

search projects totaling \$42 million for 1993, with the bulk of the work being done at the National Institute of Mental Health (NIMH). Much of the NIH violence research is aimed at determining biological factors that may underlie violent behavior. One study is examining how motor neurons control a sure sign of aggression—movements of the gill covers in fighting fish. Other studies explore a possible genetic basis for violent behavior, investigating whether families of suicide victims have higher than average suicide rates.

But the panel noted an overemphasis on biomedical investigations, with few inquiries into violence's social causes and consequences. Says panel member Eli Newberger of Boston's Children's Hospital: "It's manifestly plain that the NIH investment in violence studies are restricted in the range and pertinence of investigations." The panel called for more research on "hate violence" inflicted according to religion, sexual orientation, race, and ethnicity, such as "gay bashing." The panel also concluded that too few studies are being done on violence inflicted on the elderly, as well as violence involving Hispanic, Native American, and Asian peoples as either victims or perpetrators.

However, the panel hasn't been able to agree on the research areas that NIH should avoid. In a tense exchange, panel member Susan Solomon, head of NIMH's violence and traumatic stress research branch, argued that the panel's mission was to suggest ways to correct program deficits, rather than target programs for elimination. "This is not a zero-sum game," she said. Cornell neurologist and panel cochair Fred Plum argued, however, that "we have to be pragmatists." He felt the panel shouldn't assume that NIH would win more money for new research programs, and if it recommends new research it should also suggest cuts to existing programs for balance. The rest of the panel decided to defer the discussion on cuts until their next meeting on 12 July.

The studies most likely to be proscribed at the next meeting, say panelists, are those that might yield important results but are fraught with overtones of insensitivity. For instance, studies of monkey social behavior might yield insights into human social problems. "Clearly, monkey studies would tell us a lot about the cause of violence, and would be cheaper than incarceration," claims one panel member. "But in the environment today, they would be impossible to do," he says, referring to the controversy that ensued when Frederick K. Goodwin, then director of the Alcohol, Drug Abuse, and Mental Health Administration, in a February 1992 speech compared "high-impact inner-cities" to jungles. Monkey studies, the panel member says, "wouldn't possibly be politically correct."

—Richard Stone

## JAPAN

# Breaching Industry-University Barriers

TOKYO—Achieving harmony in Japan sometimes takes a lot of work. Consider industry and academia. Japanese industrialists view Japan's universities as little more than a filter for sifting out the brightest of the next crop of employees. University professors resent the neglect and enviously eye the well-equipped and well-funded corporate labs now edging into basic research—their turf.

But the two sides are starting to come together over a common concern: the state of research in Japan. Last week, a group of industrialists and academics sought to move the process of convergence along with a joint statement aimed at improving the nation's academic research. Drafted at an ad hoc meeting held in Tokyo, it calls for increased research cooperation between industry and universities; more international exchanges; and, of course, more public and private support for university-based basic research. Japan's government is asked to get both more involved—by increasing funding—and less involved—by loosening control.

The statement is the brainchild of two heavy hitters: Hiroyuki Yoshikawa, president of the University of Tokyo, and Yotaro Iida, chairman of Mitsubishi Heavy Industries Ltd. After holding private discussions, each gathered a delegation of a dozen or so representatives from their respective fields for last week's meeting. Officials from the Ministry of International Trade and Industry (MITI), the Ministry of Education, and the Science and Technology Agency participated as observers.

The declaration outlined "proposals" directed separately to universities and to industry. Universities are called on to subject research programs to outside evaluation; to establish new departments and curricula to reflect changing disciplines; to nurture scientists capable of original, basic research; and to promote more international exchanges by hiring foreign teachers and researchers and encouraging participation in international conferences. Industry, for its part, is encouraged to support basic research at universities and to promote graduate studies by expanding opportunities for those holding advanced degrees. Both sides are urged to exchange researchers and research results.

As for the government, it is urged to provide more money for everything from research to supercomputers and high-speed communications networks. The declaration quoted

the Science and Technology Council, Japan's highest science policy-making body, which last year called for "government investment in research and development to be doubled as soon as possible."

The statement caps trends that have been building over the past decade. One is the beginnings of industry-university collaboration: More than 1100 joint university-industry research projects, with funding of about \$41 million, were under way in the fiscal year through March 1992, up from fewer than 100 in 1983. Another is an increasing openness on the part of universities. The University of Tokyo physics department, for example, recently invited an external evaluation of its policies and programs. But university officials and industry leaders continue to worry about decaying university facilities and dwindling student interest in industrial technologies, which the declaration described as "the foundation of our nation's prosperity."

Tokyo's University's Yoshikawa acknowledges that the statement is long on

goals but short on specifics for remedying these problems. The group is planning semi-annual meetings to work out more specific proposals, he says. But in the meantime, the statement is seen by some as an important sign that in-

dustry and academia are finally trying to bridge the gap that has separated them in the past. Genya Chiba, the founder of Japan's famed ERATO program at the Research Development Corporation of Japan, puts it simply: "There has been little trust, on both sides."

"University professors have no experience of working in private industry," says Iwao Toda, a managing director of Fujitsu Ltd. who has long been involved in research. This means that when it comes to setting objectives for cooperation, "It is hard to reach an understanding," he says. Professors, meanwhile, complain of institutional barriers to closer cooperation. Kinichi Obi, dean of the faculty of science at Tokyo Institute of Technology, notes that industry is within MITI's sphere of influence; universities are under the watchful eye of the Ministry of Education.

After 10 years of discussions about university-industry cooperation, says Chiba, "a national consensus has been reached that there is a problem."

—Dennis Normile

*Dennis Normile is a science writer based in Tokyo.*

**"A national consensus has been reached that there is a problem."**

—Genya Chiba