

## MRS Seeks Nominees for Outstanding Young Investigator Award, 1999

The Materials Research Society is accepting nominations for the Outstanding Young Investigator Award to be announced at the 1999 MRS Spring Meeting in San Francisco. The award is intended to recognize outstanding, interdisciplinary scientific work in materials research by a young scientist or engineer.

The award recipient must also show exceptional promise as a developing leader in the materials area.

The award consists of a \$3,000 cash prize, a presentation trophy bearing a brief citation, and a certificate. Reasonable travel expenses to attend the Spring Meeting at which the award is presented

and the meeting registration fees will be reimbursed.

**The deadline for submission of nominations is October 1, 1998.** For guidelines and application forms, contact John B. Ballance, Executive Director, Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086. 

## EDUCATION EXCHANGE

### National Educators' Workshop Updates Materials Educators on Technology

In order for education to keep pace with emerging science and technology, close coordination is needed among such sectors as private industry, government laboratories, and the many levels of education. Some educators have devoted a large part of their careers seeking coordination of these sectors in order to improve both materials and basic education. The National Educators' Workshop: Update series (NEW: Update) is an on-going project to improve materials education while also offering assistance to pre-college math, science, and technology education. The various levels of support offered by technical societies<sup>1</sup> including Materials Research Society (MRS), ASM International, The Minerals, Metals & Materials Society (TMS), American Ceramic Society (ACerS), and American Society for Engineering Education (ASEE) bring together like-minded people to tackle the daunting challenges of changing curricula while working to infuse new ideas as well as providing supportive instructional strategies and teaching materials.

The activities of NEW: Update, started in 1985, focus on technical updates and laboratory experiments for materials science, engineering, and technology involving new and traditional content in the field. Participants observe demonstrations of experiments; discuss issues of materials science and engineering (MSE) with people from education, industry, government laboratories, and technical societies; and hear about new MSE developments. Half-day mini-workshops for small groups are conducted at the host laboratories. In 1996, for example, Los Alamos National Laboratory (LANL), as host, presented mini-plenary sessions that focused on technology at LANL, including a special emphasis on hydrogen as a mini-theme of the Workshop.

At the Workshop, faculty, scientists, engineers, and a few students from high

school through graduate school present materials experiments that they have developed. Before the Workshop begins, the experiments are reviewed by an international panel through the cooperation of the Council for Materials Education. Authors receive comments from the panel prior to workshops, allowing them to make necessary adjustments before the actual demonstration. Videotapes are made of the workshops, and critiques made by participants provide feedback for continual improvement of the respective experiments. The National Aeronautics and Space Administration (NASA) publishes the proceedings.

F. Xavier Spiegel of Spiegel Designs said, "The influence of NEW: Update goes well beyond the presentations and publications. Many Loyola [University] students have called upon participants and staff members for assistance in design projects, samples and sources of materials, general information, [and] advice about graduate schools, summer job opportunities, and full-time positions. Many faculty members have also received advice, samples, and invaluable assistance from the staff and participants."<sup>2</sup>

Recognizing the problem of motivating young people to pursue careers in MSE, NEW: Update has included discussion on

exemplary pre-university activities such as Adventure in Science, ASM International Education Foundation's Career Outreach Program, and several programs operated through high schools.

Over the years, about 1,500 participants have been involved in the Workshop. Presenters have offered over 350 technical papers. The workshops were rotated among Norfolk State University (NSU), NASA Langley Research Center, National Institute of Standards and Technology (NIST), Oak Ridge National Laboratory, LANL, and Boeing Airplane Company. NEW: Update 98 will be held November 1-4, hosted by Brookhaven National Laboratory, Columbia University, and the University of Stony Brook.<sup>3,4</sup>

Along with the printed proceedings, NEW: Update has produced a CD ROM of 213 experiments and demonstrations including papers published during the first 10 years of the annual workshop compendiums. The original peer-reviewed forms have been reproduced, preserving the individuality among the papers and reflecting the author's style and method. The convenience and capacity of the CD ROM have been combined with the Adobe Acrobat document format resulting in a medium for these experiments that provides better support to classroom and laboratory needs.

The Acrobat Reader enables the user to edit a paper for a particular need by digitally copying blocks of text and graphics to a clipboard, then pasting the blocks into a word processor or graphics program. For example, the user can find an experiment from the main menu and select the Table of Contents button, which illustrates the categories of experiments (see Figure 1). From this menu the user selects a category of experiments and selects the button such as the Testing & Evaluation button. When the corresponding Table of Contents appears, the user

Education Exchange highlights experiences of scientists and engineers with local schools (K-12), community programs, and university programs, along with helpful hints and resources. If you would like to share your own involvement in science education, contact *MRS Bulletin*, Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086-7573; fax 724-779-8313; e-mail [Bulletin@mrs.org](mailto:Bulletin@mrs.org).

can browse the list of authors and papers. If the exact titles of the papers or the authors are not known, then the user can utilize the Full Text Search facility to find

the papers wanted. For example, by entering "hardness" or "hardness testing" or the authors' names in the Adobe Acrobat Search window, the user quickly

finds papers on hardness (see Figure 2). A sample of a portion from the first page of Ed Widener's experiment, "It's Hard to Test Hardness" is shown in Figure 3. Through this process, users can create a composite of experiments tailored to their specific needs or setting.<sup>5</sup>

The CD, called *EMSET CD ROM*, is the result of many individuals and agencies along with those who have contributed their experiments and demonstrations to enhance materials education. NEW: Update plans to update the CD every other year, finances permitting.

