

Strong Medicine for NIH

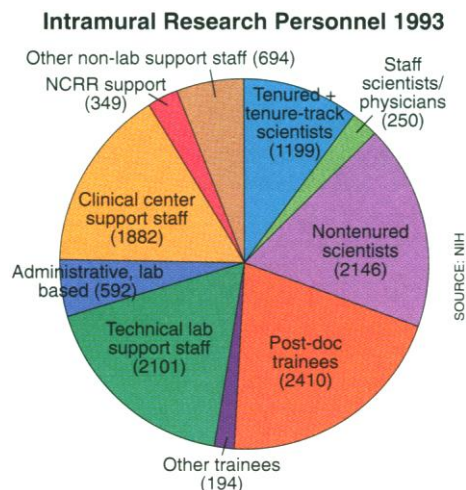
A blue-ribbon panel urges NIH to set uniform standards for intramural peer review and tenure; proposes downsizing clinical center to 250 beds

When the National Institutes of Health (NIH) lobbied for a new billion-dollar hospital on its campus in Bethesda, Maryland, last year, Congress knocked the ball back into NIH's court: It asked the agency to take a hard look at itself before trying to pump up its budget. It told NIH not only to come up with a detailed justification for the new hospital, but also to provide a full explanation of the rationale for dividing resources between the \$1.3-billion research program on campus and the \$8.7-billion NIH program of grants to universities and medical schools.

This edict came down just as Harold Varmus became the new NIH director. It reflected concern that NIH's intramural program is losing some of its luster: Several top-flight researchers had recently departed, and projected budget and personnel cut-backs were increasing tensions on campus. Varmus, who had already outlined some of his own ideas for improving NIH—such as making internal peer reviews more rigorous, centralizing some functions, and creating a collegial atmosphere on the NIH campus—seized the opportunity to obtain a mandate for change. Last fall, he asked a blue-ribbon committee to examine the NIH intramural program. The 10-member group—chaired by Gail Cassell, microbiology department chief at the University of Alabama, Birmingham, and Paul Marks, president of the Memorial Sloan Kettering Cancer Center—spent the winter collecting data; last week it released its findings.

The report's bottom line is that unless NIH takes tough measures to protect the currently high quality of its research, its intramural program is destined for a "mediocre future." In a time of little or no budget expansion, NIH will have to cut "less productive" programs to let the better ones grow. The authors decry NIH's "fragmented structure"—which gives institute directors and the heads of the institutes' intramural programs considerable autonomy—arguing that its "Balkanized" management makes it difficult to promote excellence.

The report proposes several solutions designed to create uniform, objective standards for intramural peer review and staff development. "Stringent review," with input from outside scientists, is needed "now more than ever," the report says, because NIH is showing signs of "institutional 'aging' typical of most large organizations, and because of a



Narrow tenure track. Postdocs are the largest component of NIH's research workforce.

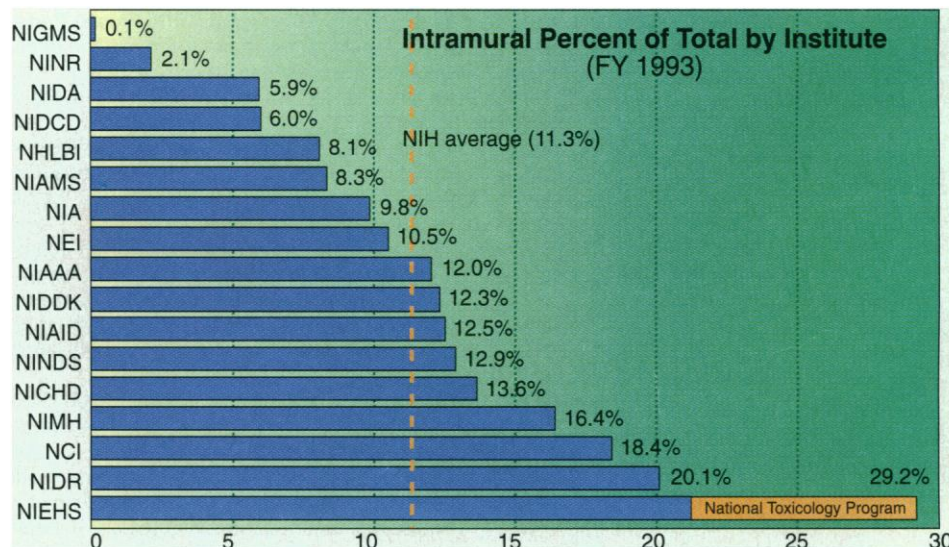
getary constraints." To bring all institutes up to the highest level, the report recommends giving the NIH director's office new authority for monitoring quality and staff performance. If the intramural program follows these recommendations, Marks said, it will see a "profound" improvement.

