GRADUATE TRAINING

Sharp Jump in Teaching Fellows Draws Fire From Educators

A drop in the number of prestigious research fellowships and a rapid rise in a new program that sends students into public schools prompts questions

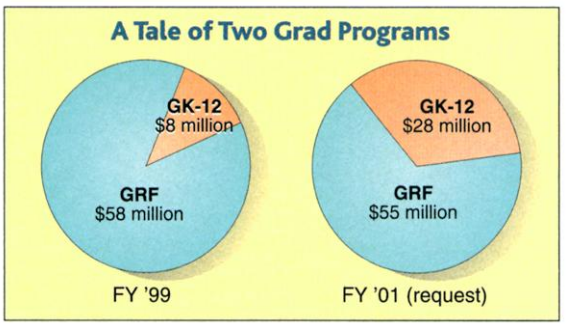
For almost half a century, the National Science Foundation's graduate research fellowships (GRFs) have been among the most prestigious and sought-after awards for aspiring young researchers. They have helped launch the careers of tens of thousands of scientists. Next year, however, the agency is shrinking the program while it expands a new effort that puts graduate students to work in public schools. The shift, contained in NSF's 2001 budget request to Congress, has led to pointed questions at two recent NSF hearings and are drawing flak from some university officials.

Critics say that NSF's spending plan reflects a continued erosion of the $55 million GRF program (see graph) and an overhasty expansion of the teaching fellows program—a proposed 165% increase, to $28 million—before it has been proven effective. NSF officials dispute both points. They argue that they are strengthening the research fellows program by raising stipends, which are now so low that they are driving away good applicants. Scaling up the teaching fellows program, they add, is part of a broader and much-needed push to encourage universities to help improve precollege science education.

The research fellows program is much loved in the research community. Fellows compete for a 3-year grant to work in a lab of their choice. It is "the sterling silver program in federal graduate education," says Chris Simmons of the Association of American Universities. "Any cuts are a cause for concern." Indeed, last fall, as part of its 50th anniversary celebration, NSF compiled a loving tribute to the GRF program in which Harvard biologist E. O. Wilson, a member of the inaugural class of 1952, writes that news of the awards "fell like a shower of gold" on him and other recipients and opened up a career in research.

Although the GRF program is NSF's most prestigious program to support graduate students, the agency funds far more students through grants to investigators. These tie the student, typically hired as a research assistant, to a particular professor and institution, and NSF has little control over their training. NSF also runs a program, called Integrated Graduate Education and Research Training (IGERT), that gives awards to universities to pick their own students in selected fields. Although NSF can attach strings to these grants, their major purpose is to build a cadre of researchers in burgeoning fields.

Rita Colwell added a new program to this portfolio shortly after becoming NSF director in August 1998. It gives budding researchers a chance to share their knowledge and enthusiasm for science with beleaguered public school teachers and their students. The graduate teaching fellows (GK-12), she argued, might also help to reverse recent test results that ranked U.S. high school students at the bottom in global measures of science and math achievement. Awardees spend 10 to 15 hours a week in school, aiding teachers and supplementing class lessons. "This program may seem small," she told legislators last year about an initial $7.5 million investment, "but it has a potential impact well beyond the dollars. It will broaden graduate education and boost the science, engineering, and technology content in K-12 classrooms."



Bigger slice. Teaching fellows program (GK-12) is growing rapidly while the older research fellows program (GRF) shrinks.

By next year Colwell hopes to spend $28 million on the program, nearly matching the $31 million IGERT program and more than half the size of the GRF program. In contrast, the GRF budget is scheduled to drop by $500,000 in 2001, and the number of GRF fellows it supports would fall from 900 to 850, after peaking at 1000 in 1997. The cuts will allow NSF to finance a $1000 boost in the stipend, to $16,200; GK-12 fellows receive $18,000. "We'd like to get up to $18,000 by 2002, and we also want to boost the size of the educational allowances [universities receive $10,400 in administrative expenses for each fellow]," says NSF education chief Judy Sunley. "To do that we needed to make a small cut in the research fellowships." Ultimately, says Sunley, "we would like all three [graduate programs] to be the same size."

University lobbyists, unhappy with NSF's decision to hold GRF's budget flat, are walking a fine line. They don't wish to jeopardize the agency's overall request for a 17% increase by making a stink over a tiny piece of the pie. But they hope to convince Congress to raise the GRF stipend to $18,000 this year. "It shouldn't be a competition," says Nan Wells of Princeton University's Washington office, which has pushed hard for the research fellowships. "The GRF is a national talent search—and it's produced 18 Nobel laureates. I don't understand why NSF can't expand both programs."

Some admit, however, that they have reservations about the underlying premise of the GK-12 program. "A lot of graduate students don't know how to teach. So why are we sticking them in the schools?" asks Michael Lubell of the American Physical Society. Gerald Wheeler, executive director of the National Science Teachers Association, worries that many professors might regard the teaching fellowships as "just another way to get additional lab help. ... Most professors don't care about who's teaching their introductory lab courses," he argues, "so why should they care about improving instruction in the public school down the street?"

That message has registered on Capitol Hill. At separate hearings, Representative Nick Smith (R–MI), chair of the Science Committee's basic research panel, and Representative Rodney Frelinghuysen (R–NJ), a member of the spending panel that oversees NSF, pushed NSF officials to explain their actions during a review of the agency's overall budget. Smith was particularly concerned about expanding the GK-12 program before any evaluation had been carried out. "How do you know it's working?" he asked Sunley. "It's too new to know," she acknowledged, "but we plan to monitor it."

If resources are tight and the teaching fellows program has no track record, many educators wonder, why then is it growing so rapidly? "Even if it turns out to be a good idea, wouldn't it make more sense to do [the GK-12 program] in a few schools and see what happens?" asks Lubell. But Colwell is convinced that the GK-12 fellows program will work. "I've had so many young people tell me they are excited to have a chance to do this," she says. "I'm sure that it's going to be a great success."

—JEFFREY MERVIS