

proposals to bypass the inherently conservative disciplinary-specific external review process, said the American Mathematical Society's Sam Rankin, who chairs the Coalition for National Science Funding lobbying group. Many mathematicians are involved in interdisciplinary research, he says; Suncica Canic, professor of mathematics at the University of Houston, for example, has developed computing models to help guide the search for improved coatings for stents used in the treatment of coronary artery disease.

Other existing interdisciplinary mech-

anisms at NSF include grant solicitations in such topical areas as cyber-enabled discovery and innovation, water sustainability and climate, and mathematical geosciences. NSF-funded centers in science and technology, materials research and engineering, and science of learning bring together interdisciplinary research teams from academic institutions. The agency also supports interdisciplinary training programs such as the Integrative Graduate Education and Research Traineeship, Research Experiences for Undergraduates, and Interdisciplinary Training

for Undergraduates in Biological and Mathematical Sciences.

Emphasizing that CREATIV is a pilot project, Russell said NSF officials hope to find out whether anecdotal evidence of reviewers' bias against interdisciplinary research is real or perceived. "Part of the pilot will be to assess what sort of proposals come in, how out of the box are they, how strong are they, and [whether] this is something that we should continue to pursue," he said. That evaluation will determine whether the program will be extended into fiscal year 2013.

David Kramer

Science fellows find policy "a perfect fit"

"I feel like I'm an ambassador for science," says Anna Quider about her new position as a staff member for US Representative Russ Carnahan (D-MO). Thanks to a fellowship from the American Physical Society (APS), the University of Cambridge PhD astronomy graduate is now working on such issues as telecommunications, patent law, and education. "About halfway through [graduate school] I realized I didn't want the traditional academic career," says Quider, the daughter of a former politician in Buffalo, New York.

Quider is among more than 200 science and technology fellows serving 12-month terms in Congress and the executive branch. More than 30 scientific organizations partner with the American Association for the Advancement of Science (AAAS), which manages the fellowships, to place policy-minded scientists in federal offices or on committees that could benefit from their technical skills. This year the American Institute of Physics (AIP) and four of its member societies, including APS, are sponsoring nine PhD fellows.

The direct route

Like Quider, condensed-matter physicist Erin Boyd says she's "fairly certain" she will pursue a career in public policy once her fellowship expires. For now, the Harvard University graduate is working on energy, environmental, and agricultural issues as an APS fellow in the office of Senator Al Franken (D-MN). Boyd says she hopes to eventually become involved with the "more detailed nitty-gritty of implementing policy" that is typically done in the executive branch, but she is enjoying the process of crafting policy in the Senate.

"I've been interested in public policy

since I was a little kid," says chemist TJ Augustine, a Stanford University graduate. Cosponsored by the Optical Society of America (OSA) and SPIE, he is working on energy, environment, and health-care policy as a staff member for Sen. Dick Durbin (D-IL). Augustine views the AAAS program as "the most direct route [for scientists] to a career in policy." As a graduate student, OSA/Materials Research Society (MRS) fellow Laura Povlich decided to pursue policy after participating in a

Washington, DC, immersion experience coordinated by the Consortium for Science, Policy, and Outcomes at Arizona State University. A University of Michigan graduate with a degree in macromolecular science and engineering, Povlich is working in the office of Rep. Sander Levin (D-MI) on health-care policy and on health-technology innovation.

"I think [the policy world] is going to be a good place for me," says astrophysicist Meredith Drosback, a gradu-



Congressional fellows sponsored by the American Institute of Physics and its member societies this year. In the front row, from left, are Anna Quider, Laura Povlich, Erin Boyd, and Makenzie Lystrup; in the back row, from left, are TJ Augustine, Meredith Drosback, Rebecca French, and Ian Lloyd.

ate of the University of Colorado at Boulder and one of two AIP congressional fellows this year. As a staff member on the Senate Committee on Commerce, Science, and Transportation, she contributes to legislation that affects NASA and NIST. Drosback says she already has a clearer perspective on the difference between academia and politics: “[The former] is built on ideas and the other on relationships. In policy, reading a report is not as effective as talking to someone.” Also an AIP fellow, University College of London graduate Makenzie Lystrup is working in the office of Rep. Edward Markey (D-MA). Her portfolio includes nuclear nonproliferation, homeland security, and science R&D. Lystrup calls astronomy her “first love,” but says she plans to “stay in policy or at least in a role where I have the opportunity to translate science across different communities.”

