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### Taken for Granted: Help Is on the Way (for Some)

Beryl Lief Benderly  
United States  
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On 10 and 11 March, the world watched mesmerized as the dazzling career of New York Governor Eliot Spitzer collapsed in a blaze of high-priced hypocrisy. Had the exploits of Client 9 not completely hijacked the media, the nation might have spent part of that week contemplating career problems of a less spectacular sort: those plaguing the nation's young scientists.

Early-career issues for postdocs and other researchers who deserve better

That, at least, had been the intention of several prestigious research institutions, which had designed events for those 2 day to raise public and congressional awareness of junior researchers' pressing need for more money.

Monday the 10th kicked off with an announcement by the Howard Hughes Medical Institute (HHMI) of a major new grant program that will award generous multiyear support to promising but hard-pressed younger lab chiefs. The next morning, a news conference at the National Press Club in Washington, D.C., highlighted a plea by a consortium of major recipients of federal dollars--Harvard, Brown, Duke, Ohio State, and Vanderbilt universities, UCLA, and Massachusetts General and Brigham and Women's hospitals--for increased funding from the U.S. National Institutes of Health (NIH). An "unprecedented" 5 years of flat or declining budgets at the world's largest biomedical research funder is putting "at risk" not only a generation of young scientists but also the treatments and advances that more money would make possible, states a glossy report, *A Broken Pipeline?*, issued at the conference. Later that day, Harvard President Drew Gilpin Faust, Johns Hopkins University dean of medical faculty Edward D. Miller, and other notables repeated the call in testimony at a [hearing](#) of the Senate Committee on Health, Education, Labor, and Pensions.

In any ordinary week, such an array of academic star power, backed by pricey PR arrangements, would very likely have collared impressive ink in major newspapers and respectful airtime on high-toned news and talk shows. But against the spectacle of the crusading former prosecutor turned reform governor going down in self-started flames, academic researchers didn't stand a chance. Instead of pondering whether the nation should spend more for science, Americans marveled that Spitzer had spent so much on sex.

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## EARLY MONEY

For those concerned about early-career research funding, lately there has been a lot of news to think about. In addition to HHMI and *Broken Pipeline*, the U.S. National Science Foundation (NSF) made a proposal of its own, announcing in February that its 2009 budget request calls for a 19.1% rise in funding for graduate education. That translates into an extra \$28.6 million to be spent on 700 additional NSF graduate fellowships annually, in addition to the approximately 900 awarded annually in recent years.

Despite the bad timing on the media front, these efforts reflect important new attention to early-career scientists on the part of some very significant science policy players. If all works out as hoped, it could mean real bucks in the budgets of researchers caught in today's brutal funding vice. Even so, the new initiatives would benefit only a small fraction of today's struggling young scientists, some at the very beginning of their intellectual development and a relatively tiny number who have already cleared the single greatest hurdle facing aspirants to academic research careers.

For the tens of thousands of young researchers caught in the middle--those who have finished their graduate work but find themselves trapped in other people's labs, unable to escape to establish their own--the current plans offer nothing. The new initiatives neither increase the number of tenure-track or comparable jobs for which postdocs can compete nor offer any alternate framework in which frustrated scientists could pursue careers. In fact, increasing the number of people pursuing science Ph.D.s will very likely make those problems worse.

The Hughes program, known as the [2009 HHMI Early Career Science Competition](#), pledges an extraordinary \$300 million for generous, 6-year awards to "as many as 70 early career scientists from a wide range of scientific disciplines relevant to biological and medical inquiry" to be chosen in 2009. It also promises a similar amount for a second group to be chosen in 2011. These individuals, the "nation's best," must be tenured or tenure-track faculty members or holders of equivalent positions at one of approximately [200 institutions specified by Hughes](#). Applicants must have 2 to 6 years' experience running their own labs and be at "a critical point in establishing their own vibrant, independent research programs."

HHMI "decided to focus on scientists who have led their own laboratories for several years because many of these scientists are at a high point of their creativity just as they see their start-up funds and early-career awards ending," according to a statement by HHMI President Thomas R. Cech

The scientists of concern to the *Broken Pipeline* project have also already attained the tenure track at topflight research institutions and thus form a small percentage of the tens of thousands aspiring to and--at least according to the justification that universities offer for meager postdoc pay--training for research careers. The dozen young researchers highlighted in the report--a photogenic array of genders and ethnicities whose potentially important medical research and promising careers are reportedly being stymied by today's bruising NIH paylines--are all assistant or associate professors at major research universities or hospitals.

## BETTER INCENTIVES FOR SCIENCE?

The NSF proposal also raises questions about its consequences for the fate of the young scientists who rank below the elite competitors of interest to HHMI and *Pipeline*. The new budget request reportedly is based in part on [research by labor economist Richard B. Freeman](#) of Harvard and the National Bureau of Economic Research (see this [related article](#) in *Science*). Freeman and colleagues have suggested that increasing the number of NSF fellowships will not dilute the quality of those receiving the prestigious and reasonably lucrative awards (which begin at \$30,000 a year to the student plus \$10,500 annually to the host universities) and "could attract some potentially outstanding science and engineering students who would otherwise choose other careers." Presumably, the increase would meet a national policy goal of raising the number of Americans pursuing graduate work in science, because only citizens and permanent residents may win NSF graduate fellowships.

In other work, however, Freeman has written that "the job market for young scientists and engineers in the U.S. has worsened relative to job markets ... in many other high-level

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occupations, which discourages U.S. students from going into these fields," and that "the job market in most [science and engineering] specialties is too weak to attract increasing numbers of U.S. students." Although acknowledging that "an issue" exists between these statements and the ones advocating more NSF fellowships, Freeman tells *Science Careers* in an interview that "if we increase the amount of support for people in their graduate studies, which is 4 or 5 years of their life, it's a big economic incentive for them" to study science.

When NSF doubled the size of its graduate stipends several years ago, "they got so many more applicants. That means that people really will respond to money early on in their careers," Freeman says. Although larger and more numerous fellowships will "lure people in," Freeman notes, they will not increase long-term career opportunities. That would take substantial increases to the nation's R&D spending, a move he also supports. "If when [fellowship winners] graduate with their Ph.D., the job market it not very good, they'll go off into other activities, which is what people have done in the past." But at least, he says, they would have been paid well for their years of study, and more bright young Americans who love science would have the chance to try their luck at launching scientific careers, whether in academe or elsewhere.

That a number of influential institutions have begun taking concrete steps toward resolving at least some of the career challenges confronting today's struggling young academic scientists is definitely a positive sign. But the fact that these efforts completely ignore postdocs--and the big-picture dysfunction in the current science-career landscape--ought to serve as a sign of a different kind: that those academic careers will be open to only a small, select minority. The rest would be well advised to seek opportunities elsewhere. And policymakers need to give serious thought to the danger that the increasingly brutal--and for the overwhelming majority, futile--competition to join the tenured, funded elite is very likely persuading our most talented young people to seek careers in fields that offer a better shot at success than science does, to the detriment of the nation's scientific enterprise. Those are messages that need to get out no matter what else is absorbing the nation's attention.

Beryl Lieff Benderly writes from Washington, D.C.	Comments, suggestions? Please send your feedback <a href="#">to our editor</a> .
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