JAPAN

New Institutes Would Break Mold

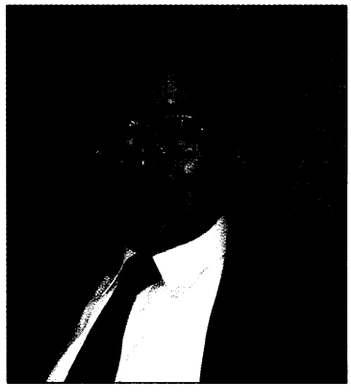
TOKYO—Impatient with the slow pace of reform within Japan's research enterprise, the Science and Technology Agency (STA) is developing plans for a new breed of research institutes. The idea is to create 30 to 50 institutes over the next decade that break the traditional Japanese mold by giving their directors greater independence over budget and management issues while at the same time holding them accountable for the results of publicly funded research. The goal is to remake the system from the outside.

"The concept is build and scrap," says Kaoru Mamiya, deputy director-general of policy for STA. The new institutes, he says, will set a high standard for research excellence that older institutes will be expected to match or run the risk of losing government support. A new Brain Science Institute (*Science*, 14 March 1997, p. 1562), which opened its doors last October, and a planned Genome Frontier Program (*Science*, 5 December 1997, p. 1700) are regarded as prototypes for this new breed of institute.

Plans for the new research institutes are outlined in a March report based on a yearlong exercise by a committee of researchers and academics, most of whom have international experience. The panel focused on managing the research enterprise and concentrated on "strategic research" that will bolster the domestic economy while raising living standards around the world. "I don't think astronomy fits into this plan," Mamiya says.

The management ideals underpinning the new institutes run counter to prevailing Japanese practices. "The big problem is that the national labs are managed as if they are government bureaus, not research institutes," Mamiya notes. Although staff members at national labs and universities receive lifetime appointments, just a third of the researchers at the new core institutes would have tenure, and only after demonstrating superior ability. The bulk of the staff would be on fixed-term or postdoctoral appointments. In addition, the plan calls for a flat organization, in sharp contrast to the hierarchical structure of current institutions, and more freedom for younger researchers. The heads of the new institutes also would have considerable discretion in setting research priorities and personnel policies, as well as in managing their budget.

The institutes would be similar in size to major research projects, with an average of 100 researchers organized around a research theme or a visionary leader. Their lifetime would typically be 10 to 20 years. These new institutes might eventually be gathered under the umbrella of an organization resembling Germany's Max Planck Society, France's CNRS, or the U.S. National Institutes of Health. The umbrella organization would have the authority and flexibility to launch research initiatives, steer funding and other support to those institutes doing the best work, and overhaul or close those that don't meet their goals. The end result, boosters say, would be a more dynamic, flexible, and competitive system.



DENNIS NORMILE

Taking the lead. STA's Kaoru Mamiya hopes institutes will help to reform Japanese research.

Committee members acknowledge that some of the ideas in the report have been proposed before, and some have even been tested, including international reviews of scientific programs or limited tenure for faculty. "But nothing has really changed," says Ken-ichi Arai, director of the University of Tokyo's Institute of Medical Science and a member of the committee. Institutional inertia, the plethora of government-wide rules and regulations, and the passive resistance of older scientists have slowed reform to a snail's pace at the country's 90 national labs. A parallel research system, say Arai and others, stands a better chance of making a lasting impact.

So far the plan has attracted little attention. "At this stage, that is to be expected," says Kuniaki Nagayama, a biophysicist at the National Institute for Physiological Sciences in Okazaki and another member of the committee. Even when the details are worked out, he says, the 50 new institutes would employ only a tiny fraction of Japan's total scientific workforce. "This is really for the top-level researchers working at the frontier," he says.

Still, STA hopes that these core institutes will make a big splash. "If we can create something that works really well, I think we can count on the approach being imitated throughout the research community," says Mamiya.

–Dennis Normile

BIOMEDICAL PATENTS

Making Research Tools More Accessible

Biomedical researchers might learn a thing or two from the way musical composers charge for their work, says intellectual-property expert Rebecca Eisenberg of the University of Michigan, Ann Arbor. In biomedicine, property claims form a complex, duplicative, and cumbersome thicket managed by hundreds of individual legal teams, each intent on maximizing royalty income. But composers simply join a property "pool" run by a company that keeps tabs on who uses the music, collects fees according to a standard schedule, and returns income to the artists.

Share and share alike. Rebecca Eisenberg's report urges NIH to "set an example."

Eisenberg made this discordant comparison last week as she delivered a report to the National Institutes of Health (NIH) on biomedical property claims. NIH director Harold Varmus had asked Eisenberg last year to head an 11-member working group to suggest ways that NIH might free up its grantees to share new tools, such as reagents, sequences, and genetically engineered organisms. Eisenberg responded on 4 June at a meeting of Varmus's advisory council that because of statutory constraints, NIH can do little to alter the way patents are managed—even those based on work paid for by NIH. However, Eisenberg said, NIH leaders can "set an example" by resorting to "the bully pulpit" to suggest guidelines that might even include something like the musicians' system. (A copy of the group's report has been posted on the Web at www.nih.gov/news/researchtools/index.htm)

The panel didn't formally recommend that model, but it did endorse some basic principles. First, it said, NIH should encourage scientists to share research tools freely without resorting to legal agreements "whenever possible, especially when the prospect of commercial gain is remote." Second, the panel said NIH should advocate the use of standard agreements to cover the sharing of materials among nonprofit labs—such as one university legal officers en-

dorsed years ago but now often ignore. Third, the group recommended that NIH send all grantees a set of guidelines laying out what NIH considers to be "reasonable terms" for licensing patents and sharing research tools.

