors in physics in 1975, and his MA and DPhil degrees in 1980, from the University of Oxford, England. His doctoral work, carried out at the U.K.A.E.A. Harwell Laboratory, focused on statistical phenomena in the energy loss of charged particles in solids. In 1984 Cowern joined the Joint European Torus project where he developed computer simulations of neutral-beam heating and methods for optical diagnosis of beam-plasma interactions. From 1985 to 1986 he was employed by the General Electric Company, Hirst Research Centre, in Wembley, England where he was responsible for developing advanced techniques and computer modeling for ion implantation, dopant diffusion, and oxidation processes used in the fabrication of silicon and silicon-on-insulator devices. In 1987 he joined the Philips Center for Manufacturing Technology and since 1991 has been a senior scientist at the Philips Research Laboratories in Eindhoven, The Netherlands. In addition to his duties at Philips, he was appointed Adjunct Professor of Semiconductor Physics at

Aarhus University, Denmark, in 1997, and Visiting Professor at the Department of Engineering Materials, Southampton University, in 1999.

Cowern's recent work involves the development of models for defect-coupled dopant diffusion and transient enhanced diffusion for use in the Suprem4 simulation program, in collaboration with the software firm Avant! in California. His current research interests include experiments, theory and computer modeling of diffusion phenomena in silicon, and SiGe and related materials used in advanced semiconductor devices. He is the author or co-author of 80 reviewed scientific publications and the editor or co-editor of two books on diffusion and semiconductor processing.

**Chad A. Mirkin** is the George B. Rathmann Professor of Chemistry Director of the Center for Nanofabrication and Molecular Self-Assembly at Northwestern University. His research interests include materials chemistry dealing with inorganic nanoparticles and DNA, synthetic organometallic chemistry, electrochemistry, coordination chemistry, surface modification methods, atomic force microscopy, synchrotron x-ray methods, and ligand design. Mirkin is the author of over 100 manuscripts, six patents, and has received many awards including the MRS Outstanding Young Investigator Award, the American Chemical Society Award in Pure Chemistry, the PLU Fresenius Award, the E. Bright Wilson Prize, the BFGoodrich Collegiate Inventors Award, a Camille Dreyfus Teacher-Scholar Award, a Beckman Young Investigator Award, an Alfred P. Sloan Foundation Fellowship, a Dupont Young Professor Award, an NSF Young Investigator Award, a Naval Young Investigator Award, and a Camille and Henry Dreyfus Foundation New Faculty Award. Mirkin also consults for

several major chemical companies.

Mirkin received his BS degree in chemistry in 1986 from Dickinson College and his PhD degree in chemistry in 1989 from Pennsylvania State University. He was a National Science Foundation Postdoctoral Fellow in chemistry from 1989 to 1991 at the Massachusetts Institute of Technology.

**Tomas Diaz de la Rubia** is the Deputy Division Leader for Science in the Materials Science and Technology Division at Lawrence Livermore National Laboratory. He received his BS degree *Summa Cum Laude* in physics at the State University of New York at Albany in 1984 and his PhD degree also in physics in 1989. He was awarded the Anne R. Olivier memorial scholarship, the SUNY presidential awards for academic excellence and excellence in research, and the Graduate Presidential Fellowship. He carried out his thesis research in the Materials Science Division at Argonne National Laboratory and in the Materials Science Department at the University of Illinois at Urbana-Champaign under the direction of R.S. Averback. Diaz de la Rubia joined LLNL as a Postdoc in 1989 and worked on materials issues for the fusion program before joining the Chemistry and Materials Science Directorate as a staff member in 1992. Between 1994 and 1996 he focused his research activities around the development of physics-based predictive process models for semiconductor manufacturing in collaboration with Bell Labs, Intel, Applied Materials, IBM, and other large semiconductor corporations. Since that time, he has been involved in the development of multiscale models of materials strength and aging in irradiation and other far from equilibrium environments. In 1999 he became Scientific Capability Leader for Computational Materials Science. His computational group currently has 16 members carrying


out computational materials research in close collaboration with experimentalists on a wide variety of topics.

Diaz de la Rubia has published over 100 peer-reviewed articles in the scientific literature; has chaired numerous international conferences and workshops, including the Gordon Research Conference on Materials Processes Far From Equilibrium and several MRS symposia; and has edited several conference proceedings and special journal issues. He belongs to the editorial board of five major scientific journals, is vice chair of the American Physical Society's selection panel for the Rahman prize in computational physics, and has served in numerous national and international panels. His research interests are in the area of applications of large-

scale computing to materials science problems and the methodologies required for experimental validation. Specifically, he is interested in the development of predictive tools for semiconductor processing, and of multiscale approaches to describe properties and performance of materials far from equilibrium.

**Cynthia Volkert** is presently a group leader at the Max-Planck-Institut für Metallforschung in Stuttgart, Germany where she supervises studies in microstructure and electromigration in metal thin films. She received a Bachelors degree in physics from McGill University in 1982, and a PhD degree from Harvard University in 1988 where she worked on structural relaxation and flow in metallic glasses. She then spent 10 years as a staff member at Bell

Laboratories, Lucent Technologies, where her research included various experimental and theoretical aspects of the effects of ion irradiation on semiconductors, strain relaxation in heteroepitaxial films, stress effects on optical properties of glasses, mechanical properties of metal thin films, and electromigration.

Volkert has published over a hundred scientific papers in the field of thin films. She has also written several review papers, given dozens of invited talks, edited five books, and holds a number of patents. She has served on the National Research Council and is presently a consultant to Bell Labs. In addition to involvement in several MRS committees over the years, Volkert has served as an organizer for three symposia at MRS meetings. 