JAMES A. JACOBS

*James A. Jacobs is a professor of technology at Norfolk State University. He has 35 years of teaching experiences in public schools, community colleges, and universities plus industrial training. He has developed curricula offerings at all four levels, including courses in materials science, materials and processes technology, engineering materials technology, and principles of manufacture. He has co-authored the book Engineering Materials Technology. Jacobs developed the concept and has been co-director of the National Educators' Workshop since its inception.*

### References

1. Staff, Committees, and individual members from various technical societies have supported NEW: Update in a variety of ways including publicizing the annual events, providing travel support to participants, conducting plenary sessions of important topics, featuring segments from the workshops, and continuing dialogue of curriculum reform at societies' annual conferences. In a like manner, NEW: Update has provided an effective forum for societies to dispense their ideas and information on services and products to educators.
2. *National Educators' Workshop: Update 96; Standard Experiments in Engineering Materials Science and Technology, NASA Conference Publication 3354*, compiled by J.D. Gardner, G.L. Freeman, J.A. Jacobs, and D.M. Parkin. Proceedings of a workshop held in Los Alamos, New Mexico, October 27-30, 1996; p. 133.
3. NASA, the Department of Energy, NIST, and NSU have provided major funding for these workshops. Joining in the support are ASEE, ASM International, American Society for Testing & Materials, Batelle, Pacific Northwest National Laboratory, Boeing Airplane Company, Ford Motor Company, Martin Marietta Energy Systems Inc., the Materials Education Council of the United States, and MRS.
4. For information on NEW: Update 98, contact Jim Jacobs, School of Technology, Norfolk State University, 2401 Corprew Avenue, Norfolk, VA 23504; phone 757-683-8109, 8060, or 8712.
5. To order departmental or individual copies of EMSET CD ROM, ISBN 0-13-648486-7, contact Prentice-Hall Inc., Order Processing Department 200, Old Tappan Road, Old Tappan, NJ 07675; phone 1-800-922-0579; web-site <http://www.prenhall.com/>.



Figure 1. EMSET CD ROM Table of Contents illustrating categories of experiments.

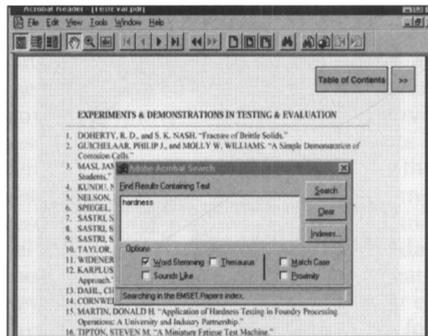


Figure 2. List of papers shown in the Adobe Acrobat Search window of EMSET CD ROM.

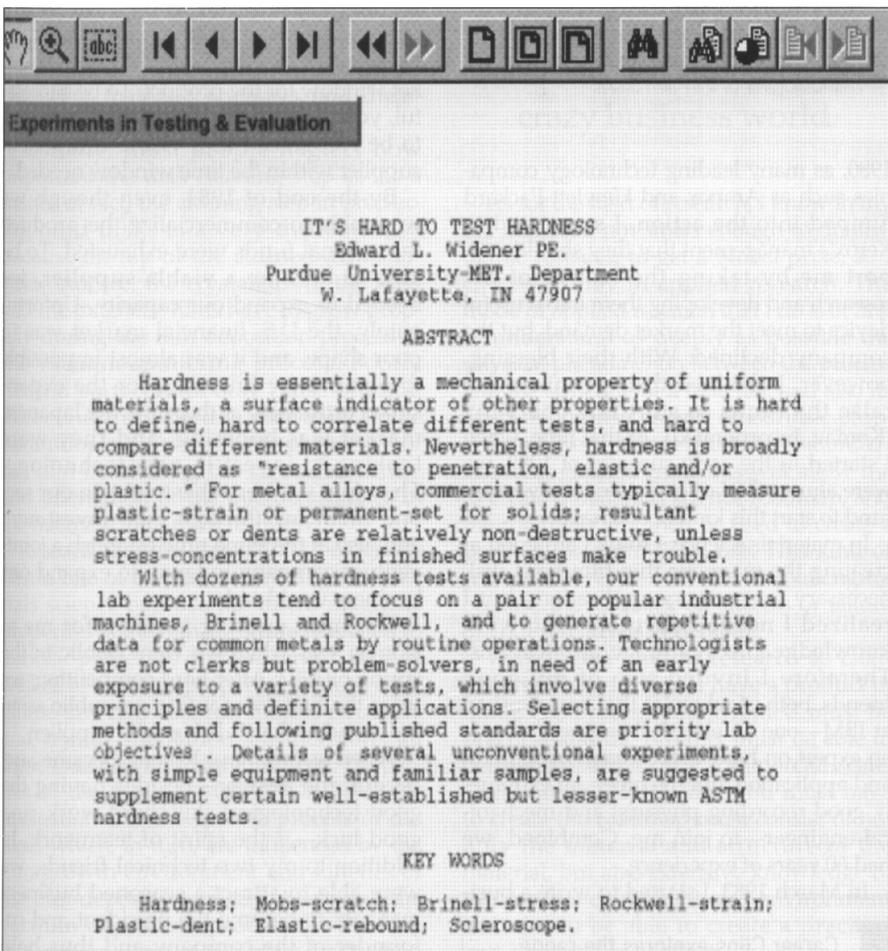


Figure 3. A sample of a portion from the first page of Ed Widener's experiment, "It's Hard to Test Hardness," on EMSET CD ROM.