AIP Matters

Monday, November 8, 2010

Director's Matters

By H. Frederick Dylla, Executive Director & CEO

"What we've got here is a failure to communicate…"—from the 1967 film, *Cool Hand Luke*

The results of last week's midterm elections are going to change the dynamics of Congress and thus affect many of the activities that it funds or regulates. Despite the fact that both Republicans and Democrats have traditionally been strong supporters of basic and applied science, several factors that were heatedly discussed during the election campaigns—such as the painfully slow recovery from the recession, high unemployment, and large federal deficit—may limit federal funding for the sciences in the coming year. Within this calculus, science funding levels will be weighed against other potential demands for federal money.

The reauthorization of the America COMPETES Act, which would provide the blueprint for a large percentage of physical sciences funding over the next three years, is in danger of falling out of the packed schedule of the lame duck session of the 111th Congress. As we have reported in this column and AIP's *FYI* bulletins, the initial COMPETES Act of 2007 sailed through both houses of Congress with strong bipartisan support. Not so this year with the House version of the reauthorization bill, which finally passed this summer only after multiple failed attempts. The full Senate has not yet considered the bill, and delays will likely persist in the wake of the election results.

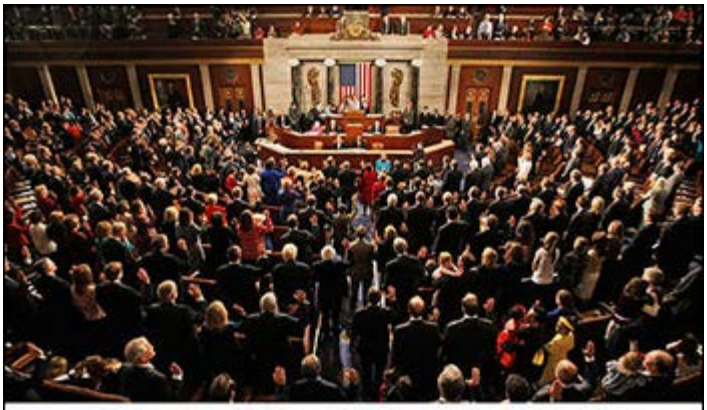


Photo credit: Pablo Martinez Monsivais/Associated Press

So how will all that play out within the larger political context as the current Congress winds down and the 112th Congress convenes? The initial postelection statements from President Obama and the presumed new chair of the House Science and Technology Committee indicate support for science (see FYI # 110). The science community must continue to emphasize to our legislators and the American public that money spent on basic research is a sound investment in our country's financial future.

According to the National Science Foundation's latest science indicators report, the general public by and large supports government funding of basic research—some 84% of Americans polled expressed support in 2008, and that figure has remained steadily high since the mid-1980s. Yet there is often a disconnect between this fundamental public support and the sensational and often divisive "public debate" over

science related issues, such as climate change, intelligent design, or genetically modified crops.

Despite the efforts of several captains of industry, such as Craig Barrett (retired) from Intel and Norm Augustine (retired) from Lockheed Martin, who worked for the successful passage of the first COMPETES bill, many lawmakers and citizens have still not made the connection between basic research and the resulting innovations that continually advance our lifestyle—and tremendously impact our economy. I cite just a few examples:

- Mathematics of encryption resulted in security of electronic commerce;
- New magnetic thin films enable consumers to carry their entire library or music collection in the palm of their hand;
- The development of ultra-sensitive chemical detection increased the safety of the food supply;
- Wonder drugs harvested from natural sources (for example, taxol from the Pacific Yew tree) positively impact the recovery from cancer;
- General relativity corrections to modern clocks led to the development of GPS systems.

This list could easily go on, and these tangible outcomes are more applicable to our society than the media's typical playbill of controversial issues that intersect with science and extraordinary dangers (such as asteroids). The onus rests on the scientific community to promote the value of fundamental research and its very real effects on our health, welfare, and economy. If we in the science community are to make the most of our situation in the near term, we should continue to extol such successes in the public arena whenever the opportunity strikes.

PUBLISHING MATTERS

New feature in UniPHY - Discussion Groups!