At a press briefing on the report, Cassell and Marks zeroed in on scientific review of ongoing intramural research as the most important of three major issues needing attention. The second is staff management: The

panel recommends a formal system of tenure to give young researchers a chance to develop independence and creativity. Third, the report endorses NIH's desire to build a new clinical center, noting that members observed "vivid evidence of deterioration" in the existing facility. But the panel says the new building should only be half as large as the present one—providing 250 beds, not 450. The funds for the new building should come from cuts in other intramural projects or from a new appropriation, the report says; they should not come out of the extramural grants budget.

Varmus welcomed these recommendations last week, saying that while NIH "is one of the government's proudest possessions," it needs shoring up. He mentioned that some observers have detected a "slippage in quality," citing reports in *Science* (27 August 1993, p. 1120) and comments by members of Congress and their staff. Varmus agrees that the intramural program needs more vigorous oversight; to this end, he and his acting deputy director for intramural research, Michael Gottesman, have already begun making changes, for example, adopting a campus-wide tenure plan developed initially by former intramural chief Lance Liotta.

However, before giving an all-out endorsement, Varmus is waiting to learn how institute directors view the report. Some of them are concerned about the "possible ero-



The great divide. The panel found no consistent rationale for distribution between intramural and extramural spending, but recommended capping intramural's share at 11.3% on average.

sion of their independence," Varmus says. Indeed, Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, said in a telephone interview that while he and most of his colleagues like the report, the question of whether to centralize scientific and tenure review in the director's office is still "open for discussion." Not everyone agrees that consolidating these functions is the best way to improve performance, Fauci noted. Claude Lenfant, director of the National Heart, Lung, and Blood Institute, also has reservations; he says he expects "conversations" about the report to continue for a while.

Centralized quality control

The idea that scientific reviews should be coordinated through a central body in the director's office, and that more extramural scientists be brought into the process, may be difficult for NIH's intramural chiefs to swallow. But the Marks-Cassell panel makes it clear that the current system isn't working properly. It is "not evident...that review of scientists within the intramural program is uniformly objective," the report says. The panel finds too much chumminess between scientific directors—who run the institutes' research programs—and the nominally independent boards of scientific counselors, which are supposed to provide outside guidance to institutes on the quality of intramural research.

"We looked at this issue from top to bottom and bottom to top," searching for ways to make scientific programs and directors at the institutes more accountable and more in tune with extramural standards, said Marks. The report recommends that each institute develop a "more independent group of reviewers," specifically ensuring that at least one third of the members and the chairs of the boards of scientific counselors receive major funding from "sources outside the institute under review." In the past, scientists often received invitations to join a board of scientific counselors from the institute's scientific director. This should not happen, the report says, because "objective review is difficult when the board of scientific counselors is nominated by and reports to the scientific director." Institute chiefs and scientific directors may nominate members, the report says, but only sitting members of a board should choose them.

Every 4 years, the report says, each institute's board of scientific counselors should review the institute's intramural research program and the performance of the

scientific director, using as one criterion his or her willingness to listen to outside advice. The review would go to the NIH deputy director for intramural research, who would advise the institute director whether or not to seek a new scientific chief. The boards should also review each tenure-track investigator every 3 years, the report says, and every tenured investigator every 4 years.

The report also calls for the creation of an "External Advisory Committee"—a senior review group of all chairs of boards of scientific counselors, to be headed by the NIH deputy director for intramural research. The new panel would meet within 3 months after the Marks-Cassell report is accepted, and it would draft guidelines for the intramural program, "stressing the need for stringent quality control and the necessity to free up resources for new recruitment."