In an appendix, the authors list 12 illustrative guidelines. For example, they suggest that NIH-funded researchers should be told not to impose exclusive licenses on research tools. NIH-funded scientists should also be advised not to sign agreements containing so-called "reach-through rights," which attempt to stake a claim on any invention resulting from the use of a patented tool such as a genetically engineered animal.

Varmus endorsed these ideas in principle at the meeting last week, although he said that another suggestion to create a standing forum to debate intellectual property issues will need further study. According to NIH staffers, Varmus has asked the director of NIH's technology transfer office, Maria Freire, to draft a set of licensing guidelines and plan to implement them within 6 months. The new guidelines will be published for comment before NIH acts on them.

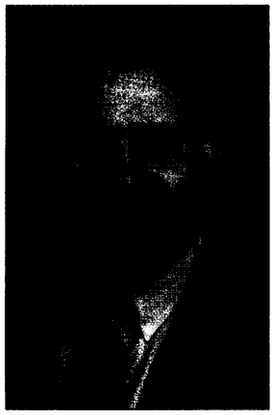
–Eliot Marshall

RESEARCH ETHICS

NIH Examines Standards for Consent

The safeguards meant to protect human subjects in U.S. biomedical research could get tighter, particularly for studies of psychiatric patients who may not fully understand the risks. Several inquiries are scrutinizing the quality of oversight provided by independent panels, called Institutional Review Boards (IRBs), that grant recipients must establish to protect volunteers who take part in studies funded by the National Institutes of Health (NIH) and other federal agencies. And last week, NIH released a flurry of new findings and recommendations.

The National Institute of Mental Health (NIMH)—the largest source of government funds for psychiatric research—endorsed broad new guidelines for the human experimentation it supports. At the same time, NIH officials released data suggesting that IRBs may not be operating as uniformly or as efficiently as they should. And on 11 June, the House government reform and oversight subcommittee on human resources, chaired by Representative Christopher Shays (R–CT), was expected to interrogate NIH officials about a far more critical report on the monitoring of clinical studies, written by the inspector-general of the Department of Health and Human Services (HHS), NIH's parent agency.



Informed consent. Steven Hyman embraced new rules for psychiatric studies.

This activity is being driven in part by a series of well-publicized complaints from patients' families over the past 2 years. Last September, for example, several patients and their advocates appeared at a public session of the National Bioethics Advisory Commission to condemn some NIMH-funded clinical trials for enrolling volunteers who may not have been competent to understand the risks they were accepting. And speaking at a House hearing on 22 April, Adil Shamoo, a biologist and ethicist at the University of Maryland, Baltimore, criticized so-called "washout studies," in which patients are abruptly taken off drugs or given a placebo to test the efficacy of a new therapy. Shamoo, who was speaking for the Citizens for Responsible Care in Psychiatry and Research of New York City, claimed that the relapse rate for patients whose medication is withdrawn rapidly is "as high as 80%." He and others have documented suicides among participants in such studies, and advocacy groups are asking NIH to intervene.

Citing the need to protect patient confidentiality, NIMH has declined to comment on specific cases. However, NIMH associate director for clinical research David Shore has said that every allegation of improper research management is being investigated. Shore also said NIMH intends to hold meetings this year to develop new guidelines on the conduct of research that involves the withdrawal of medication or the use of stressful "challenge" protocols.

NIH director Harold Varmus, meanwhile, set aside the afternoon session of his external advisory council on 4 June to discuss NIH's policies on protection of human subjects. At that session, NIMH director Steven Hyman announced that an NIH expert panel, which has been investigating this topic since December, had proposed new guidelines to cover "individuals with questionable capacity to give consent."

The panel, chaired by psychiatrist Edwin Cassem of the Massachusetts General Hospital, made seven recommendations, all of which Hyman embraced. Cassem's panel urged that all IRBs include at least one voting member willing to act as a representative of the mentally impaired when such subjects are being recruited for clinical trials. It also recommended a "sliding scale" of additional safeguards, depending on the degree of subjects' impairment, such as bringing in outside observers to monitor IRB decisions and requiring that a volunteer's consent be backed up by permission from a legally authorized "surrogate," such as a family member. The panel asked NIH to develop standards for determining whether a research volunteer is capable of understanding the risks involved in a study, a task that Hyman said "will require more research." And, in a final recommendation that is beyond NIH's ability to carry out, the panel said that private research (much of which is not required to undergo IRB review now) should be held to the same standards as NIH-funded research.

These recommendations are now being studied by a half-dozen NIH institutes and by Varmus himself. In addition, NIH deputy director for extramural research Wendy Baldwin told the 4 June meeting that NIH is evaluating data from a survey of IRB members it began 3 years ago. Baldwin said the study found "tremendous variability" in the workload and performance of the nearly 500 panels from which it obtained information. She said many IRB members are concerned about a "tension" between the need to handle reviews quickly and the responsibility to protect volunteers. However, more than 90% of the respondents said they felt that the workload was manageable and had not impaired reviews.

The HHS inspector-general's report, which will be released at Shays's hearing this week, is expected to be much more critical. According to one government official, the HHS report—a draft of which was leaked to *The New York Times* and *The Wall Street Journal*—labels the entire IRB network "a system in jeopardy," as IRBs are overburdened with paper and pressured to meet short deadlines. HHS investigators also reportedly learned that IRB members often appear to have a conflict of interest—such as a financial or personal stake in the research reviewed by their IRB.

At least one outcome is certain: NIH will be funding more research on bioethics. Baldwin said last week that NIH will soon be funding 14 research projects on informed consent and $3 million worth of extramural bioethics training programs.

–Eliot Marshall