AIP|Matters

Monday, September 22, 2008

Director's Matters

Emphasizing the R in energy R&D

The topic of research and development on new and expanded sources of energy has remained high on the list of debate topics in the media because of a "perfect storm" of converging developments: the record high price of oil, an increasing acceptance by the populace that there are connections between the dominant use of fossil fuels and global climate change, and the rising rhetoric from the presidential and congressional candidates as we approach the US election day on November 4. Given the anxieties associated with these developments and the sheer volume of information from all forms of media, it is sometimes difficult to interject important arguments into the debate.

One important message on the energy debate is the notion held by many in the scientific and engineering community that our nation—which consumes 25% of the world's current oil production—cannot engineer its way through this national energy challenge without research on the basic technologies that need to be developed for alternative and more sustainable energy supplies. This message was recently put in front of the nation by MIT president Susan Hockfield in her September 11 op-ed in the *Washington Post* entitled "Reimagining Energy." She argued that achieving transformative energy technologies will require "broad-based and intensive investment in basic energy research"—the often-overlooked R in energy Research and Development.

The national energy challenge is enormous, and we can't overcome it by simply expanding conventional sources of energy. We need breakthroughs that come from increasing our fundamental knowledge about how nature works—breakthroughs that will lead to improvements in, for example, the efficiency of biofuels, solar panels, and batteries.

Last week, there were several important developments in this debate. The US House of Representatives introduced its version of a new energy bill. The Task Force on the Future of American Innovation held a September 17 media briefing at the National Press Club during which a petition was released in support of a strong basic research program for America's energy future. AIP is a signatory to this petition, which reiterates our previous positions in support of funding for basic research for the Office of Science, NSF, and NIST.

Our colleagues at the American Physical Society (APS) have contributed an essential analysis to this important debate. See *Energy Future: Think Efficiency*, a comprehensive report developed by a panel of leading experts in energy policy with backgrounds in physics, engineering, economics, and policy, chaired by former APS President and Nobel Prize–winning physicist, Burt Richter. I urge you to read this important study so that our collective informed voices can be added to the energy debate.

Sincerely,

Fred

Publishing Matters

Building strength with new tools

Publishing Technology staff are now using a software ticketing system for new developments in Mark Logic, *Journal of Renewable and Sustainable Energy*, Scitation, and Polopoly. A suite of products developed by the Atlassian software company was chosen for its unique software management perspective. It allows the user to create a ticket and track it in a software revision control system, document it on a wiki, and embed links. From the ticket, the user can determine what code was changed, any comments for the code, when it was built, what code review was performed, and when it was released. Individual products in

Atlassian's suite include:

- JIRA—the bug and issue tracker;
- Confluence—the enterprise wiki product that is one of the largest corporate wikis in the world;
- Bamboo—the software build manager;
- FishEye—the source code repository window that performs trend analysis and runs reports;
- Crucible—the code review module;
- Clover—the code coverage analysis system; and
- Crowd—the single sign-on server (across platforms with API integration) for these products.

The Atlassian suite is becoming the de facto standard for software development companies throughout the world. See other items of interest in The Technology Blog.

Physics Resource Center Matters

Student Fellowship in Physics and Society

The American Physical Society Forum on Physics and Society, in partnership with the Society of Physics Students and the APS Forum on Graduate Student Affairs, proudly announces the 2008 recipient of the Student Fellowship in Physics and Society: Erin S. Owen, a graduate student of Eastern Michigan University. Erin's fellowship project will focus on research related to the potential energy savings that can be realized when light pipes are integrated into building designs, allowing natural sunlight to provide interior lighting. Erin will develop an interactive online program, which will calculate the potential energy savings that can be realized by installing light pipes. The program will determine how many light pipes need to be installed in order to achieve a desired level of illumination, and calculate payback time if the user provides estimates for the cost of installation.

The primary goal of the Student Fellowship in Physics and Society is to provide research and project opportunities for undergraduate and graduate students interested in physics and society, and to raise the awareness of applying physics to problems in society as a career and as an important undertaking by members of the physics community.

Around AIP

Feedback requested on flexible spending debit cards

The CBIZ flexible spending account program allows employees to have pre-tax deductions taken out of their paychecks, and put into an account used to pay for qualified medical or dependent care expenditures. This year, a new debit card system was introduced to streamline the reimbursement process—participants can simply swipe the debit card at places such as pharmacies and doctors' offices. Human Resources needs to know how this program has worked for you, if you participated. Has it worked smoothly, or have you had any trouble with it? Send your feedback to Human Resources@aip.org.

Green tip: Purify with plants

It doesn't take a forest to clean the air in the office . . . only about one plant for every 10 square yards. Plants such as philodendrons and peace lilies absorb airborne pollutants, keeping the air you breathe clean and clear.

Member Society Spotlight

APS unveils *Physics* website

Last week the American Physical Society (APS) launched *Physics*, a new website that enables researchers to stay informed about the most important developments in physics by highlighting exceptional, just-published papers from the Physical Review journals. This effort addresses the problem of information overload stemming from the massive volume of research papers published each year—the Physical Review journals alone published more than 18,000 papers in 2007.

Physics features three kinds of articles:

- **Viewpoints:** essays that focus on a single Physical Review paper or PRL letter and put this work into broader context.
- **Trends:** concise review articles that survey a particular area and look for interesting developments in that field.
- **Synopses:** very brief distillations of interesting and important papers each week.

With these diverse features, *Physics* allows scientists to "cut to the quick" without sacrificing important details, and learn about key advances in physics research.

We invite your feedback to this newsletter via e-mail to aipmatters@aip.org.

For past issues of this newsletter, visit the AIP Matters archives.