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Director's Matters

By H. Frederick Dylla, Executive Director



In last week's State of the Union address, President Barack Obama made an important point when he told Congress:

Innovation also demands basic research. Today, the discoveries taking place in our federally financed labs and universities could lead to new treatments that kill cancer cells but leave healthy ones untouched. New lightweight vests for cops and soldiers that can stop any bullet. Don't gut these investments in our budget. Don't let other countries win the race for the future. Support the same kind of research and innovation that led to the computer chip and the Internet: to new American jobs and new American industries.



President Barack Obama delivers the State of the Union address Jan. 24, 2012. Credit: Official White House Photo by Pete Souza

President Obama, and his predecessor, President George W. Bush, both have spoken about the importance of funding for science and technology in their addresses to Congress. A [recent issue of FYI](#) noted six instances when science and technology were discussed in State of the Union addresses, including this one by President Bush in 2006:

And to keep America competitive, one commitment is necessary above all: We must continue to lead the world in human talent and creativity. Our greatest advantage in the world has

always been our educated, hardworking, ambitious people—and we're going to keep that edge. Tonight I announce an American Competitiveness Initiative, to encourage innovation throughout our economy, and to give our nation's children a firm grounding in math and science. . . . I propose to double the federal commitment to the most critical basic research programs in the physical sciences over the next 10 years. This funding will support the work of America's most creative minds as they explore promising areas such as nanotechnology, supercomputing, and alternative energy sources.

While Congress seems more bitterly divided than ever before, it is important to remember that Republicans and Democrats on Capitol Hill, Presidents Obama and Bush, and corporate leaders throughout the United States agree that investing in science and technology is one of the best ways to strengthen our nation's economy. There is much controversy surrounding science issues—ranging from

stem cell research to climate change—but thankfully, support for science funding remains broadly bipartisan. It's important that it remains that way.

This is not to say that stable or increasing levels of science funding can be taken for granted, given the financial pressures on the federal budget for the foreseeable future. In the budget cycle that just wrapped up, there were winners and losers for research programs that provide funding for grants which members of AIP's Member Societies receive. The National Science Foundation received a 42.7% increase in funding to support major research equipment and facilities, while the National Institute of Standards and Technology's Industrial Technology Services program was cut by 25.9%. The budget for the NIST's scientific laboratories rose by 11.8%, NSF by 2.5%, and the Department of Energy's Office of Science by 0.6%. [FYI #1](#) provides an interesting breakdown of these changes.

It's going to take hard work to increase science funding in this budget cycle and in following years. The budget deal worked out between Congress and the Obama Administration will keep spending in check for many years to come. While there is the *will* to increase science funding, as shown by the President's remarks last week, finding the *way* to increase it will be challenging. The effort will require all of us to be a voice for the value of science for the health of our nation, from the local classroom to the town hall to the halls of Congress.

Publishing Matters

Applied Physics Letters' 50th Anniversary



From the APL website: "The first year of *Applied Physics Letters* ran approximately 15 articles every two weeks. Since the first issue, published in September 1962, the journal has evolved to meet the changing needs of the scientific community and to follow the trends of the applied physics field. In the last issue of 2011, a week's worth of *Applied Physics Letters* amounts to more than 160 articles across a broad range of topics, all highly relevant and highly cited."

Now, as APL enters its 50th year of serving the needs of physicists and scientists around the globe, we invite you to not only look back at the most highly cited papers from the past [50 years](#), but also to look forward to another 50 exciting years on the cutting edge of scientific discovery!

Celebrating 50 Years of *Applied Physics Letters*!

This collection represents the most highly cited papers ever published in *Applied Physics Letters*. These articles stand as a testament to the hard work and outstanding contributions of you, our authors, to the applied physics field and to the scientific community at large. We invite you to browse these papers and more as we celebrate our first 50 years of providing highly relevant, highly cited work to the world of physics. We know the next 50 years will be just as exciting!



To mark this milestone, several important changes are underway. A revised table of contents reflects changes in topical coverage within the applied physics community. An increased length limit for articles will provide authors with more flexibility. New sections are also planned. For details, see [Editor Nghi Q. Lam's announcement](#) on the APL website.

Physics Resources Matters

CiSE playing cards highlight computing history

Last year [Computing in Science and Engineering \(CiSE\)](#) produced a deck of [playing cards](#) that depict the history of computing. Each of the 54 cards features a different instrument—from ancient calculating mechanisms to the most recent computers and smart devices—that changed our computing paradigms. This year *CiSE* published an illustrated companion booklet that includes a description of each instrument and its relevance. Together, the cards and booklet constitute a unique presentation of computing history. The project was spearheaded by George Thiruvathukal, an associate editor-in-chief of *CiSE* and professor of computer science at Loyola University in Chicago. The cards and booklets are [available at the AIP store](#).



The ever-mesmerizing Slinky

The [Knight Science Journalism \(KSJ\) Tracker](#), a peer-review site for science journalists, recently gave a nod to *Inside Science* manager Ben Stein for his story that hit just before the holidays, [Secrets of the 'Levitating' Slinky](#). Stein writes:

Spurred by a wave of recent web videos showing the bottom of a dropped Slinky hovering dramatically in midair, physicists have



provided new insights into this phenomenon, from the existence of shock waves in the falling Slinky, to a remarkably universal "levitation" time for a Slinky on other planets or moons despite their different gravitational fields.

Read the [full story](#) on *Inside Science*. KSJ aims to provide science reporters and editors with "timely access to the work of peers across the country, [so] they can better evaluate and improve their own performance."

Coming Up

Monday, January 30

- AIP Advisory Panel on Committees meeting (College Park, MD)
- AIP Executive Committee meeting (College Park, MD)

Tuesday, January 31

- Employee appreciation ice cream social (Melville, NY)
Bring your sweet tooth and leave your diet at your desk!



Wednesday–Friday, February 1–3

- 2012 PSP Annual Conference, "*Prospering with Digital: Making Investments Pay*" (Washington, DC)

Thursday, February 2

- ACP Super Bowl kickoff lunch, 12–1 pm (College Park, MD)
Come and join your fellow ACP staffers and put your game face on. All are encouraged to wear your favorite team's jersey or gear!



February 3–8

- AAPT Winter Meeting (Ontario, CA)