POSTDOCS

Fewer Young Researchers Are Seeking NIH Grants

Call it the case of the missing young biologists. A new report* issued last week by a panel of the National Research Council has set off an "alarm," according to Rockefeller University president Torsten Wiesel, by documenting an unexpected decline in young researchers seeking grants from the National Institutes of Health (NIH). The number of biologists under age 37 applying for independent NIH grants plummeted by more than 50% in the past 8 years, while applications from their older colleagues rose by more than a third.

These findings certainly seemed to spread alarm among many leaders of the biomedical establishment, who met last week at the National Academy of Sciences (NAS) to discuss the new report. Princeton University molecular biologist Shirley Tilghman, who co-chaired the panel with Wiesel, speculated that the future of biomedicine "is really at risk here." NAS President Bruce Alberts said the drop-off "could endanger the whole system" of academic biology by robbing it of new blood. And Mary Clutter, assistant director for the biological sciences at the National Science Foundation, found it "disturbing," especially since researchers in the life sciences are already "older than people in any other discipline when they get their first real job."

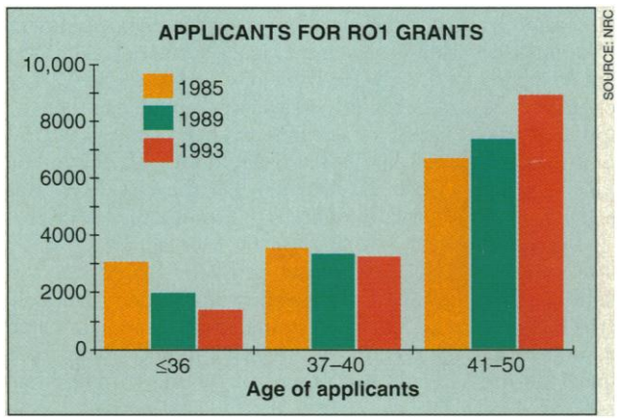
Despite the hand-wringing, however, the report did not explain what has caused the decline in young grant applicants. Alberts said the panel only uncovered data revealing this trend late in its term and didn't have time to explore them fully. That will be done in another study. But Alvin Lazen, executive officer of the academy's Commission on Life Sciences, cited several hypotheses that might explain what is happening, including the possibility that postdocs may be taking temporary jobs as research associates and "circling the airport" for longer periods before settling in and submitting their own grant applications. He also noted that more women have been receiving Ph.D.s, and that the system may be taking longer to award them tenure—a prerequisite to seeking certain NIH grants. Another possibility, Lazen said, is that foreign-born Ph.D.s may be returning to their home countries rather than staying in the United States and applying for grants.

But not everyone in the audience found the trend alarming. For example, David Smith, director of the division of health effects and life sciences research at the Department of Energy, said he was "not particularly concerned" if the decline in grant seekers means that industry, with its growing R&D budget, is hiring more young biologists.

The people most likely to shed some light on where the missing young grant seekers have gone—the biology postdocs themselves—were absent from the gathering. They hadn't been asked. They inhabit a no man's land between the world of students and faculty that is becoming more treacherous every year. Even the "fast-trackers," says Samuel Silverstein of Columbia University, are having trouble. Steven Kaminsky, director of a developmental biology program at NIH, summarized the tales of woe related by 40 of the best and brightest young researchers in his program, who met recently to talk about research and funding. For example, Kaminsky said, successful postdocs are often encouraged to obtain fellowships, like NIH's F32 awards, which provide a survival salary of $20,000 to $32,000 per year. But when researchers win these awards, Kaminsky said, universities often treat them as private contractors and cut off health coverage—making it much more difficult to stay afloat.

The NAS report focused only on applicants for NIH funding, as Tilghman explained, because NIH is the only agency that could provide reliable data. Specifically, the panel looked at two sources of support for independent biologists: R29 grants, which provide up to $70,000 per year for 5 years and are designed for young researchers, and the traditional investigator-initiated RO1 grants. Both Tilghman and Kaminsky said that most researchers doing high-cost mammalian genetics work don't even apply for an R29 these days. They prefer to take their chances in competition for the more generous RO1 grants, which have no upper limit and provided an average of $194,000 in 1992. But only about 10% of these are getting funded today, all of which adds up to a discouraging picture.

Indeed, Kaminsky said, even well-established biologists are finding it hard to win grants, and young researchers may be turned off by the "grumbling" they hear from their elders. Many are understandably preoccupied with "food and shelter," and they know they can earn bigger salaries and face fewer bureaucratic hurdles in industry. And that's where many are going, Kaminsky guessed.



Missed youth. The number of grant applicants younger than 37 dropped by 54%; during this period, the number of Ph.D.s awarded in biological sciences rose by about 20%.

A big boost in NIH's budget would go a long way toward solving the problems facing young biologists in the universities, but given the current dismal funding climate, the panel made some more modest recommendations. The panel urged NIH to increase the maximum size of R29 grants to $125,000 per year. It also suggested that NIH create a special program for young biologists, including a fixed pool of money earmarked for R29 grants and a study section devoted to reviewing R29 applicants. Deputy NIH director Ruth Kirschstein said NIH was already reviewing the idea, but she wasn't able to estimate the cost or the likelihood of its being adopted.

Alberts also noted that it is important to find out precisely what is happening to the missing grant applicants. To that end, Lazen has already drawn up a plan for a new study, including possibly a survey of postdocs, to learn how biologists coming of scientific age in the next decade will support themselves.

Unless the problems facing young grant applicants are eased, Alberts told *Science* in a phone interview, the United States could end up in a decade with "a very old population of researchers doing biology," while young people are "buried in a subservient position" waiting for a chance to explore original ideas. "I don't think Americans have the patience of the Japanese, who wait until they're 45 to do something they really want to do," Alberts said. If the system becomes sclerotic, Alberts fears, young people will simply walk away from university labs, and "we won't have the same quality of people teaching" science any longer.

–Eliot Marshall

*"The Funding of Young Investigators in the Biological and Biomedical Sciences," National Research Council, Washington, D.C.