

Australian academy wants to influence elections

The Australian Academy of Science wants to ensure that science and technology issues are on the political agenda during this month's general elections. To that end, an academy document entitled "Science and Technology Priorities for the Next Australian Government" highlights the important issues facing Australia in the twenty-first century. "We recognize the rhetoric of both of the major political parties as being rather similar and very positive, but [the Academy] has a couple of major concerns," says academy chairman Gustav Nossal. These concerns relate to the country's deteriorating university infrastructure, the lack of career paths for young research scientists, the role of the government's Commonwealth Scientific and Industrial Research Organization (CSIRO), and the promotion of private-sector investment in R&D. However, it is not clear that the increasingly heated political battle will pause to consider the academy's concerns.

Some of the problems facing Australian science go back two decades, when the government increased the number of national universities from 19 to 37 by upgrading and combining existing colleges. Furthermore, although government funding for science research has increased, it has not kept pace with costs. As a result, infrastructure has suffered, leading to inadequate laboratory facilities, lack of computers and underfunded libraries, among other problems.

To remedy the situation, the academy recommends an infusion of A\$300 million (US\$220m) shared between infrastructure and the two major research funding bodies, the Australian Research Council and the National Health and Medical Research Council. The academy also wants the government to set a goal of having science education programs in half the nation's primary schools by 1999 and in all of them by 2002. Nossal says the current government, led by Prime Minister Paul Keating, has passed up other chances to adequately fund universities and research institutions.

With respect to the CSIRO, Nossal says its main role should be in public strategic research — "precompetitive industrial research" — which benefits many industries. The CSIRO has been shaken by

major cutbacks in recent years, leading to layoffs and early retirement of large numbers of internationally renowned senior researchers. To add to its problems, the organization has been rocked by allegations of mismanagement.

According to the academy, there is some evidence that Australia has been losing its standing in global science during the past decade. This assertion has been contradicted by the Bureau of Industry Economics (BIE), a government economics research group, which examined Australia's science system in terms of the number of papers published and their rate of international citations. The bureau concludes that: "Australia is a world-class contributor to scientific knowledge," producing 2.1 percent of science papers in the world, in a wide range of scientific disciplines. Nossal wel-

comes the BIE report, but says that the academy's warning not to take Australia's internationally respected science for granted is still relevant. He and his colleagues want the Australian Science and Technology Council (ASTEC), one of the country's main scientific government advisory bodies, to be made more independent by being reorganized along the lines of the US National Research Council (NRC), which is not a federal agency.

But as is often the case, science and medical research are not the driving issues in a political campaign. Thus the academy's recommendations will probably go begging until the next government has had time to recover from battle fatigue.

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NAS gives career advice

Should I go to graduate school, and where? What kind of salary will I make when I graduate? Is it worth the investment in time and opportunity cost? These are several of the questions that the Committee on Science, Engineering, and Public Policy set out to help upper-division undergraduate and graduate students answer in a forthcoming book, *Careers in Science and Engineering: A Student Planning Guide to Graduate School and Beyond*. The committee, part of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, prepared the guide in an attempt to broaden what we currently perceive as valuable careers in science to include careers that do not necessarily involve the actual "doing" of science and engineering. Sections of the book include, "How does a geneticist-molecular biologist get to be a patent lawyer?" and "How does a nurse get to be a research manager?"

This guide comes shortly after the committee's report, *Reshaping the Graduate Education of Scientists and Engineers* (1995), which supports a reevaluation of graduate education to provide students with more flexible career preparation. The report raised the question of what the students themselves need to know to plan their education and career tracks. Surveys of students and postdoctoral appointees provided the basis for the contents of this guide. A student can use the guide to decide what careers may be of interest to him/her, to evaluate his/her skills and attributes and to decide if attending graduate or professional school is necessary.

Careers in Science and Engineering: A Student Planning Guide to Graduate School and Beyond can also be found on the National Academy of Science's Home Page on the World Wide Web. The Web page also hosts "Career Planning Center for Beginning Scientists and Engineers," a source for guidance and for information on current trends and changes in the job market. The Web page offers students the opportunity to gain advice from scientists and professionals in one-on-one on-line mentoring sessions, and to talk on-line to other students about education and employment opportunities. The Web page also offers links to on-line listings of job, fellowship, and postdoctoral positions, as well as to other documents published by the Academy and various societies and universities. The Home Page can be found at <http://www2.nas.edu/cpc>.

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