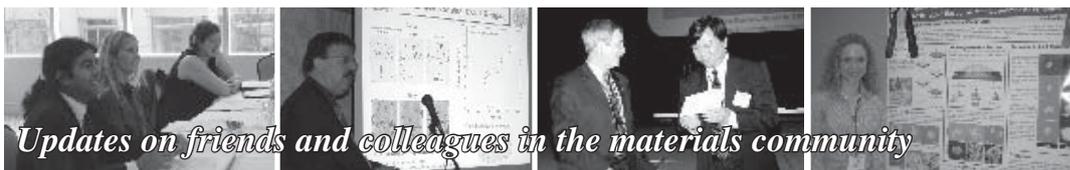


Member News



Updates on friends and colleagues in the materials community

Members from ORNL Earn Prestigious Recognition

Jeremy Busby, a member of the research staff at Oak Ridge National Laboratory (ORNL), was named a recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE) in November. This is



the highest honor granted by the U.S. government to recognize outstanding scientists and engineers who are early in their independent research careers. Busby's work focuses on structural materials for nuclear reactors, including the testing and development of advanced reactor materials. His contributions have included support for light-water reactors and space reactor systems, as well as research for the In-

ternational Thermonuclear Experimental Reactor (ITER) fusion project.

Lance Snead, also a member of ORNL's research staff, has been elected to the American Nuclear Society's (ANS) Class of 2010 Fellows. Snead is being honored for "for being the leading international expert on radiation effects in silicon carbide and other ceramic composites for fusion and advanced fission reactors." He will receive his award at the ANS winter meeting.

Diran Apelian Receives National Materials Advancement Award

Diran Apelian, Howmet Professor of Mechanical Engineering, Worcester Polytechnic Institute, and director of the university's Metal Processing Institute, was presented the 2010 National Materials Advancement Award from the Federation of Materials Societies on December 8. Apelian was recognized for his work at the institute "as a prime example of building bridges between the industrial, government, and academic communities that bring the capabilities of materials science and engineering to bear on societal challenges, while always valuing the role of the human element." Apelian served as the 2009 TMS president and was inducted as a TMS Fellow in 2006.

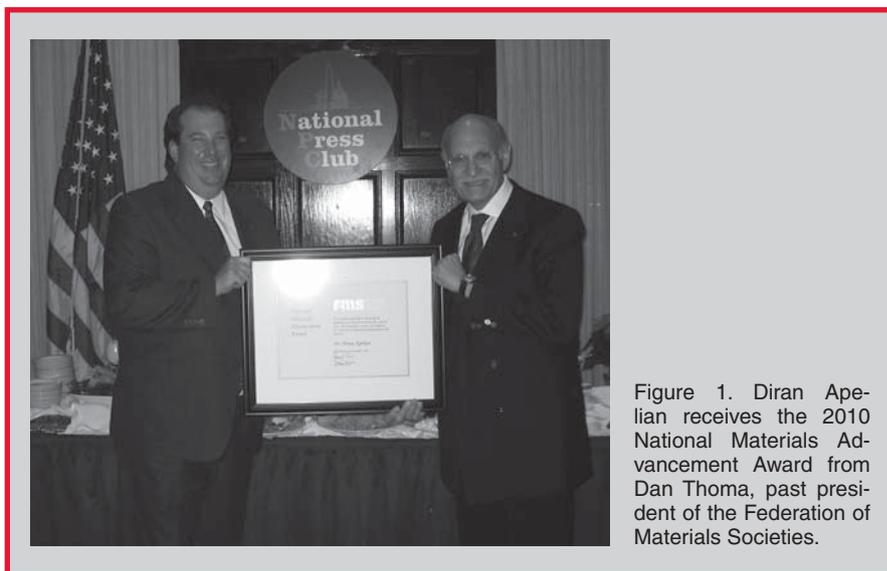


Figure 1. Diran Apelian receives the 2010 National Materials Advancement Award from Dan Thoma, past president of the Federation of Materials Societies.

Pradeep Rohatgi Appointed Center for Advanced Materials Manufacture Director

Pradeep K. Rohatgi, University of Wisconsin-Milwaukee (UWM) Distinguished Professor, has been appointed director of the UWM Center for Advanced Materials Manufacture (CAMM). Supported by a \$1.2 million federal grant, CAMM will focus on transferring UWM research in nanostructured materials to the manufacturing industry, collaborating with Oshkosh Corporation and other companies to develop an infrastructure for scaling up production.



Rohatgi is also the founder director of the UWM Composite Center at the University of Wisconsin-Milwaukee and has served as the founder director of the National Institute for Interdisciplinary Science and Technology, Trivandrum, and the Advanced Materials and Processes Research Institute, Bhopal. He has published more than 400 papers, co-authored and edited 11 books, and holds 23 patents. He has also received numerous honors and awards for his work in research, development, and education, particularly in the areas of processing and characterization of cast metal matrix composites for widespread industrial application.