The American Geophysical Union is sponsoring two congressional fellows this year: geoscientist Rebecca French and atmospheric scientist Ian Lloyd. A Virginia Tech graduate, French is working on climate change and environmental issues for Sen. Bernie Sanders (I-VT); she says her career goals include landing a senior scientist position at a non-governmental organization (NGO). Lloyd, a Princeton University graduate, is working on energy, environment, and foreign policy in the office of Sen. Jeff Merkley (D-OR). He, too, says he’s interested in working on science policy at an NGO or a nonprofit foundation. For now, he’s learning that the expectation for fellows is to “stick to the facts when you’re wearing your science hat. . . . [But] after you figure out the right policy, then you need to figure out the right politics.”

After a one-year hiatus, AIP has resumed its sponsorship of a fellow for the State Department; the recipient this year is Sarah Case, a condensed-matter physics graduate of the University of Chicago. Prior to her fellowship, Case served for three years as a program officer at the National Research Council, where she directed studies on the role of nuclear energy in the US future energy mix and worked with the Department of Energy on assessing proliferation risks in nuclear fuel cycles. She is now working on nonproliferation, export controls, and other science-related issues in the Chinese and Mongolian affairs office of the Bureau of East Asian and Pacific Affairs. “The State Department is a perfect fit for me,” says Case, who hopes to work on US-China relations following the fellowship.

High-value expertise

Many of last year’s AIP-affiliated fellows are following through with their stated intentions to pursue policy (see PHYSICS TODAY, January 2011, page 30). Particle physicist Chris Spitzer, who said last year that his AIP/AVS fellowship was “career-changing,” is now a AAAS fellow in the State Department’s Bureau of South and Central Asian Affairs. Atomic physicist Jason Day, who was sponsored by AGU, has extended his fellowship in Franken’s office. He says the importance of his role as a science expert struck him when he became responsible for briefing the senator and colleagues on the nuclear fallout implications following the Great East Japan Earthquake last year. “I realized that everyone placed a really high value on what I had to say, so I had to make sure I got it right.”

With his OSA/SPIE fellowship, which he extended to work with the Senate Committee on Energy and Natural Resources, atomic physicist Marcicus Extavour worked on legislative proposals in response to the reduction in supplies of rare-earth metals from China and helium from the federal reserves. Ecologist Ilya Fischhoff, who extended his AGU fellowship to work with the House Committee on Natural Resources, says he enjoyed preparing staff members for committee hearings and “seeing the debates up close.”



Sarah Case,
AIP State
Department
Fellow

Plasma physicist Laura Berzak Hopkins, an APS fellow last year, has accepted a research position at Lawrence Livermore National Laboratory. From her experience on the House Committee on Foreign Affairs and in the office of Sen. Kent Conrad (D-ND), Hopkins says she learned that “the reality of the political arena is that everything has to be some form of compromise.” Last year’s OSA/MRS fellow Ashley White is now a AAAS fellow in NSF’s division of materials research. A materials scientist, White says she intends to return to academia, but she credits her experience working in Franken’s office with giving her a better perspective on the impact of government policy on higher education.

For details on sponsorship through AIP or its member societies, visit <http://aip.org/gov/fellowships.html>.

Jermey N. A. Matthews ■

Recently on
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► Down to Earth

In a new online department, Rachel Berkowitz reports on the science of Earth and its planetary relatives. Besides writing for PHYSICS TODAY, Berkowitz develops volcanic eruption models at Cambridge University, where she’s working on her PhD.



◀ Points of View

Geophysicist David Smythe argues that the existing scale for characterizing the severity of nuclear accidents is inadequate. It should be replaced, he says, with a scale similar in nature to the one used for earthquakes.

► Singularities

In a Q&A with PHYSICS TODAY’s Toni Feder, Randi Ludwig talks about the difficulties and delights of starting a family while working toward her undergraduate degree in physics. She is set to earn her astronomy PhD next summer and, influenced by being a mother, is veering toward a career in astronomy education.



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