Just Give Them Grants

THE INTERDEPENDENT GOLD STANDARDS OF A SUCCESSFUL CAREER IN ACADEMIC RESEARCH are publication in prestigious journals and securing funding for one’s independent research. There has been much discussion among scientists and funders about how best to launch such a career and how to fill the pipeline of young scientists to sustain the momentum of science (see also discussions at www.sciencecareers.org).

A major problem is that in many countries, research funding is quite constrained, so it’s getting increasingly difficult for new investigators to secure their first grants. As a result, investigators are older and older when they finally begin independent work. On average, a recipient of a Starting Independent Researcher Grant from the European Research Council (ERC) is 35.6 years old and about 6 years past earning the Ph.D. New investigators supported by the U.S. National Science Foundation are also typically 6 to 7 years post-Ph.D. In the biomedical sciences, the average age at which an investigator first obtains a regular research grant from the U.S. National Institutes of Health (NIH) is 42 for a Ph.D. and 44 for MDs. No wonder there is concern about filling the pipeline of scientists. One has to wait until near middle age before getting one’s own research program in full gear. (Next month, the American Academy of Arts and Sciences will release a report on supporting young investigators and high-risk–high-reward research.)

This prolonged wait for a grant is not the only problem. A new investigator often has to have completed two or three postdoctoral training periods before securing a tenure-track position. As emphasized in the U.S. National Research Council’s 2005 report, Bridges to Independence, this extensive post-Ph.D. training, in which one often focuses on a mentor’s research agenda rather than one’s own, may stifle innovation and overly narrow young scientists’ interests. If this is true, our models for postdoctoral training need revision.

Virtually every research funding agency has experimented with approaches to recruiting and funding young scientists, and many have been abandoned. Some small seed-grant programs were discarded because they didn’t provide enough resources. Some special programs have included mentoring components on the basis of the argument that even after substantial postdoctoral training, young investigators would benefit from even more lab leadership training. And some special programs have been abandoned because their awards were more stigmatizing than beneficial. One such example is the FIRST Award (R-29) from the NIH, given up in part because many universities treated it as funding for those who could not get a “real” regular research grant, and thus it was not credited toward getting tenure. This argues for uniformity in how we support new investigators, instead of mounting special programs. One possibility is to review new investigators as a group, rather than having them compete with more seasoned investigators with established track records and extensive preliminary data.

What should we do? If the consensus is that young scientists really need a regular research grant to launch their careers, why not simply tilt funding decisions more toward new investigators? After all, there are many more meritorious proposals from junior investigators—which have passed muster through peer review—than can be funded. The tilt would, of course, result in fewer senior investigators getting funded or receiving multiple grants, but if we are genuinely concerned about the pipeline, we will need to make this tradeoff.

Some such initiatives have begun. Last year, the proportion of NIH research grants going to new investigators was over 25% for the first time in nearly a decade. The ERC plans to award about one-third of its frontier research funding as Starting Grants. And the United Kingdom’s Medical Research Council is providing protected research time for younger faculty through New Investigator Research Grants.

These endeavors are clearly a start, but the number of young investigators being funded is still relatively small. More such efforts are needed to encourage young scientists who are contemplating research careers and to foster innovation and creativity while they are at their peak. This would demonstrate a real commitment of the scientific enterprise to ensuring its own continuity.

— Alan I. Leshner

10.1126/science.1159794