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A Matter of Policy

Brian Vastag
United States
14 April 2008

In early 2005, Joseph Helble, a chemical engineer, entered the legislative fast lane. A few weeks earlier, the most powerful tsunami in decades had swept across Southeast Asia. Senator Joseph Lieberman (ID-CT) wanted to know why that region lacked a tsunami warning system. So the senator turned to Helble, who was serving in Lieberman's office as a [Roger Revelle Global Stewardship Fellow](#). Each year, that fellowship sends one mid-career scientist or engineer to a government office or nonprofit organization to work on global environmental policy.

"We complain that these decisions are being made in a vacuum without significant scientific or engineering input. Well, the way to fix that is for scientists and engineers to get involved in the policy process." --Joseph Helble, dean and professor, Thayer School of Engineering, Dartmouth College

"I walked out of [Lieberman's] office figuring, okay, now I need to figure out how to do this," Helble says. The next few weeks were "incredibly hectic." Helble quickly studied tsunami warning systems. He spoke with "everyone and anyone" who worked on tsunami warning technology and consolidated his findings into a memo and presented it to Lieberman, who decided on the spot to sponsor a bill that would fund a \$30 million system. Soon after, Helble found himself answering questions at a press conference called by Lieberman to announce the legislation.

"It's not the sort of thing you're prepared to do in academic work," Helble says, "but it was very

illuminating how quickly things can get done when [a legislator] is committed to it."

Each year, several hundred scientists and engineers flood Capitol Hill and executive branch agencies in Washington, D.C., to get a taste of policy work. From 10-week get-your-feet-wet programs for graduate students to multiyear stints for tenured faculty

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members, scientists and engineers enjoy plenty of opportunities to explore science policy as a career path or as a means to broaden their knowledge and skills.

After their stints in Washington, D.C., scientists and engineers head in one of three directions, says Cynthia Robinson, director of [Science and Technology Policy Fellowships](#) at the American Association for the Advancement of Science (AAAS, the publisher of *Science* and *Science Careers*) in Washington, D.C.: They go back to academia, they stay in the policy world, or they decide to do something completely different.

Helble decided to return to academic life, becoming dean of the [Thayer School of Engineering](#) at [Dartmouth College](#). As an administrator, he constantly draws on his Washington, D.C., experience. "The skills I learned are directly transferable," he says.



Joseph Helble, now dean of the Thayer School of Engineering at Dartmouth College, worked for U.S. Senator Joseph Lieberman as a Roger Revelle Global Stewardship Fellow in 2004-2005.

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SAVVY SCIENTISTS

"Our goal is to have more policy-savvy scientists out there in the world," said Robinson. "We believe that's of value whether they stay in government, go back to academia, or go on to the private sector or to a nonprofit organization." Policy fellowships are also "a two-way street," she says, where legislators and government agencies benefit from the fellows' scientific and technical expertise.

[Text [continues below.](#)]

Policy Jobs for Former Fellows

Almost half of scientists who do the [AAAS Science and Technology Policy Fellowships](#) decide to stay in policy. Below are some job titles of former fellows:

- Associate Director, White House Office of Science & Technology Policy
- President, National Center for Policy Research for Women & Families
- Associate Director, Nicholas Institute of Environmental Policy Solutions, Duke University
- Senior Science Adviser, Office of Science Policy and Planning, National Institutes of Health
- Water Resource Specialist in Agriculture and Rural Development for South Asia, World Bank
- Senior Adviser, Regional Conflict, Democracy, and Governance, USAID (Kenya)
- Regulatory Analyst, Biotechnology Regulatory Services, U.S. Dept of Agriculture, Animal and Plant Health Inspection Service
- Special Policy Adviser to the Executive Director of the World Food Programme, Rome
- Program Officer, Science and Technology, Global Development, Bill & Melinda Gates Foundation
- Global Director, Fleet/Forces Department and Head, International Liaison Office, Office of Naval Research, U.S. Navy

Like Helble, about a quarter of all AAAS fellows return to universities or take other nonpolicy jobs. But almost half get "Potomac fever" and decide to stay in the policy world, either as a return fellow or as a full-time employee at their fellowship agency, at a different government

office, or at an outside organization.



Saharah Moon Chapotin, shown here with a few new friends in Varanasi, India, has done two policy fellowships, the National Academies' Christine Mirzayan Science and Technology Fellowship and the AAAS Science and Technology Policy Fellowship.

Saharah Moon Chapotin is one such fellow. She earned a Ph.D. in plant physiology from Harvard University but "kind of knew" she'd never become a professor. She first tried the 10-week [Christine Mirzayan Science and Technology Policy Fellowship program](#) offered by the U.S. [National Academies](#). Chapotin enjoyed working in Washington, D.C., so she applied for and won an AAAS policy fellowship, which lasts 1 year with a second often available. Chapotin is in her second year at the [U.S. Agency for International Development](#) (USAID), where she enjoys the "big picture" view that working on biotechnology safety issues provides--a view she never had in the lab. Chapotin is hoping to stay at USAID permanently to shepherd the projects she's been working on, such as a technology-exchange program with West African cotton breeders.

