

From Congress to AAAS, Rush Holt reflects on science policy

The one-time fusion researcher worries that public understanding of climate change is slipping, and says political attacks on social sciences are misguided.



Rush Holt

Last month Representative Rush Holt (D-NJ), who left Congress in December, took the helm of the American Association for the Advancement of Science (AAAS), succeeding Alan Leshner. Prior to his election to the House in 1998, Holt, now 66, was assistant director at the Princeton Plasma Physics Laboratory, the US flagship fusion research center. Holt spoke to PHYSICS TODAY on 20 January. Following is an edited transcript of the interview. (See also Holt's review of Michael Teitelbaum's *Falling Behind? Boom, Bust, and the Global Race for Scientific Talent* on page 48 of this issue.)

PT: What do you consider to be your accomplishments in Congress?

HOLT: I focused a lot on science education. Our real problem is not that we're failing to produce excellent scientists, because we are [producing them], but rather that we have failed to maintain an appreciation for and understanding of science in the general population. I was able to keep a spotlight on the need but wasn't able to accomplish as much as I wanted. We got science included in the subjects emphasized by federal law. But we haven't really improved teacher professional development and other things we need to do.

In environmental protection, I think we helped to keep science in the regulatory process. The current majority in Congress wants to almost entirely remove science from the advisory and regulatory process. At least for a while, we have been able to stave off those attacks on science.

Probably the most noteworthy thing I did was lead the effort to get \$22 billion in new money for science in the ARRA [American Recovery and Reinvestment Act]. That was something I'm very proud of. I get some criticism now that that surge of funding didn't last, to which I say I do think we're better off for having done it than not. I sure wish that we could have maintained the level of funding that we got during the stimulus.

PT: How did you get that \$22 billion?

HOLT: Essentially, I went right to the president and got him to include it. I

first talked to the economic advisers who were putting together this stimulus package, and it hardly dawned on them that science needed the funding and science spending does improve the economy. I tried arguing with them without success. So [then House speaker Nancy] Pelosi [D-CA], a big believer in science and research, and I worked up a proposal and she took it to the president, and he bought it. [Former senator Arlen] Specter [D-PA], who was always a big fan of [the National Institutes of Health], injected a few extra billion for NIH.

PT: Has lawmakers' understanding of public policy issues that involve science improved, and have more of your former colleagues come to accept the science on climate change?

HOLT: No, I think we have lost ground. Although members of Congress are smart and generally well educated, their appreciation and understanding of science is not good. So more often than making bad or antiscience decisions, they just ignore science. There is some antiscience; certainly, climate change has become an issue that in some circles it's politically attractive to deny the science and actually combat the science. But most of the time, it's not antagonistic, it's just ignorance.

PT: What do you mean by lost ground? Are you talking about climate change or science generally?

HOLT: Certainly in climate change. If you look back six or seven years, opinion polling, anecdotal evidence, and my general understanding of where people are showed that concern about climate change was greater and support for doing something about it was greater. Since then there has been a concerted, very well-funded disinformation campaign to sow doubt about our understanding of climate. Of course there are questions about models; of course there is a lot more to be understood about how glaciers move and how the ocean circulates and so forth. But the basic outlines about what is happening to our climate and how humans are changing it are well known.

What I meant in general about how

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we've lost ground is over the centuries Americans have appreciated the value of thinking like a scientist. Shopkeepers and factory workers over the last couple centuries have in their own small way thought about how the world works and how they can use that understanding to improve their lives. We're sort of losing that. There's a lot less application of scientific thinking to people's lives and also to their public policies in the last couple decades.

PT: Other than physicians, it seems that scientists aren't attracted to serve in Congress. Why?

HOLT: Most scientists tend to feel that politics is compromising, and they want no part of it. Their intellectual and scientific work is somehow more pure. I disagree with that. It's shortsighted and probably wrong, but it's a mentality that's built up over generations of scientists. I have always maintained and hope to advocate more that scientists get involved in the making of policies that affect their lives and their country and their world.

PT: Why did you take the AAAS job?

HOLT: When I heard about that position, I immediately thought it was a good match. Over my career I have intersected with AAAS a lot. I was a AAAS fellow on Capitol Hill back in the early 1980s. All of the things I've been working on over the years—the role of science in international affairs, science education, integrity of science, and the system that will allow scientists to do good science in public policy—are things that AAAS works on.

PT: You are succeeding a psychologist as head of AAAS. Does your different scientific training signal any change in course for the organization?

HOLT: I don't think so. Alan Leshner has done a good job; he has put AAAS on sound footing. The publishing is excellent. We do need to find ways to remind members why AAAS and the scientific societies—this goes for AIP [American Institute of Physics, publisher of PHYSICS TODAY] and APS [American Physical Society] as well—are important to support.

