

## Member News



Updates on friends and colleagues in the materials community

### Gregory Olson Inducted into American Academy of Arts and Sciences



Gregory P. Olson

Gregory P. Olson, QuesTek Innovation LLC's chief science officer and company co-founder, was inducted into the American Academy of Arts and Sciences in October. Of the 220 inductees elected to the Academy in 2012, he was one of only nine within the Engineering Sciences and Technologies section. Olson is also a Walter P. Murphy Professor of Materials Science and Engineering at Northwestern University, where he teaches, leads an active group researching computational materials design, and directs the Materials Technology Laboratory/Steel Research Group. The Academy cited Olson as the "father of materials design," while also noting his many pioneering achievements in the field of computational design of materials as dynamic, multi-scale systems.

### TMS Members Take Home Cahn Prize

Congratulations to three TMS members for winning the first annual (2012) *Journal of Materials Science* Robert W. Cahn Best Paper Prize. They are Adam Pilchak, materials research engineer, U.S. Air Force Research Laboratory; William Porter, research engineer, University of Dayton Research Institute; and Reji John, principal materials research engineer, U.S. Air Force Research Laboratory. Their winning paper is "Room Temperature Fracture Processes of a Near- $\alpha$  Titanium Alloy Following Elevated Temperature Exposure," published in the October issue. The Cahn Prize, as it is known, was established to recognize an exceptional original research paper published in the journal in a particular calendar year.

### A Meaningful Mineral



(Photo right): Garry Warren (right) TMS past president, presents James Robinson, TMS executive director, with a chalcopyrite sample that he used for his Ph.D. dissertation. (Photo left): Mined in the Transvaal region of South Africa, the sample is notable because of its large size and high purity. "In most chalcopyrite deposits, the chalcopyrite occurs in very small particles that are finely dispersed in 'gangue' that must be removed to produce a concentrate for further processing," explained Warren. Chalcopyrite in this form, Warren further noted, is a semiconductor. For his dissertation, Warren made electrodes from the mineral and performed a series of electrochemical experiments on them to simulate the reactions that occur in hydrometallurgical processing of chalcopyrite. The sample pictured will be displayed at TMS headquarters, along with other pieces of materials science history donated by TMS members.

### Irene Beyerlein Receives Los Alamos Research Prize



Irene Beyerlein

Irene Beyerlein, scientist, Los Alamos National Laboratory, has been awarded the Fellows Prize for Outstanding Research by the Los Alamos Laboratory Fellows organization. She was recognized for her work on multi-scale modeling for dislocation physics and dynamics that has provided insights into how materials yield under stress loading. Her work in the

area of nanoscale materials and microstructural evolution during severe plastic deformation has also led to advances in understanding this class of materials.

The Los Alamos Laboratory Fellows organization is made up of technical staff members who have been appointed by the laboratory director to the rank of Fellow in recognition of sustained outstanding contributions and exceptional promise for continued professional achievement. To promote technical achievements, the Fellows organize symposia and public lectures and administer the Fellows Prize.

### Andrea Hodge Begins Term on MRS Board

Andrea Hodge, professor and the Philip and Cayley MacDonald Early Career Chair in the Aerospace and Mechanical Engineering Department, with a joint appointment at the Mork Family Department of Chemical En-

gineering and Materials Science, University of Southern California, has been elected to the board of the Materials Research Society (MRS). She began her three-year term of service on January 1.



## Meet a Member: Donald Sadoway Delivers the Good News about Materials Science

By Lynne Robinson

**Editor's Note:** Watch Sadoway's interview on Comedy Central at <http://dmse.mit.edu/news/sadoway-colbert-report> or view his TED talk at [http://www.ted.com/talks/donald\\_sadoway\\_the\\_missing\\_link\\_to\\_renewable\\_energy.html](http://www.ted.com/talks/donald_sadoway_the_missing_link_to_renewable_energy.html).

"My guest tonight is a professor of materials chemistry from the Department of Materials Science and Engineering at MIT. I will ask him what . . . that means."

And with that, Stephen Colbert welcomed Donald Sadoway to the stage of the *Colbert Report*, the wildly popular Comedy Central television program that satirizes American politics, culture, and media. "Colbert is exceptional for his razor-sharp mind and his ability to react in the moment at super high speed. Plus, he's also aiming for humor. It's unlike any venue I could imagine," said Sadoway, the veteran of many media interviews and public appearances.

