

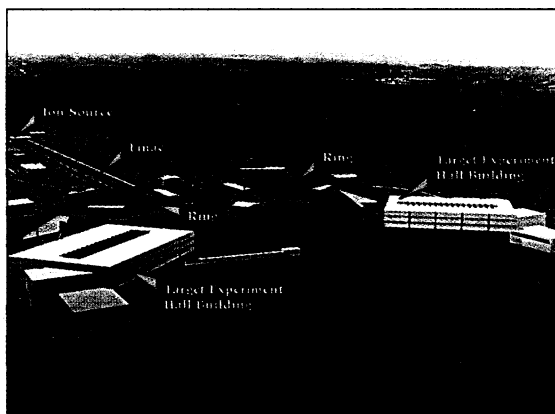
would host the accelerator—the Senate Appropriations Committee provided the full \$157 million to start construction. The House spending subcommittee provided \$100 million. DOE officials say they need about \$130 million to avoid delays, a figure that could emerge as a compromise between the House and Senate levels.

One potential roadblock, however, is a tentative plan by a group of senators to cut funding for the facility to pay for increases in renewable energy work requested by the Administration but ignored by the committee. Both House and Senate committees funded renewables at this year's level of \$346 million, some \$90 million below the president's request. A move to shift the funding on the Senate floor could put the White House in an awkward position, since both are Administration priorities.

House and Senate panels each approved \$232 million for magnetic fusion, a \$4 million boost over the request but essentially the same funding as this year. Other civilian research programs received the full request. Stockpile stewardship, the biggest science-related defense program, aimed at maintaining nuclear weapons without testing, was kept at its current \$4.15 billion level by the House but given \$4.45 billion by the Senate. That mark was just shy of the Administration's \$4.5 billion request.

■ **NSF:** The Senate Appropriations Committee approved a 6.3% overall increase for NSF, including a 7% boost for research. Although that is well below the president's request for a 10% boost, the \$3.64 billion figure was a relief to Administration officials, who had feared much worse. "It's much better than it could have been," said NSF director Neal Lane, who is awaiting Senate confirmation as chief of the White House Office of Science and Technology Policy.

Although the committee embraced the agency's initiatives on knowledge systems and integrating teaching and research, it added \$10 million to NSF's \$40 million request for plant genome research, a pet project of panel chair Senator Kit Bond (R-MO). Thanks to Appropriations Committee Chair Senator Ted Stevens (R-AK), the panel also inserted \$24 million for Arctic logistics support, asking NSF to prepare a report listing its priorities for the extra money. At the same time, Stevens crafted language to block any spending on a proposed Polar Cap Observatory (*Science*, 8 May, p. 820), a \$25 million geophysical facility that NSF wants to build in northwestern Canada. The prohibition reflects Stevens's unhappiness with a non-U.S. site and Canada's reluctance to share in the cost of the facility, as well as a running feud between the



Power source. Oak Ridge's Spallation Neutron Source gets legislative nod.

countries over fishing rights.

■ **NASA:** Clinton's request would have slashed more than \$150 million from NASA's budget, but the Senate panel voted to keep it level at \$13.6 billion. Most of the additional funds above the request would go to science projects, while \$30 million would be spent to bump up the space station budget. NASA officials say, however, that the increase would go largely to a host of pork-barrel projects not requested by the agency.

■ **Defense:** Basic research funded by the military would jump more than 6% under the plan approved by the Senate Appropriations Committee last week, to \$1.1 billion. That's only \$6 million shy of the president's request. Applied research would increase by 3.2%, to \$3.1 billion. In the House, the defense spending subcommittee

provided \$1.05 billion for basic research and \$3.2 billion for applied work.

■ **Environmental Protection Agency:** EPA's science and technology account received \$643 million, 1.6% above the president's request, including \$10 million more for research on the health effects of fine soot particles.