## MRS Featured Volunteer

*Bob Reeber*

**What is your favorite element?**

Carbon

**What do you read first in MRS Bulletin?**

Last page.

**What was the last book you read?**

Science fiction.

**What inspired you to be a materials researcher?**

My grandfather was a blacksmith.

**What did you first do as an MRS volunteer?**

Organized smart materials session three years ago.

**What is your Motto?**

Read and use the literature.

**If you were not a materials researcher, what would you be?**

Gardener; farmer.

**What common household item do you use in your lab?**

Fingernail polish remover (acetone substitute).



*Bob Reeber at work in his livingroom office...*



*...and resting after reading an especially complicated paper.*

**Bob Reeber** works for the Materials Science Division of the U.S. Army Research Office in North Carolina. He has presented his research at MRS Meetings, most recently in Symposium T on Wide-Bandgap Electronic Devices at the 2000 MRS Spring Meeting in San Francisco.

To contribute to **MRS Featured Volunteer**, send in your responses to the questions to *MRS Bulletin*, 506 Keystone Drive, Warrendale, PA 15086-7573, USA; fax 724-779-8313; e-mail Bulletin@mrs.org. Include your name, volunteer activity, address, fax, and e-mail.

**The Materials Gateway: [www.mrs.org](http://www.mrs.org)**

## MRS NEWS

## Susan Ginsberg Appointed 2000–2001 OSA/MRS Congressional Fellow

Susan Ginsberg, a graduate research and teaching assistant at the University of Minnesota in the Departments of Chemical Engineering and Materials Science and of Geology and Geophysics, has been named the 2000–2001 OSA/MRS Congressional Science and Engineering Fellow. Her tenure begins in September, immediately following her PhD defense in materials science scheduled in August. As a recipient of this one-year appointment sponsored jointly by the Optical Society of America and the Materials Research Society, Ginsberg will work directly for a member of Congress or on a Congressional committee as a consultant on scientific and technical matters.

Matthew L. Puglisi, Government Relations Manager at OSA, said, "There's no better way for policy makers to gain an appreciation for science than to interact on a daily basis with scientists. We can't get most policy makers into the lab, so the OSA/MRS Congressional Fellowship brings the scientists to Capitol Hill."

Already serving as an intern for State House Representative Betty Folliard, Ginsberg helps develop legislation to reduce air toxics in Minnesota. She meets with numerous lobbying groups as well as House and committee leadership on various sides of the issue. She said that one of the most important functions of a Congressional Science Fellow is to act as a facilitator for discussion between scientists and legislators.

"I see the Fellow as an emissary to pro-



Susan Ginsberg

mote respect for science in the legislature," she said. "We need people in Washington who will point out that the scientific process is, by necessity, a process of both successes and failures. It is often through a failed experiment that scientists learn the most."


Without an understanding of the scientific process, legislators may easily dismiss the importance of science, Ginsberg said.

Brian Holloway, chair of the MRS Congressional Fellowship Subcommittee and former MRS/OSA Fellow, said "I am very excited that Susan has accepted the 2000–2001 Fellowship. The Fellowship is about learning science policy while helping policy makers understand science. During the selection process Susan emphasized that she was excited about

both aspects of the Fellowship and showed the subcommittee that she had a grasp of what it would take to be successful in the dual role of scientist and legislative staffer."

Ginsberg received her BA degree in geology from Amherst and her MS degree in geophysics. An MRS member, she is also a member of the American Ceramic Society, American Geophysical Union, Association for Women Geoscientists, and the Geological Society of America. She has previously served as a research assistant in the Department of Chemical Engineering at The Technion in Haifa, Israel, and as a research scientist in the Department of Mineral Sciences at the American Museum of Natural History in New York.

The sixth recipient of this annual Fellowship, Ginsberg will contribute to the more effective use of optical and materials science knowledge in government and broaden the awareness of the value of scientist and engineer-government interaction among Society members and within the federal government. The previous Fellows sponsored jointly by MRS and OSA are Arun Seraphin (1999–2000), Merrilea Mayo (1998–1999), Brian Holloway (1997–1998), Michal Freedhoff (1996–1997), and Kelly Kirkpatrick (1995–1996).

For more information on the OSA/MRS Congressional Fellow Program, access the MRS Web site at [www.mrs.org/pa/](http://www.mrs.org/pa/). 

*Access the Materials Research Society Public Affairs Website for links to Policies in Science and Technology*

<http://www.mrs.org/pa/policy/>

**Links include:**

▼ **FYI-by Audrey Leath and Richard Jones, American Institute of Physics**

FYI summarizes science policy developments in Washington affecting the science and technology community. Summaries are approximately one page long and are issued two or more times every week. FYI subscriptions are free; they are provided by AIP as a service to the science community.

▼ **Centre for Policy Research on Science and Technology**

The Centre for Policy Research on Science and Technology at Simon Fraser University in Canada was established in 1980 to conduct focused research on the relationship between public policy, the management of technology, and innovation.

▼ **Parliamentary Office of Science and Technology (U.K.)**

POST is an office of the United Kingdom's Houses of Parliament, which is charged with providing balanced and objective analysis of the science- and technology-based issues.

▼ **The Rand Corporation**

A U.S. premier think-tank, Rand Corporation conducts public policy research and analysis, including science- and technology-related issues, for the government, industry, and other sponsors.

▼ **Technology and Innovation Policy Information Map**

An attempt to create a comprehensive listing of science, technology, and innovation policy resources on the Internet.