Sadoway had come to the attention of the *Colbert Report* for his work on liquid metal batteries. The same technology earned Sadoway the distinction of being named one of the "World's Most Influential People" by *Time* magazine in 2012. It is also the topic of a talk that he was invited to give at a TED (Technology, Entertainment, Design)

conference as one of the "ideas worth spreading" identified by the Sapling Foundation. His lecture, "The Missing Link to Renewable Energy," has attracted more than a million views since it was posted on the TED website in March 2012.

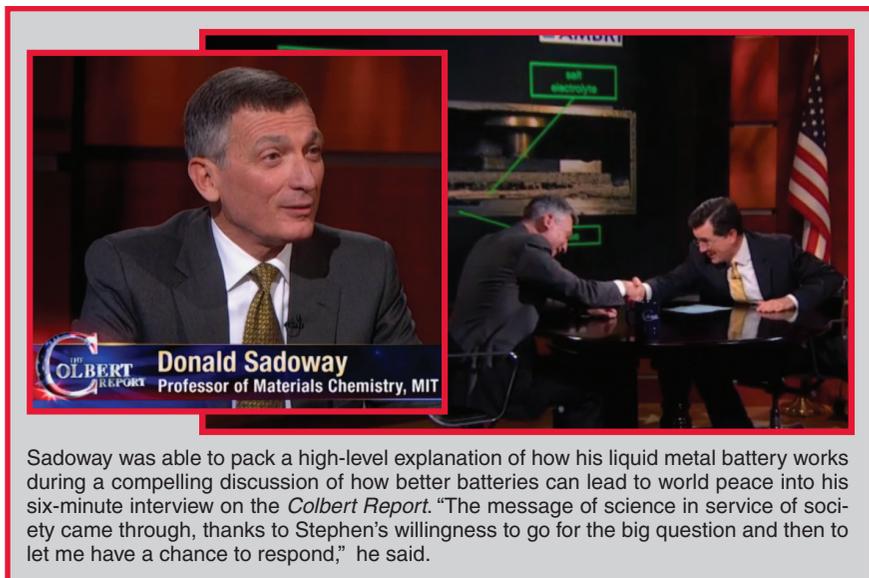
In any of his talks or interviews geared to the general public, Sadoway does not shy away from discussing how technology works. (When viewing a cross section of the liquid metal battery prototype during Sadoway's interview, Colbert noted that "it looks like a very unappetizing grilled cheese sandwich.") A key to his popularity seems to lie with his direct, down-to-earth explanations of how science can change the world for the better. "I think a peaceful and prosperous world rests on the invention of modern, cost-affordable batteries," said Sadoway during his *Colbert* interview. "If you have batteries that can bring renewable sources of energy into the grid and use renewable sources of energy to power electric vehicles, you are going to topple dictators. You're going to make things very different when the price of oil goes back to \$20 a barrel."

Sadoway also maintains that the time

has come for the public to take more notice of materials science, including his particular research interests, in service to society. "There is a confluence of at least two streams of thought that has pushed grid-level storage onto the public stage," he said. "One is the greater interest in the topic of energy, driven by a mix of environmental and national security concerns. Secondly, as people think more deeply about how to increase the amount of electricity generated by wind and solar, they realize that without storage, these renewable sources of energy fail to reach their potential. My advice to others is to make the connection to the public interest and you'll find your work being sought after."

For his part, Sadoway embraces the opportunity to talk to the non-scientific world about the work that he feels so passionately about and the difference that it can potentially make. "It's important, in my judgment, to get out there and explain to the general public what we do," he said. "I am happy to do my part as a spokesman for American science and engineering."

The materials science community will also have a chance to learn from Sadoway's insights when he delivers the Extraction & Processing Division (EPD) Distinguished Lecture at the TMS 2013 Annual Meeting & Exhibition, March 3–7, in San Antonio Texas. "I'm having so much fun these days. It's a great time to be working in materials science," said Sadoway in previewing his EPD lecture. "Some people love the nanoscale and they work with tens of atoms. Me, I prefer the macroscale—I work with *tons* of atoms. It's all good."



Sadoway was able to pack a high-level explanation of how his liquid metal battery works during a compelling discussion of how better batteries can lead to world peace into his six-minute interview on the *Colbert Report*. "The message of science in service of society came through, thanks to Stephen's willingness to go for the big question and then to let me have a chance to respond," he said.

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 Lynne Robinson at [lrobinson@tms.org](mailto:lrobinson@tms.org).