Alan Taub Named Acta Materialia Winner

Alan Taub, vice president of Global Research & Development for General Motors Company, has been named the recipient of the 2011 *Acta Materialia* Materials and Society Award. The award recognizes "outstanding contributions to increased interactions between materials technology and societal interests, as well as significant accomplishments in materials science that have had a major impact on society." Taub will accept the award at the 2011 Materials Research Society Fall Meeting.





TMS Member Profiles

Meet A Member: The Scientific Journey of Brent Fultz

By Lynne Robinson

Editor's Note: The following has been excerpted from a Spotlight feature article posted in the Emerging Materials Technologies Community on Materials Technology@TMS.

Brent Fultz will be honored as the recipient of the 2010 TMS Electronic, Magnetic & Photonic Materials Division (EMPM) Distinguished Scientist/Engineer Award during two special sessions on vibrational properties and short-time dynamics in materials featured during the Computational Thermodynamics and Kinetics Symposium at the TMS 2011 Annual Meeting, February 27 through March 3 in San Diego. Currently professor of Materials Science and Applied Physics at the California Institute of Technology (Caltech), Fultz is being recognized "for outstanding contributions to fundamental understanding of thermodynamics in materials using inelastic neutron scattering."

In the following interview, Fultz touches on the lessons he has learned along the way to trying to unlock the secrets of the materials world.

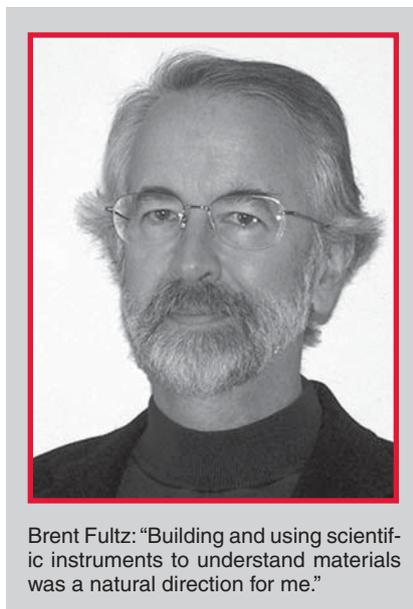
Q. How did you first become interested in materials science?

A. Like so many curious kids, I was fascinated by how and why things worked. I was also interested in why the physical world is the way it is. Shiny rocks and minerals were fun to collect, but I was more interested in manmade materials. To me, they seemed more elegant in appearance and function. Building and using scientific instruments to understand materials was a natural direction for me.

Q. What have been the highlights so far of your career?

A. Let me describe three turning points that set the direction of my career. The first was joining the research group of J.W. (Bill) Morris at Berkeley. His viewpoints on many issues were quite different from mine, but he tolerated me and I grew a lot by thinking about

his crisp and creative logic. The second was advice I received from three senior faculty during my first year at Caltech. They basically told me to



Brent Fultz: "Building and using scientific instruments to understand materials was a natural direction for me."

work things out for myself, even if approximately, before reading or believing the literature. This heightened my sense of smell for inconsistencies, which often hint where discovery might be possible. Such was the case for the third turning point, when I was preparing a classroom lecture on order-disorder transformations in materials. At the time, I remembered working a problem about the entropy of a harmonic oscillator on a tedious thermodynamics exam. This triggered a small research activity, and a few years later we published our first paper on the vibrational entropy of the order-disorder transformation. I am still working on related topics after more than 20 years.

Q. How has TMS figured in your career over the years?

A. My TMS colleagues and friends were some of the best for discussing ideas about the vibrational entropy of materials, and studies of entropy by

inelastic scattering methods. These discussions helped me to optimize the research that is recognized by the Distinguished Scientist/Engineer Award. I am honored to be recognized by my peers, especially since I respect so much excellent work that they have done themselves. Nevertheless, I think the best part of the award will be the symposium sessions. I always like a party that happens when good people get together.

Q. What do you feel are the most exciting possibilities for materials science and engineering (MSE)?

A. One big trend is the growing value of quantum mechanics for understanding and predicting the structure and behavior of materials. It is a challenge to incorporate quantum mechanics properly into the curriculum of MSE, but as a community, we should make increasing effort to do so.

Q. What advice could you share with scientists and engineers just starting in the field?

A. When assessing where you are and where you want to go, please think about what accomplishments have given you the most reward. Do you prefer the elegance of a new concept or the creativity of designing something new? Did you like the work of doing it? Hopefully, you can plan your path forward so you are working hard on things you enjoy, and accomplish important things that give reward. At least for me, I am pretty sure that there is no destination for this journey. The passage is a long one, though, and you'll have many opportunities to change directions. Be patient.

Each month, *JOM* profiles a TMS member and his or her activities both in and out of the realm of materials science and engineering. To suggest a candidate for this feature, contact Maureen Byko, *JOM* editor, at mbyko@tms.org.