UniPHY
Connect, Collaborate, Create

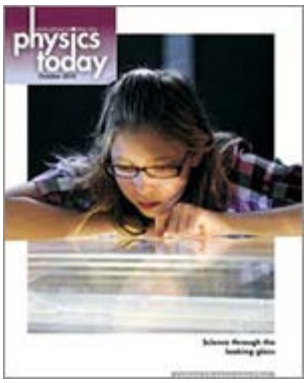
Last week, UniPHY launched Discussion Groups, a new feature that allows members to form collaborative environments centered on scientific journals and disciplines, common interests, institutions, organizations, or upcoming events. The new feature will enable scientific researchers to share thoughts, opinions, and ideas with other members. Within UniPHY Discussion Groups, members can

- Create public groups, where any UniPHY member can join, or private groups, where members can join by invitation
- Apply a graphic or image to group homepages
- Create or comment on threaded discussions within group pages
- Search for groups created by other members

Join AIP UniPHY to create a new group or participate in existing discussions!

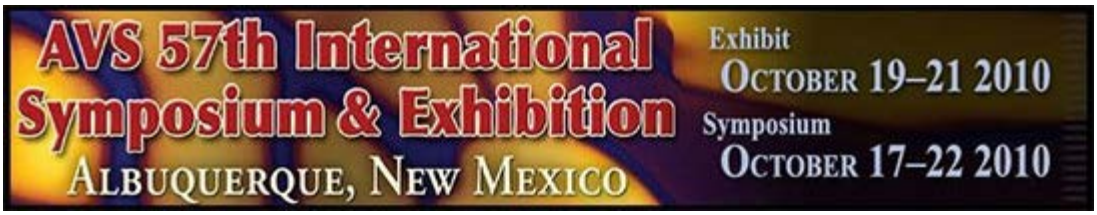
PHYSICS RESOURCES CENTER MATTERS

Sign up for Facebook to connect with *Physics Today*



Physics Today's Facebook page, created earlier this year, continues to attract new fans from around the world. If you become a fan too, you'll find a mix of links to *Physics Today*'s articles plus original, Facebook-only content. Charles Day, *Physics Today*'s online editor, writes the posts. Unlike some Facebook editors, he also responds to fans' comments. "Facebook is a social medium," he says. "If all you do is post, you're having half a conversation."

MEMBER SOCIETY SPOTLIGHT



Scientists and engineers from around the world convened to discuss some of the latest breakthroughs in nanotechnology, alternative energy, materials research, and medicine at the AVS 57th International Symposium & Exhibition, held October 17–22 in Albuquerque, NM. AIP Executive Director and CEO Fred Dylla—a long-time member and former president of AVS—was among the 2,100 attendees. The meeting's content attracted the attention of media outlets throughout the country, in part because more than a dozen press releases that were sent out to promote the conference, and perhaps to an even greater extent because the topics being discussed could pique the interest of any curious mind.

Here's a post-meeting teaser:

- **Photovoltaic Medicine: Miniature Solar Cells Might Make Chemotherapy Less Toxic**
  Microscaled photovoltaic devices may one day be used to deliver chemotherapeutic drugs directly to tumors, rendering chemotherapy less toxic to surrounding tissue.
- **Disease in Rural China Linked to Polluted Coal**
  In remote, rural areas of southwestern China, villagers cook and dry their clothes by burning pieces of coal they pick up off the ground. This fuel releases a toxin that may be poisoning millions of people, according to an ongoing investigation by researchers in New York and China.
- **Batteries Smaller than a Grain of Salt**
  Researchers in California are aiming to create some of the tiniest batteries on Earth, the largest of which would be no bigger than a grain of sand. Those tiny energy storage units could one day be used to power the electronics and mechanical components of micro- to nanoscale devices.
- **Sterilizing with Fluorescent Lights**
  Scientists in New Mexico are working on a new type of antimicrobial surface that won't harm people or animals but is inhospitable to methicillin-resistant Staphylococcus aureus, which is responsible for an estimated 19,000 deaths and almost $4 billion in healthcare costs per year in the US.

Time, Reuters, CBS News, and a number of trade magazines have followed up with inquiries, and news stories continue to run.

Each year at the symposium, AVS runs a popular exhibition where about 150 companies and organizations promote their products and services to the AVS constituency. The exhibit experience is enhanced with interactive Exhibit Technology Spotlight Sessions. *Physics Today* hosted an Exhibitors' Lounge.

For a recap of the conference, read AVS Hudson Mohawk Chapter Chair Vincent Smentkowski's blog.

WHAT'S HAPPENING THIS WEEK

Events at ACP (College Park, MD)

Monday, November 8

- AIP Executive Committee meeting
- ACP art reception, "Visionary Distillations," 5:00–7:00 p.m.

Tuesday, November 9

- AIP Governing Board meeting

Friday, November 12

- AIP milestone and all-hands meeting

Through November 22

- ACP food drive. Donations of nonperishable items will be donated to the College Park Community Food Bank.

We invite your feedback to this newsletter via email to aipmatters@aip.org.

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