

than "tenure recertification," according to mathematician Robert Goad of Sam Houston State University in Huntsville and coordinator of the state universities' Council for Faculty Governance Organizations. They fear that, under the new system, the university will no longer bear the burden of proving that a professor is incompetent. Rather, it will be up to faculty members to prove that they are good enough to keep their jobs.

Other institutions, particularly medical schools, are opting to modify the terms of tenure rather than simply try to make faculty members more accountable. One such change is to cut guaranteed salaries for clinicians and researchers who typically round out their medical-school salaries with income from research grants and clinical practices. This has aroused a lot of anger in at least one school—the University of Southern California (USC) in Los Angeles—where tenured members of the basic science faculty have brought suit against the university. They allege that it is violating the terms of their employment by reducing their salaries by 25% (*Science*, 29 November 1996, p. 1471).

The USC battle stems in part from the fact that the university's tenure agreement is vague on the subject of salary. Indeed, says Robert Jones of the Association of American Medical Colleges in Washington, D.C., "tenure carries with it an explicit financial guarantee at about 69% of our schools." At the

other schools, all tenure ensures is "continuing appointment at a designated rank."

No specific salary guarantees used to be needed, says neuroscientist Robert Rubin of the Allegheny University of the Health Sciences in Pittsburgh. But now medical schools are at the front lines of the fiscal crunch, thanks to health-care system reforms that have drastically reduced clinical income at university medical centers. "In the past, medical centers were universities' cash cows. Now, they are a cash drain," he says. As a result, most U.S. medical schools are rethinking salary agreements, says pediatrician Sharon Hostler of the University of Virginia Medical School in Charlottesville. At Virginia, for instance, authorities are contemplating as much as a 40% cut in guaranteed salaries for clinicians and researchers.

Other institutions are trying to limit the number of tenured jobs while still making posts prestigious enough to attract top-notch scholars, says Judith Gappa, a professor of educational administration at Purdue University in West Lafayette, Indiana. At American University in Washington, D.C., she says, administrators are making greater use of full-time, nontenured appointments with titles such as "senior distinguished lecturer." And New York University business school in Manhattan has a nontenured post called "professor of practice." Gappa has surveyed faculty attitudes at several campuses and concludes that

faculty members are satisfied with such renewable posts "where people are well integrated and have full status as faculty members."

Although faculty members have, by and large, been willing to go along with reforms of the system, they have remained firm in their support for the fundamental concept of tenure. The main reason is the old academic freedom argument. The freedom to determine and carry out long-term research projects or criticize a university's administration would inevitably be circumscribed if faculty members had to go "hat in hand" to the contract review committee every 5 years, contends AAUP Associate Secretary Jonathan Knight. Tenure defenders also argue that for all the grumbling about lack of accountability, the tenure system has a built-in quality-control checkpoint. On a contract system, says Poston, administrators could be tempted to keep on a mediocre person "rather than face an up-or-out moment."

Indeed, to many faculty members, such as Claremont's Schuster, tenure has been getting a bum rap. It is "a convenient scapegoat" for ills that its abolition would do little or nothing to remedy, he says. But to many outside the academy, including state legislators, it will remain a crucial part of a system that is ripe for reform. Although the temperature of the discussion may have dropped in recent months, the debate is far from over.

—Constance Holden

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## MERIT REVIEW

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# NSF Adopts New Guidelines

Starting this fall, scientists who review grant proposals for the National Science Foundation (NSF) will be asked to judge them according to just two criteria: scientific quality and impact on society. The new approach, adopted last week by the National Science Board (NSB), eliminates separate criteria relating to the applicant's past research and the effect of the project on the nation's scientific infrastructure. Each is now a component of one of the two remaining categories.

The revisions are the first major change since 1981 in the criteria NSF uses to distribute most of its \$3.3 billion budget. A draft of the new approach went out last fall (*Science*, 29 November 1996, p. 1453), and NSF received 325 comments. Slightly more than half said the new criteria were an improvement, although many viewed the changes as minor. NSF officials say they acted because reviewers often failed to address a proposal's utility and potential impact or didn't understand what was being asked. In either case, the result was less information upon which to base funding decisions.

The biggest revision to the initial draft was a sharpening of the distinction between

the two criteria. Many of the researchers who commented urged NSF to make clear the paramount importance of scientific excellence, including the track record of the applicant, in choosing what research to fund. The science board took that suggestion to heart, deciding that reviewers should be told that the two criteria "need not be weighted equally" and giving program officers and reviewers leeway to decide their relative importance.

"For traditional research proposals, I think quality is probably more important," says Warren Washington, an atmospheric chemist at the National Center for Atmospheric Research in Boulder, Colorado, and chair of the NSB task force that drafted the new guidelines. "But as someone who does research on global change, I recognize that there are lots of areas where it's very important that the results get out to the public. And we didn't want to ignore that aspect." Washington noted that many mathematicians saw the "impact" criterion as a possible sign that NSF was moving away from funding theoretical work, but he said NSF "has no intention" of doing so.

The new review sheet still requires a single rating for each proposal—on a five-point scale from excellent to poor—but it asks for an overall descriptive evaluation as well. It suggests how to interpret the criteria by naming issues that reviewers may address under each heading. The list for the first criterion includes the cross-disciplinary nature of the work, its creativity, and the ability of the scientist to carry out the research. The second criterion covers how well the activity promotes teaching and training, broadens participation of underrepresented groups, improves partnerships and instrumentation, and enhances public understanding of science. "These are important questions that NSF must address," says NSB President Richard Zare, a Stanford University chemist. "And the more care that people take in answering them, the better NSF can do its job."

NSF will start using the new criteria in October. Reviewers will also be sent a synopsis of NSF's strategic plan, adopted in 1995, so they can judge how a proposal squares with NSF's overall goals of supporting world-class research, disseminating the knowledge gained from it, and improving U.S. science education.

—Jeffrey Mervis