

GRADUATE EDUCATION

Report Advocates "Value-Added" Ph.D.

The essence of the scientific Ph.D. in the United States should not be changed, despite dramatic alterations in employment and funding for researchers who hold the degree. That's the bottom line from a new National Academy of Sciences (NAS) report* released this week, although the report did advocate training Ph.D.s in a broader range of skills to make them more flexible in an uncertain job market.

A panel of the NAS Committee on Science, Engineering, and Public Policy (COSEPUP) has rejected the idea—which has been floating around since the '70s—of modifying Ph.D. training to abbreviate research requirements for scientists not planning academic research careers. The group also rejected the idea of imposing controls on graduate enrollments.

Panel Chair Phillip A. Griffiths, director of the Institute for Advanced Study in

Princeton, New Jersey, says his group solicited comments from industrial employers, university academics, and Ph.D. students. The issue of whether scientific Ph.D.s are overeducated for today's needs was "an open question in our minds when we started," he says. But from the industrial sector in particular, the panel got the message that "the experience of having conceived and carried out an original product was invaluable," he says. So it rejected the notion of an abbreviated doctorate—"one that critics might think of as 'Ph.D.-lite,'" says the report.

Yet some changes do need to be made, the panel says. It favors de-emphasizing research assistantships in favor of training grants in order to give graduate students more flexibility. And students are going to have to develop a much broader range of skills, says the report—"especially the ability to communicate complex ideas to nonspecialists and the ability to work well in teams." As a model program, the panel cites the "value-added Ph.D" at Drexel University in Philadelphia, which emphasizes the acquisition of business

knowledge and policy studies.

A central message of the report is that students need access to timely information about the job market as they make their educational decisions. Says Griffiths: "What struck us ... was time and again people were saying they just wished they had better access to information." The panel therefore calls for a "national database on employment options and trends" that includes up-to-the-minute information on graduate programs, financial aid, and placement rates. Academic departments should get more detailed information on the fate of their students. The National Science Foundation is already on this particular case: Officials are meeting next week with information-systems specialists from 15 scientific societies to explore how to improve employment data.

Despite these tweaks, the COSEPUP panel is basically defending the status quo, says David Goodstein, vice provost of the California Institute of Technology. That posture may not appeal to job-hungry grad students. "What they propose may be right," Goodstein says. "But I can't escape the feeling that this is a committee of the winners, and what they're saying is 'Don't change the rules.'"

—Constance Holden

* "Reshaping the Graduate Education of Scientists and Engineers," available from the National Academy Press. Call 1-800-624-6242.

NUCLEAR WASTE

Academy Fends Off Charges of Bias

The National Academy of Sciences (NAS) is at ground zero in the latest debate over possible sites for the long-term storage of radioactive wastes. A group of U.S. senators, state lawmakers, and the academy's own members have accused the NAS of conflict of interest, bias, and excessive secrecy in studies now under way of potential dumps in three states. They've asked NAS President Bruce Alberts to investigate the work of its Radioactive Waste Management Board, which is overseeing the studies. Alberts disputes their charges, saying the board's review is impartial and that the academy has followed its usual procedures in assembling experts.

The controversy stems from reports that the board has ordered on the environmental and geological characteristics of proposed dump sites in Nevada, California, and New York. The Yucca Mountain site in Nevada would handle highly toxic waste, while the Ward Valley site in southern California and an undetermined New York site would store low-level radioactive waste. The studies are being conducted by temporary committees set up last year by the board.

The panel conducting the Ward Valley study was targeted by Senator Barbara Boxer (D-CA), who first complained to Alberts last May. But the politicking has heated up in the past month. Politicians from all three states lashed out at the academy in separate

letters to Alberts, and six NAS members from the University of California, San Diego (UCSD), asked him to appoint a special investigation team "to protect both scientific credibility and ensure public safety." On 23 March Senator Richard Bryan (D-NV) asked Alberts to establish an independent commission. On 27 March New York Assemblyman Martin Luster and two other state legislators echoed the senators' concerns, saying there is bountiful evidence that the board "has been taken over by the

nuclear industry and promotional agencies whose activities it is expected to evaluate."

Evaluating this charge is no easy matter; members of the small community of nuclear-waste experts often work for government, industry, and academia in the course of their careers. The current 21-member board includes nine academic members, with the remainder from industry and government. In a 7 April letter to his colleagues, Alberts replied that "the academy has been scrupulous in maintaining its independence and credibility," noting that each of the studies "is being conducted according to the academy's

highest standards of independence, scientific accuracy, and objectivity." Two of the six NAS members now say they are satisfied with the academy's procedures.

However, whether those arguments will persuade others is an open question. NAS officials say they are the target of a campaign led by an organization, The Committee to Bridge the Gap, that opposes the dumps. They see the timing of the letters as part of an effort by the committee and other environmental groups to discredit the board's work—particularly the Ward Valley report—before the studies are completed and made public in the next few months. "This is a well-orchestrated attempt to assure the acad-



Hot topic. Bruce Alberts defends the NAS against critics of waste dump studies.

RICK KOZAK