Merrilea J. Mayo Appointed OSA/MRS Congressional Fellow for 1998–99

Merrilea J. Mayo, associate professor of materials science and engineering at Pennsylvania State University, has been named the 1998–1999 OSA/MRS Congressional Science and Engineering Fellow. Her tenure begins in September. As a recipient of this one-year appointment sponsored jointly by the Optical Society of America and the Materials Research Society, Mayo will spend her sabbatical from Penn State working directly for a member of Congress or on a Congressional committee as a consultant on scientific and technical matters.

In line with the OSA/MRS Congressional Fellow mission of opening avenues of communication between scientists and federal legislators, Mayo expects to raise the level of political awareness within MRS and to take her familiarity with the national laboratory and university systems as well as technological concerns of the military and startup companies to Washington. Mayo said, "This past semester, I have been able to inject several science policy speakers into our department's seminar series, and I have enjoyed the eye-popping 'Wow! Really?' reactions of the students. I believe the additional access to political personalities and vivid experiences that the fellowship would afford me could only enhance this kind of exchange." She added that non-U.S. students have no access to political figures. She wants students—"the next generation of leading scientists"—to understand how federal funding "gets put through."

MRS chair of the Congressional Fellow subcommittee Bill Warren of Sandia National Laboratories commends Mayo's confidence and understanding of the political system. He said that with her dynamic enthusiasm, "she won't let things become stagnant." Mayo said in its dealings with Washington, MRS has historically acted within fairly narrow constraints of surety and prudence, but she sees opportunities that MRS can take to be more proactive.

Ivan Kaminow, OSA chair of the subcommittee and a former congressional Fellow himself, points to Mayo's variety of experiences, primarily in academia, and her record of public service. Mayo has served on the National Research Council's Advisory Panel on the National Institute of Science and Technology (NIST) and on the Advisory Committee on Army After Next (AAN) Logistics. She has also served on the MRS External Affairs and Public Affairs Committees since 1994.

Mayo is a long-time veteran of the MRS volunteer pool, including participation in the Meetings as chair and symposium organizer; in the Graduate Student Awards Subcommittee, Program Planning Committee, and Long-Range Planning Committee; and most recently as an MRS Councillor and part of the MRS Headquarters Building Task Force. She also served on a task force for the new building in which she procured materials-related, interactive exhibits on mechanical properties, diffusion, and polarization.

After receiving her PhD degree in Materials Science and Engineering in 1988 from Stanford University, Mayo worked at Sandia, then later at Penn State. Her current research focuses on developing fully dense bulk ceramics with sub-100-nm grain sizes by sinter-forging, pressureless sintering, and alternate densification routes, using a combination of experimental work and analytical modeling of the sintering/deformation processes. She has received a Fellowship from the Japan Society for the Promotion of Science (1993) and from the Exxon Foundation (1982–1984) and the NSF Presidential Young Investigator Award (1991–1996). She has over 50 authored and co-authored publications.

MRS

UPCOMING CONFERENCE

AIChE Topical Conference to be Held in November

"Applying Molecular Modeling and Computational Chemistry" will be a featured Topical Conference held at the Annual Meeting of the American Institute of Chemical Engineers (AIChE) in Miami Beach on November 15–20, 1998. The meeting is co-sponsored by the Materials Research Society and by the American Physical Society. Through computer models, engineers are finding new uses for quantum and statistical mechanics. Increasingly, properties of molecules and transition states can be calculated using *ab initio* and semi-empirical electronic structure theories. Likewise, force-based "molecular simulations"—molecular dynamics and Monte Carlo methods—are bringing qualitative and quantitative insights into the behavior of materials.

With improved computer codes, interfaces, and graphics, theory has moved gradually but steadily into applications. Advances in accuracy and speed have been dramatic, leading to routine use for ideal-gas thermochemistry, structure-based correlations of properties, new homogeneous catalysts, improved polymers, and specialty chemicals.

These methods are not panaceas. Failures have most often come for non-technical reasons, though. Choosing the right applications is crucial, as is close interaction between modelers and experimentalists.

Scientists will present 132 papers in 15 sessions using lecture and poster formats. For general interest, three plenary sessions will highlight industrial successes, cutting-edge method developments, and new educational approaches. A free introductory short course, on Sunday before the start of the meeting, will provide a brief, coordinated survey of the theories and methods. For more information, access website http://www.ecs.umass.edu/topical/.

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