

UCSD Chancellor Richard C. Atkinson calls for cabinet-level science advisor

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UCSD CHANCELLOR RICHARD C. ATKINSON CALLS FOR CABINET-LEVEL SCIENCE ADVISOR

BOSTON -- The White House, as presently organized, is not capable of dealing effectively with the issues troubling U.S. science, according to Richard C. Atkinson, chancellor of the University of California, San Diego and former director of the National Science Foundation.

In remarks prepared for the annual meeting of the Society of Research Administrators, Atkinson said the Office of Science and Technology Policy created in 1976 within the Executive Office "has not functioned as well as Congress and most of the scientific community had hoped."

Atkinson said he favors elevating the presidential science advisor to the status of a cabinet member without portfolio, similar to the status now held by the director of the Office of Management and Budget.

Another option gaining support in some quarters is creation of a Department of Science with a cabinet-level secretary. But Atkinson said the proposal has "serious disadvantages." Unless the National Institutes of Health and the research missions of the Departments of Defense and Agriculture were transferred to the new department, for instance, the new secretary would not be able to coordinate budgets and priorities throughout the federal research enterprise.

The option he favors "would have the advantage of giving the government's chief science officer access to the president and cabinet without the additional burden of managing an unwieldy bureaucracy." Also, without the task of competing with other departments for funds, the advisor would also be viewed with less suspicion by other agencies as he attempted to implement policies "affecting the health and vitality of the national research system throughout the government."

Atkinson outlined five essential issues that should receive top priority from the next president:

1) First is the need "to bring more coherence into the construction of at least the research part of the federal budget for R&D."

Currently the annual budgets for the principal R&D agencies--the Departments of Defense, Energy and Agriculture; NASA; NSF and the National Institutes of Health--"are established in terms of individual agency priorities in negotiations with six uncoordinated units within the Office of Management and Budget," Atkinson pointed out. And nine congressional appropriations committees have jurisdiction over various parts of the total R&D budget.

"With strong presidential leadership and congressional concurrence, budgets could be devised and implemented with a view toward allocating federal R&D resources to the achievement of overarching, longrange national goals rather than to the fulfillment of individual agency missions," he added.

2) A related challenge for the next president "should be to establish priorities among competing megaprojects," Atkinson said, listing the Strategic Defense Initiative, the National Aerospace Plane, the Manned Space Station, the Superconducting Super Collider and the proposal to map and sequence the entire human genome.

"Regardless of their relative merit, it is remarkable that the total cost of pursuing all or even most of these projects simultaneously seems not to have been considered seriously at the presidential level," he said.

3) A third priority for the next president should be to examine the "often inconsistent and counterproductive" impacts that tax, regulatory, patent, export control and other non-budgetary federal policies have on the nation's R&D system.

"For example, a National Research Council study released two years ago estimated that differing interpretations of export control laws by the Departments of Defense and Commerce result in delays in granting export licenses that are costing the U.S. approximately \$4 billion per year in lost high technology trade," Atkinson said. "Ironically those laws, as presently administered, seem only marginally effective in meeting their objective of denying militarily useful technology to the Soviet Union and its allies."

4) Since World War II, Atkinson noted, "universities have become heavily dependent upon federal project support not only for their research programs but for their very existence. Yet the scope of federal responsibility for the national research system has not been fully and openly discussed since the early 1960s."

For example, should the government now assume responsibility for repairing or replacing aging university labs and facilities? Estimates of the cost of the task range from \$2 to \$4 billion, he pointed out.

Also, Atkinson said, support for investigator initiated research is so severely underfunded that "even the most talented scientists spend inordinate amounts of time writing multiple proposals and otherwise negotiating for funds with multiple federal agencies.

"Are there more efficient ways to support academic research that would still preserve scientific autonomy?" he asked.

5) A fifth priority should be to act on what numerous studies have decried as the "sorry state of precollege education in this country," he said. "At the very least, it represents a looming resource crisis for the national research system.

"While additional financial support for improvements in precollege education would certainly help, national leadership is an even more pressing need," he said.

With research support declining, especially for young faculty, and precollege science and math education in crisis, fewer young Americans are pursuing graduate studies in science and engineering, he noted. As a result, more than half of engineering graduate students are foreign born and university faculties have become heavily dependent on foreign born Ph.D.s.

"With 40 percent of tenured faculty in U.S. universities due to retire by 1995, that trend is bound to continue," he said. "No one seriously questions the professional competence of these foreign born faculty. But relying on a continuous supply of first rate people from abroad to maintain the viability of our research system is hazardous, particularly as working conditions for talented foreign born scientists and engineers continue to improve in their own countries."

Maintaining the vigor of the nation's research system is not entirely a government responsibility, however, Atkinson pointed out. The "growth of academic pork barrelling...has had a corrosive effect on the merit based federal support system. It has led to serious questions about the integrity of the scientific community."

Science has come to be regarded by some in Washington "as simply one more special interest group whose demands for resources can be satisfied by means of conventional political horse trading," Atkinson said, and it is a perception that badly serves both science and the nation.

"We need to develop realistic means for establishing our own internal priorities," he concluded. And the scientific community needs to make it clear that its research efforts aim to support rather than compete with other legitimate claims on the federal budget such as housing, education and community services.

Atkinson is president elect of the American Association for the Advancement of Science, the nation's largest scientific organization, which represents all fields of science.

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