



nature neuroscience

Listening to postdocs

Many groups have expressed concern about the low pay and poor job prospects for young biomedical scientists in the US; at last, there are signs that the message is being heard. The National Academy of Sciences (NAS), whose mandate is to advise the US Congress on matters of science policy, last year published a report, *Addressing the nation's changing need for biomedical and behavioral scientists*, which made a number of recommendations. The NIH has now responded to this report, and there is both good news and bad news in their reply. The good news is a promise of substantially larger stipends for both graduate students and postdocs. The bad news is that the NIH position does not address some of the deeper structural problems that underlie the current concerns.

The present funding situation for students and postdocs reflects a fundamental tension between two aims. In one view, the purpose of these programs is to train young scientists to prepare them for independent research careers. The other view is that they are hired hands, paid to research a specific field because it is in the national interest. This dichotomy is embodied in two different funding mechanisms, with different philosophies.

The first is the National Research Service Award (NRSA) program, whose explicit purpose is to train young scientists to become independent investigators. NRSA's are awarded to individuals, either directly or via institutional training grants; they are competitive (applicants are evaluated on their track record, the strength of the proposal, and the overall training environment) and prestigious. As the NAS report describes, the number of NRSA's has been deliberately limited over the years, to ensure that the supply of newly trained scientists is matched to the likely demand.

Although the NRSA program has remained almost constant in size since its inception in 1974 (it currently makes around 15,000 awards per year), the last quarter-century has seen a large increase in the number of students and postdocs funded by a second mechanism, namely support from research grants. The funding for these positions has a fundamentally different rationale; a research grant is awarded for a specific research project, and applications are evaluated on the project's perceived importance and likelihood of success, not on its value in training the people who will be hired to work on it. Unlike the NRSA program, there is no attempt to control the numbers of young scientists who are funded through research grants, and whereas NRSA's are open only to US citizens and permanent residents, there are no such restrictions on grant-based funding.

The NIH has now announced a plan to make substantial increases in the NRSA stipends. The values of these stipends were never high, and over the years the postdoctoral stipend in particular has been steadily eroded by inflation (recent increases notwithstanding). The current rates for graduate students and first-year postdocs—\$16,500 and \$28,260 respectively—are frugal to say the least, and in the context of expensive cities such as

San Francisco or Boston, they are little short of dismal. But the NIH plans to increase these by 10–12% per year until they reach new targets of \$25,000 and \$45,000, after which their value will be maintained through annual cost-of-living adjustments.

This is welcome news, not only for NRSA recipients but also for young scientists generally. The NRSA scale has historically been a benchmark for setting grant-based salaries as well as private fellowships; although universities are not obliged to follow the NRSA scale, they are likely to do so to avoid disparities, and the NIH will encourage grant applicants to take account of the new figures when setting their own budgetary requests.

The NIH should be applauded for taking a leadership role in boosting the income of young scientists. The applause will be tempered, however, for at least two reasons. First, the NRSA program will remain closed to foreigners. The NAS argued that there is no clear rationale for this policy; foreign scientists frequently stay in US after they have completed their studies, and even if they return to their home countries, they are still likely to contribute to the growth of biomedical knowledge and global health. The NIH pays lip-service to these arguments, but seems unwilling to act on them. Admittedly, it may be difficult to persuade Congress that they should be paying to train foreigners, but it can be argued that the current system institutionalizes the idea of foreign scientists as hired labor rather than future colleagues. Certainly, this perception is reinforced by the current salaries, which may be attractive by (say) Chinese standards but are unacceptably low to many Americans.

Second, neither the NAS nor the NIH seem inclined to confront the hard question of how many new researchers the system should produce each year. The NAS report acknowledges that the supply currently exceeds the demand; the US awards about 5400 biomedical PhDs per year, whereas even by the year 2005, the NAS estimates that demand for trained researchers will not rise much above 3000. Despite these estimates, however, the NAS recommended only stabilization—not reduction—in the number of new PhDs, on the grounds that any decrease might disrupt the research enterprise. Yet the NIH appears to reject even this modest recommendation, on three grounds: they argue that the NAS projections are unreliable, that the specific NAS proposal for controlling numbers (to shift resources away from research grants and back into the NRSA program) is inappropriate, and that responsibility for graduate student and postdoctoral enrollments lies not with the NIH but with universities.

Clearly it would be in nobody's interests to see the research enterprise collapse for lack of manpower. But nor should it become chronically dependent on young people being willing to invest a decade or more, working long hours for low pay, in pursuit of jobs that may never materialize. The fact that the NIH is willing to raise stipends is certainly encouraging, but it is still only the first step toward real reform.