

PCAST, FCCSET Release Reports on Research-Intensive Universities

The long-term commitment of the federal government to the development and support of research-intensive universities since World War II has led to the unique and prominent role of these universities in the United States. More recently, however, the university-government relationship has been under stress due to extraordinary economic and social transformations occurring nationally and world-wide, bringing into question the future direction and size of the academic research enterprise.

In the final days of the Bush administration, two reports were released on this relationship. The one report, *Renewing the Promise: Research-Intensive Universities and the Nation*, was issued by PCAST (the President's Council of Advisors on Science and Technology) and its companion, *In the Na-*

tional Interest: The Federal Government and Research-Intensive Universities, was released by FCCSET (the Federal Coordinating Council for Science, Engineering, and Technology).

These reports reaffirm the need for strong support of research-intensive universities, but they also suggest tough changes to cope with new constraints.

PCAST, a group of high-level, private-sector scientists and engineers who provide advice to the U.S. President on science and technology matters of national importance, held a series of six public meetings around the United States to solicit a broad spectrum of views from universities and other organizations and from individuals with university interests.* Their report recommends adapting rapidly to changing resources, reemphasizing teaching, restoring public trust, establishing appropriate mechanisms to allocate funds, exchanging researchers between universities and industry, and nurturing

the best talent.

The FCCSET report was produced by an *ad hoc* working group of FCCSET, chaired by David Kearns, undersecretary of education, with Walter Massey, director of NSF, acting as chairman in Kearns' absence. Complementing the private sector-driven PCAST report, the FCCSET document provides the government's view, encompassing individual perspectives from 17 research-supporting Federal agencies and a coordinated interagency view. Its recommendations are generally consistent with those of the PCAST report.

Summing up the two reports, Allan Bromley, the Assistant to the President for Science and Technology and chair of PCAST and FCCSET during the Bush ad-

*A statement from 1992 MRS President G. Slade Cargill, given at one of these meetings, is printed in the September 1992 MRS Bulletin, p. 15.

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ministration, said, "Universities need to focus on what they do best and on what only they can do." Their talents lie in educating a diverse population in science and technology and concentrating on pushing back the frontiers of knowledge. Likewise, other institutions should focus on their own talents, such as the details of applications work for industry, and large and long-range programs for federal laboratories. The report further suggests, "It is appropriate to consider making all federal basic research support available for merit-based competition by universities, federal laboratories, or industry."

Chair of the PCAST committee, David Packard, and vice-chair, Harold T. Shapiro, in the letter presenting the report to Bromley recognize that, "Some of our findings and recommendations may not be popular, but a positive future sometimes requires painful treatment."

The PCAST report says that universities should use available resources to focus on current strengths, instead of using them to broaden activities. This may mean eliminating or downsizing less-than-world-

class departments and specialties, collaborating with other institutions, and limiting new facilities to those that can expect to maintain long-term viability.

The report calls for an increased emphasis on teaching, even if it means sacrificing some research. It also recommends increasing direct senior faculty involvement in teaching, balancing teaching and research for evaluating faculty, reducing reliance on graduate teaching assistants, increasing hands-on research for undergraduates, and putting more emphasis on learning foreign languages.

Public trust and confidence needs to be boosted by establishing effective measures to eliminate fabrication, falsification, and plagiarism in scholarly work and to eliminate fraud and waste in the administration of that work.

Also, federal support of university-based research needs to be adjusted to sustain world-class accomplishments in all major areas of science and technology and to remain close enough to the frontiers in other areas to exploit discoveries without delay. Funds should be allocated competi-

tively on a merit basis, and earmarking of R&D projects and facilities without merit review should stop. The report also recommends having a federal program to repair and renovate university research facilities.

Linking universities and industry, the report says, is best accomplished by frequently moving people of all levels between universities and industry for substantial periods of time.

The report urges identifying and nurturing the top talent, since most important discoveries have been made by a small number of gifted people who have been provided the opportunity and time to pursue their intellectual interests.

PCAST also recommends that federal, state, and local governments end all taxation of scholarships, fellowships, and student stipends for participation in research. It recommends additional scholarships or service-repayable loans to encourage talented students to attend research-intensive universities in preparation for careers as precollege science and math teachers. □

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