

More controversy over peer review

Most members of the scientific community agree that federal funding sources for academic research facilities and equipment have grown scarcer since the 1960s, but what they don't agree on are fair methods for obtaining whatever federal money is available.

During 1983 and 1984, in an unprecedented move, 15 maverick universities bypassed the traditional peer review processes, hired Capitol Hill lobbyists and obtained more than \$100 million in special appropriations from Congress to build new research facilities. This prompted an outcry from some sectors of the scientific community, including some of the more established research universities and the National Science Board (NSB).

"The direct appeal to Congress by educational institutions for funding scientific facilities undermines the peer review process... [and] could well threaten the integrity of the U.S. scientific enterprise that is the basis of the scientific, technical and economic competitive position of the U.S. in the world," the NSB said in a report this spring (SN: 3/16/85, p. 167).

Last week, when representatives from government, industry and academia met in Washington, D.C., to devise new funding strategies for the deteriorating academic research infrastructure, it was clear that the controversy over peer review hadn't gone away.

"We need imaginative ideas and inventive solutions," NSB Chairman Roland W. Schmitt told the participants at the opening session of the conference, which was sponsored jointly by the NSB, the White House Office of Science and Technology Policy, the National Academy of Sciences and the National Academy of Engineering. Schmitt emphasized, however, that he didn't consider bypassing peer review a solution. "We do not wish to substitute the skills of lobbyists for the merits of scientists," he said, "because once we submit to the temptation to make research support a system of entitlement rather than merit review, we will have stepped onto the fast track to mediocrity." He urged participants instead to explore other possibilities, such as state support for research, innovative partnerships and better ways of maintaining facilities.

But John Silber, president of Boston University, one of the 15 "mavericks," called the objections to bypassing peer review "self serving." The peer review system, he told a working group on comprehensive merit evaluation for facilities, functions as an "old boy network," concentrating most federal research funds in the hands of only about 20 institutions. Furthermore, he said, to call the traditional process of evaluating facilities proposals "peer review" is misleading.

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Cyprus site yields more quake clues

A 16-century-old city being excavated on Cyprus is providing scientists with a close look at both the immense earthquake that destroyed it and the way people lived during the latter part of the Roman empire.

Last summer, a team led by archaeologist David Soren of the University of Arizona in Tucson uncovered a small part of a house that once stood in the ancient city of Kourion (SN: 8/18/84, p. 100). Roman coins at the site indicated it was destroyed in late A.D. 364 or in A.D. 365. Working in June and July of this year, another Soren-led expedition dug up five and a half rooms of the large house, which may date to the second century A.D.

"There is evidence for three seismic waves causing the destruction," says Soren. Roofs with their fired-clay tiles and other, lighter material crashed in with the first wave, he explains. A few seconds later, another wave appears to have taken down the large walls. A third wave moved through in an undulating motion at an unspecified time later and caused a curvilinear deforming of the ground and walls.

During the recent excavation, the bones of a 50- to 60-year-old man were found near the top of the debris. He was probably struggling through the ruins left by the first seismic wave when the second wave struck, says Soren.

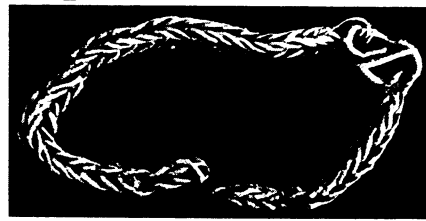
Farther down, the scientists recovered hundreds of roof tiles, but only three were unbroken by the first blast.

In addition to getting a more detailed glimpse of the earthquake, the investigators may be able to rebuild an entire district of Kourion, notes Soren. Intact remains and the walls of more buildings now can be seen from all directions at

the site.

Such proposals have never been evaluated in the same ways as those from scientists who wish to do basic research, he said. "When we talk about peer review, let's not talk about it as if it were the immaculate conception — let's talk about it the way it really is."

According to the working group moderator, management science specialist William Wells of George Washington University in Washington, D.C., the group did just that. And a majority, he said, agreed that review of funding proposals for facilities has evolved into something different from classical peer review, and that it does include "social, economic and political considerations." For that reason, Wells told the conferees, the majority decided that the phrase "comprehensive merit evaluation," rather than "peer review," best describes the process by which research facility funding proposals are currently evaluated.



A copper-alloy chain recovered at Kourion, found sticking through the handle of a small pot, may have been used to hang the vessel.

the site.

The partly excavated house is "remarkably similar" to modern Cypriot architecture, he points out. Features such as dry stone masonry topping walls of mud brick and central posts that hold up ceilings have apparently been passed down over many centuries.

Almost 60 smashed but restorable pieces of pottery were discovered at the site. So far, 19 have been patched together. A number of bronze and badly damaged glass artifacts also turned up, as well as nails and wood used in construction.

There is evidence that many objects were recycled and repaired, says Soren. For example, the scientists have observed new links inserted into old lamp chains and fragments of stone architecture reused as steps. "But there are a lot of other houses to examine before we can say much about the architecture and the way people lived," cautions Soren.

His project, which has attracted the backing of the National Geographic Society in Washington, D.C., will take years to complete. Soren says the department of antiquities on Cyprus is interested in helping to restore the ancient house as a tourist attraction.

—B. Bower

Among the dissenting minority was William Carey, executive officer of the American Association for the Advancement of Science (AAAS) in Washington, D.C. The AAAS, he said, would be unable to endorse such a definition of review. "It has no boundary conditions," he told conference participants. "It's open-ended and doesn't hold the line for accountability and responsibility."

On the congressional end, four committees will be reviewing a bill recently introduced by Rep. Don Fuqua (D-Fla.) calling for laboratory modernization programs in the six leading federal research and development agencies and authorizing \$470 million for a "steady, systematic investment in university research facilities renewal." The bill, Fuqua told conference participants, is still rough. "It's not a perfect piece of legislation," he said, "but rather a consensus-building device."

—J. Mathewson

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