Undermining scientific fiefdoms

In addition to proposing clear review procedures, the Marks-Cassell report lays out a new system for granting tenure—and overcoming the clubby nature of the intramural program, in which permanent NIH staffers in many cases are former junior researchers who have been promoted by their supervisors. The objective, the report says, is to guarantee the flow of "fresh, independent ideas" and avoid making intramural science "simply the extension of the ideas of a few senior scientists." In the past 5 years, about 70% of those named to tenured positions at NIH were selected from among the intramural staff, which is composed mainly of postdocs and junior scientists (see chart). The report calls for a new campus-wide tenure committee composed of 12 to 16 tenured scientists and chaired by the NIH deputy director for intra-

mural research. The offer of a tenure-track position—including guaranteed employment, independent budget, and lab space—could be used to recruit promising scientists. Once an institute creates such a position, the report says, it should conduct a broad search both inside and outside NIH for the best candidate.

Just as critical as the tenure system, said Cassell, is the need to improve NIH's training programs. Cassell points out that NIH probably trains more biomedical postdocs than any institution in the world, so it has a



RICK KOZAK

Key role. Gail Cassell urges more attention to training.

responsibility that extends beyond its own concerns. The report stresses the need to hire more women and minority researchers, and asks for "better linkage" between personnel hiring decisions and programs designed to interest minority students and physicians in research. The report suggests establishing a 2-year national program that would repay medical school loans in return for postdoc service at NIH.

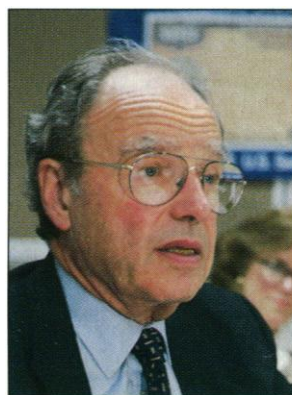
The panel urges NIH to advertise every postdoc opening, set objective criteria for selection of applicants, ensure that postdocs get broad experience, help teach them to think independently, limit the term of service, and evaluate the training programs by monitoring graduates' performance. NIH now keeps little information on this.

A smaller clinical center

The most important aspect of the report for members of Congress, says a Senate appropriations committee aide, may be the section on rebuilding the NIH Clinical Center. Congress has been concerned about the center's potential impact on the budget and the possibility that it could increase the squeeze on extramural grants. NIH originally had planned to refurbish or replace the present 450-bed hospital/research building with one just as large. But when the Marks-Cassell panel investigated, it found that the actual daily bed availability in 1993 ranged from 385 to 417 beds, and the budget for staffing was adequate for a daily census of only 230 patients, resulting in a fairly low occupancy rate of only 58%. In addition, some institutes said they aimed to cut back on use of the center for inpatient services because clinical costs are running high. The panel backed the idea of rebuilding, but would limit the hospital to 250 beds.

Deciding how to do that may be a thorny issue, according to clinical center officials who spoke with *Science*. Some argue that it is essential to build new research labs directly adjacent to patient wards, as in the current design. But the Marks-Cassell panel recommended a "modular" approach—building the hospital first, then renovating labs in nearby buildings or constructing entirely new labs, as the budget permits. The report calls for a comprehensive study of the options.

The report touches on other topics that have raised concern at NIH—such as the need for relief from a White House personnel rule that will require NIH to lose more than 2000 top-level staff in the next 5 years. Gottesman has warned that this could lead to "downsizing" NIH by 15% (*Science*, 6 May, p. 764). Varmus says he appealed for



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Optimistic. Paul Marks says he expects changes.

relief earlier this year and was denied. NIH has since filed a second appeal seeking a waiver for half the positions that would be affected, on the grounds that NIH is different from most agencies in that at least half of its top staffers are not administrators but researchers. The report also recommends that NIH streamline procurement and personnel procedures where possible. And it seeks clearer guidelines on NIH-industry collaboration.

Distinction without difference?

In one key respect, the report doesn't respond to the charge Congress laid out. Congress asked for a scheme that provides a "well-thought-out division of labor between the extramural and intramural programs." Marks said, however, that when the panel tried to get institutes to explain how they divide their resources between internal and external projects, they found that the numbers—and the explanations—were all over the lot. In some cases, he said, "we were unable to divine" how institutes make a decision on resource allocation. The panel offered its own solution: Cap the intramural program at the present level—11.3% of NIH's total budget—and ask each institute in the future to justify funding decisions in an annual planning paper. These plans should be coordinated by the NIH director.

