Commitment to Graduate Students?

As a disgruntled, underemployed, unfunded, and almost disenfranchised Ph.D. scientist, I feel qualified to comment on Floyd E. Bloom's editorial "Future imperfect and tense" (14 Feb., p. 907). I suggest that any educational institution which grants a doctoral degree to someone must, if that person becomes unemployed for a significant time, provide him or her with a full-time position at that institution with an office, laboratory, and start-up funds. The commitment would be available only up to, say, 20 or 25 years after the degree is granted. After that, the former student would be on his or her own.

I suspect the initial response will be, "You gotta be kidding!," but we should remember that a graduate student puts much time, effort, and commitment into getting a doctoral degree. Why should we not insist that the granting institution put a commitment into it also?

One major consequence of this type of commitment on the part of colleges and universities would be that they would be much more circumspect about granting a new degree, and the number of new grantees would drop considerably. We have been turning out Ph.D.'s with the help of federal money for many years now, and it is time we developed a monitoring system to prevent a severe overabundance from occurring again. Undoubtedly, colleges and universities will complain: "That would take too much money, money that we don't have." Undoubtedly it would, but with graduate student enrollment severely curtailed at the same time, the money saved from graduate student salaries and tuition could help defray the new expenses.

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Research and Regulation at FDA

The ScienceScope item "Big cut in FDA biologics research" (14 Feb., p. 915) states that the Center for Biologics Evaluation and Research (CBER) of the U.S. Food and Drug Administration (FDA) is about to lose nearly 100 researcher/regulator positions because the proposed user fee law would exclude funding for any research positions or programs. In order to eliminate 100 research positions, however, the actual number of scientists who will be "reprogrammed" may be double that number. CBER scientists (of which I am one) traditionally spend half of their time on research and half on product review. To remove one full-time equivalent from research, the proposed law is being interpreted to require CBER to fire two scientists.

Over the past 35 years, these research/reviewers have served CBER and the public well, winning two Lasker awards, including one in 1996 to John Robbins for *Haemophilus influenzae* type b vaccine. At the same time, these scientists have brought the latest research findings to bear on regulating the vaccines recommended for every child in the country and the blood used in operating rooms more than 8 million times each year. This is not "wasted time." Because of its scientific expertise, CBER was given jurisdiction over the products of biotechnology. At a time when many of these new products are entering the drug pipeline, it would be a serious mistake to fire up to 40% of our laboratory-based scientists.

Once FDA started collecting user fees, it was imperative to make a clear distinction between the right to an efficient review and the appearance that regulated industry could now dictate CBER decisions. Ultimately, FDA must answer to the public,

who rely on CBER to maintain the standard of safety and efficacy in biologics that is so fundamental to public health.

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German Academe

Sanford L. Segal (Letters, 8 Nov., p. 905) asserts that the German faculty that remained under and after the Nazis were not lesser talents. Evidence for the decline and slow recovery of German science may be gleaned from many sources besides the impressions of the historically informed. For example, using the number of Nobel prizes awarded in physics, chemistry, and physiology-medicine, and comparing the national distribution during three time periods (before the Nazis came to power: 1901–1932; the Third Reich and reconstruction periods: 1933–1963; and the recent past: 1964–1994), we see that German prizes declined significantly from before to after Hitler and then remained depressed, while U.S. prizes continued to increase, and U.K. prizes remained relatively constant.

Other measures of scientific productivity and efficiency, such as number of papers published per billion dollars of gross national product (A. Anderson, Science in Japan, 23 Oct. 1992, p. 564) also point to Germany's relatively depressed contemporary scientific stature compared with the prewar period. However, such measures do not readily allow historical comparisons.

Segal posits the existence of a prejudice that only "under democratic-republican forms of government can good science be done" and gives the example of U.S. politicians believing that they could keep atomic weapons out of the hands of the Soviets. My position is that rigidity on the part of German academics and administrators has blocked scientific development at least as much as did the former totalitarian government. Furthermore, the Soviet acquisition of nuclear technology owes at least as much to espionage (and possibly direct passing of atomic secrets by U.S. scientists) as to Soviet science.

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