PT: The AAAS 2012 tax return for non-profits showed net assets of \$113 million. And Leshner was paid more than \$1 million. It seems the association should be able to expand its programs.

HOLT: Some of those assets are in real estate. They have a nice building in Washington. AAAS doesn't have an endowment, which means it doesn't have enough resources to carry on its activities when the outside funding stream is interrupted. It can do that to some extent, but it would be good to be able to do that always.

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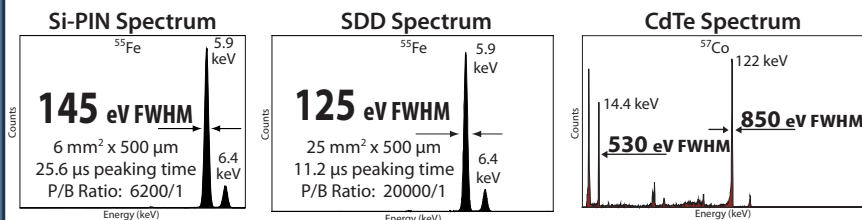


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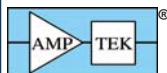
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The organization has to pay more attention to its members; make sure it is adding value to their professional efforts. I also want to make more use of the scientific fellows who are elected each year. It's an honor that should mean more than a little lapel rosette. It should mean real involvement in the issues of the day.

PT: As the publisher of *Science*, do you see a threat from government mandates to provide free access to papers that are funded by federal agencies?

HOLT: I'm still working through that. I don't think anybody really knows. In your business and in every other place, anyone will have to admit they have not seen a good business model for sustainable scientific publishing into the future. So that's a little unnerving.

Communication is a *sine qua non* of science. If you don't publish, you can't call yourself a scientist. But it can't be a publishing free-for-all that is a race to the bottom of editorial standards. There

has to be some way to encourage open communication while maintaining high standards and doing it with a sustainable business model.

PT: Some in Congress are taking aim at the social sciences.

HOLT: I appreciate the social sciences as science as much as I appreciate the physical sciences. For members to say that somehow, because it deals with human lives rather than electrons and point particles, it is less based on evidence or is less necessary, is misguided. Physical scientists should defend social sciences because the attacks on social sciences are attacks on the very idea of science. It is not wise to sit back and say, "Well, those are the softer sciences. That doesn't affect us." Because anything that undermines an appreciation of science—evidence-based thinking that is empirical and verifiable—will eventually hurt any of the other components of science.

PT: What do you think will happen with fusion?

HOLT: When you have a big project like [ITER], you have to lock the construction in place years ahead of completion, and it's hard to incorporate newer findings. So that makes ITER look less exciting scientifically than it might be if it were designed this year. But you can't redesign it every year. That presents a real problem, but it's still worth undertaking because it will be a really good demonstration. But you have to keep the other [fusion research] work going at the same time. And arguments that we can't afford it are so misguided. If we are spending, just in the US, well above \$1 trillion on energy, why can't we spend \$1 billion a year on research for a promising alternative and \$1 billion a year on other promising energy research? We should be spending many tens of billions a year on energy research of various kinds. **David Kramer**

New park will honor US atomic heritage

Provision ensures preservation of World War II-era structures.

A 15-year effort to save sites and buildings vital to the Manhattan Project as a national historic park paid off in December when President Obama signed the fiscal year 2015 National Defense Authorization Act. Tucked into the massive legislation was a provision instructing the Departments of the Interior and Energy to have the park open within one year.

The two agencies were told to conclude a memorandum of agreement delineating the roles of each in creating and maintaining the park. Interior's National Park Service (NPS) will most likely operate the park, which comprises World War II-era structures at the three locations where most of the development of the atomic bomb took place: Los Alamos, New Mexico; Oak Ridge, Tennessee; and Richland, Washington. DOE, which owns all the facilities, is expected to maintain them, says Cynthia Kelly, founder and president of the non-profit Atomic Heritage Foundation (AHF). Kelly was the major force behind the park's creation; she took early retirement from DOE in 2002 and has been lobbying for the park ever since.

"The park service is America's storyteller, and they will be the ones to take on this contested history and tell it in a way that will ask people to use

their critical thinking, learn about the circumstances in the context of World War II, and think through the ambiguities and complexities of what happened," says Kelly. She notes that the new park will be one of only a few

among the NPS that recognize industry.

Saved from the bulldozer

The park won't be fully formed in one year; the legislation designates more than 40 specific sites, many of them



ATOMIC HERITAGE FOUNDATION

J. Robert Oppenheimer's former home in Los Alamos, New Mexico, remains occupied but is open to the public at times. On the departure of the current owner, it will become a permanent part of the newly authorized national park honoring the Manhattan Project.