A House appropriations subcommittee staffer involved in drafting the request that led to this study said members of Congress will probably find the report a "responsive, positive, useful product." He didn't think it was important to have absolute consistency across all the institutes on mechanisms of funding or percentage of funds devoted to intramural research: "Uniformity is not the goal here, but thoughtfulness is." He added that Varmus may already have enough authority to carry out many of the proposed changes, though it would take new legislation to alter some personnel and procurement rules. If anything, he said, the appropriations committee would be willing to "beef up" the NIH director's authorities.

Marks said he is hopeful that the changes recommended in this report will actually be carried out, even though some of them have been proposed before. Marks himself sat on a panel in 1976 that urged NIH to adopt more rigorous methods of peer review and stronger management of the intramural program. As the current report says, many such suggestions were "ignored" or resisted in the past. This time, Marks said, he and members of the outside panel "have a certain sense of optimism," because Varmus and his staff at NIH want to improve the system, and because they have strong support from the Secretary of Health and Human Services, Donna Shalala. However, Marks added, "only time will tell if this optimism is well placed."

—Eliot Marshall

HIGH-ENERGY PHYSICS

DOE Ponders Yet More Uses for SSC

Scientists sometimes had trouble explaining why the Superconducting Super Collider (SSC) should be built. But now that Congress has killed the unfinished particle accelerator, there is no shortage of ideas for putting its Texas corpse to use. Last week the Department of Energy (DOE) announced grants ranging from \$25,000 to \$150,000 for six "follow-on" proposals. And that's in addition to four projects already under study in Texas. The six proposals, chosen from among 34 ideas submitted, are as follows:

- An experiment using the SSC's powerful superconducting magnets to measure the effective index of refraction for light of different polarizations in a strong magnetic field, proposed by a group of Texas researchers;

- Research to study gas convection and turbulence at low temperatures using the SSC's cryogenic facilities, by the University of Oregon;

- A geotechnical research facility to study the rock exposed in the 12 miles of tunnel already dug, by the University of Wisconsin and the Lawrence Berkeley National Laboratory;

- A research and science education center, using the SSC's computer facilities, engineering facilities, and mechanical shops, by the University of Texas;

- A plan to share SSC personal computers and workstations with minority institutions and network them to the lab's central com-

puter facility, by the Tuples Collaboration and Particle Detector Research Center; and

- A Regional Industrial Technology Institute at the SSC site, focusing on training, manufacturing, and technology development, by a group of companies and education centers in three states.

Meanwhile, the Texas National Research Laboratory Commission, which managed the state's \$1-billion investment in the project, is reviewing proposals for a regional supercomputer center, a cancer research facility, a center for superconductivity research, and prairie restoration at the Texas site. The commission has a DOE grant of up to \$6 million to explore the proposals.

The ideas may be fresh, but the prospects for any follow-on project are far from certain. Legislators have warned the agency not to start expensive new projects or to funnel money to Texas in the guise of an orderly termination of the lab (*Science*, 25 March, p. 1681), and last week the congressional General Accounting Office (GAO) released a report concluding that DOE's request for an additional \$180 million to shut down the SSC was "not justified." GAO recommended that Congress withhold funding for any projects whose costs are not yet known. DOE officials declined to comment, saying they had not yet officially received the GAO report.

—Christopher Anderson

OCCUPATIONAL HEALTH

Toxic Tiff Spreads Beyond France

PARIS—Just a few days before setting off for the French city of Nancy to attend an international symposium on the health hazards of glycol ethers last month, Ronald Gray, an epidemiologist at Johns Hopkins University in Baltimore, received a fax from a French official saying the meeting had been canceled. Soon after, another fax arrived saying the meeting was on again. From that point on, says Gray, "it just got more and more bizarre."

When the participants arrived for the opening of the 3-day symposium, they learned that the meeting's organizer, André Cicoella, an internationally known expert on glycol ethers, had been suspended without pay from his job at the French Institut National de Recherche et de Sécurité (INRS)

and barred from attending. And the French research ministry—one of a long list of sponsors of the symposium—had withdrawn its support upon learning that Cicoella was no longer in charge. On day two, Cicoella showed up with a court order in hand, al-

lowing him to attend as a private citizen. And on day three, at the close of the meeting, Cicoella was called to the podium by Bryan Hardin, an assistant director of the U.S. National Institute for Occupational Safety and Health (NIOSH)—who had reluctantly assumed the chair—and given a standing ovation for his role in organizing the symposium. This display of support reportedly provoked INRS officials to stalk out angrily.

This strange affair has



Missing chairman. André Cicoella, barred from meeting.