While Chapotin is working on policies related to her degree, many fellows find themselves treading unfamiliar ground. Katherine Seley-

Radtke, an associate professor of chemistry and biochemistry at the [University of Maryland, Baltimore County](#) (UMBC), spent a year at the [U.S. State Department](#) as a [Jefferson Science Fellow](#), a program for tenured faculty members. Jefferson fellows typically spend a year full-time at the State Department and then serve as informal advisers for 5 more years. Seley-Radtke was sent to Moscow as a scientist-diplomat to keep tabs on turmoil in the Russian Academy of Sciences. She soon found herself tasked with briefing top U.S. embassy officials on Russia's new nanotechnology initiative. As an organic chemist, Seley-Radtke wasn't an expert on nanotechnology. "But I certainly am now," she says.

As scientists, the Jefferson fellows "know how to go find the right information," Seley-Radtke says. And then they have to turn around and communicate that information to career diplomats and other nonscientists. As information "goes up the ladder, you certainly don't want the wrong information getting to the people who make policy decisions," she says. "You don't want the secretary saying the wrong thing. So you need to understand the technical details of a particular problem, even if it's not in your area, and then relate key points in a nontechnical way."



Katherine Seley-Radtke, associate professor of chemistry and biochemistry at the University of Maryland, Baltimore County, spent a year at the U.S. State Department as a Jefferson Science Fellow.

TAKING IT HOME

Over and over, former and current fellows emphasized written and oral communication skills as keys to success in the policy world. "The kind of writing you do, the quick memos, it's so different than writing grant proposals and papers," said Seley-Radtke, who returned to her lab at UMBC but continues to advise the State Department on bioweapon threats.

Helble added that learning how to negotiate on Capitol Hill with "people with a broad range of dearly held opinions" has served him well as a university administrator. Also, he says, "the time scale in academic life is very different. When an issue comes up [on Capitol Hill], you need to digest it, understand the science and the ramifications of the science, and put it together in a coherent one-page memo--and do that all within an hour." At a university, a similar project might drag on for months.

In her keynote address at the AAAS Annual Meeting in Boston, Massachusetts, in February, Nina Fedoroff, the State Department's top science adviser, emphasized the growing importance of policy-savvy scientists. She highlighted Alex Dehgan, a former AAAS science policy fellow at the State Department who persuaded former Iraqi weapons scientists to help rebuild their country. Dehgan, a behavioral ecologist and conservation biologist, also persuaded journal publishers to offer discount subscriptions to Iraqi scientists.

Fedoroff would like to see more scientists and engineers get involved in international relations. "The idea of serving as a science diplomat is only now getting on the radar screen of the average engineer and scientist," said Fedoroff. "But now is the time for scientists to stop going back to business as usual."

After his time in Washington, Helble, too, would like to see more of his colleagues take a similar path. "Look at all the issues--climate change, stem cell research, general environmental issues, health care, energy--that all have a fundamental scientific or engineering basis. And we complain that these decisions are being made in a vacuum without significant scientific or engineering input. Well, the way to fix that is for scientists and engineers to get involved in the policy process."

Policy Fellowships for Scientists and Engineers

In addition to the programs listed below, many professional organizations such as the [American Psychological Association](#) and the [American Chemical Society](#) offer annual policy fellowships to scientists. Check with the groups you belong to for opportunities in your field.

[AAAS Science and Technology Policy Fellowships](#). Each year AAAS offers two congressional fellowships and about 150 fellowships in executive branch agencies in the areas of diplomacy; national defense and global security; health, education and human services; and energy, environment, agriculture, and natural resources. Thirty partner professional organizations also offer congressional fellowships, administered through AAAS. Runs for 1 year beginning in September; sometimes a second year is available. Deadline: 15 December 2008

[AAAS Roger Revelle Fellowship in Global Stewardship](#). Provides a scientist with the opportunity to work on cross-disciplinary sustainability issues. One fellow is selected each year who then places him- or herself in a congressional office, an executive branch agency, or a nongovernmental organization. Deadline 15 December 2008

[National Academies Christine Mirzayan Science & Technology Policy Graduate Fellowship Program](#). Three 10-week programs each year introduce young scientists to science and technology policy. Deadlines: 1 June (for September), 1 November (for January)

[National Academies Jefferson Science Fellowships](#). Initiated in 2003, this fellowship places tenured science faculty members in key posts at the U.S. Department of State where they advise top officials and act as scientific diplomats. The fellowship runs for 1 year with an understanding that the fellow will continue to advise the State Department for 5 additional years. Deadline: 15 January 2009

[Presidential Management Fellows Program](#). A federal program "to attract to the federal service outstanding men and women from a variety of academic disciplines and career paths who have a clear interest in, and commitment to, excellence in the leadership and management of public policies and programs." Fellows, who must have a graduate degree, rotate through government agencies for 2 years. Deadline: December 2008

[The Royal Society \(U.K.\) MP-Scientist Pairing Scheme](#). Practicing scientists in the United Kingdom spend a "Westminster week" with a member of Parliament and are encouraged to maintain the connection. Deadline: Rolling.

[The Robert Wood Johnson Health Policy Fellowships Program](#). Up to 10 fellows spend a year in Washington, D.C., working on health care policy in executive branch agencies and legislative offices. Deadline: Will be announced in September.

<p><i>Science</i> magazine editor Bruce Alberts discusses policy fellowships in "New Career Paths for Scientists," this week's <i>Science</i> editorial. (Subscription or site license is required to view the full text.)</p>	
<p>Brian Vastag is a freelance science journalist in Washington, D.C.</p>	<p>Comments, suggestions? Please send your feedback to our editor.</p>
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