■ **Next Generation Internet:** This \$110-million-a-year effort is considered piecemeal by each panel with jurisdiction over the participating agencies. And for the second year in a row it's encountering rough waters. The biggest player, the Defense Advanced Research Projects Agency, had its \$40 million request cut by \$10 million by the Senate defense panel, although its counterpart in the House added \$13 million. The House energy panel zeroed out DOE's \$22 million request, while Senate appropriators left in \$12 million. Last week a presidential advisory panel called for increased public investment in information technology, and Clinton trumpeted the initiative during a commencement address at the Massachusetts Institute of Technology.

In the coming weeks, these and other spending bills will be debated on the House and Senate floors. Lobbyists and staffers say they expect negotiations, including the threat of a presidential veto over some provisions, to drag on well into the fall. The 1999 fiscal year begins on 1 October.

—Andrew Lawler

With reporting by Jeffrey Mervis and Jocelyn Kaiser.

JAPAN

Imura Gets Job on Top-Level Council

TOKYO—A leading academic has been named to help run the country's highest scientific advisory body. Endocrinologist Hiroo Imura, former president of Kyoto University, was appointed last week to one of two full-time positions at the prime minister's Council for Science and Technology, which will be given broader authority under a government-wide reorganization scheduled to go into effect in 2001. Coincidentally, that reorganization, which will merge the country's two major pillars of research funding, the Science and Technology Agency (STA) and the Ministry of Education, Science, Sports, and Culture (Monbusho), was also approved last week by the Japanese Diet.

The council, chaired by the prime minister, has played a leading role in shaping national science policy. In 1992 its recommendation that the government double spending on science led to the 1995 Science and Technology Basic

Law and a subsequent 5-year plan spelling out how to achieve the spending goal by 2000. Much of the council's business is carried out by appointed panels of scientists; its current studies include an examination of government policy on cloning research and



Change agent. Hiroo Imura sees pending reforms as major challenge for council.

EUJIMYAZAWA/BLACKSTAR

the nation's efforts in information sciences. The latter study is seen as a prelude to new research initiatives: Similar studies of brain science in 1996 and life sciences in 1997 preceded jumps in funding for those fields.

Imura's appointment to the 3-year term, which begins this week and can be renewed twice, is widely applauded by science administrators. "He's probably the best person for the job," says Kaoru Mamiya, deputy director-general for policy at STA. Ken-ichi Arai, director of the University of Tokyo's Institute of Medical Science, says he expects Imura to play "an active role" on the council by parlaying the respect he enjoys within the scientific community with his skills as an administrator.

Imura succeeds the retiring Wataru Mori, a pathologist and former president of the University of Tokyo. The other full-time council post is held by Mutsumu Ishizuka, a former STA official. Although Imura declined to discuss specific policies facing the council, he said that the coming reorganization is one of its important challenges.

The council, whose members include several Cabinet officials and the president of the Science Council of Japan, an independent scientific association, draws its support staff from STA. Although Japan's notorious bureaucratic rivalries have lessened, the council's close ties to STA limit its authority over other ministries. Under the reorganization, the council will draw its support staff from within the Cabinet secretariat rather than from STA, and its authority will extend to the social sciences and humanities. "It will be a place to discuss the country's overall science policy," Imura says.

In addition to Imura's arrival, science advocates are also eagerly awaiting the expected election next month to the nation's upper house of Akito Arima, a physicist who has headed the University of Tokyo and the Institute of Physical and Chemical Research (RIKEN). Arima is rumored to be a candidate for education minister if the Liberal Democratic Party maintains its grip on power. That one-two punch would be good news for science, says Arai. "Imura's [efforts will] complement Arima's activities," he says. "They make a good team."

Scientists hope that the presence of Imura and Akima might lessen the chance that research gets short shrift in a combined STA-Monbusho ministry. In particular, some fear the loss of status for STA, which has begun such innovative programs as the Frontier Science Program and the Exploratory Research for Advanced Technology (ERATO) program. Genya Chiba, executive director of the entity that administers ERATO, praises both men but worries about the influence they will have. "There are limitations to what ministers can do," he says. As for the council, "until we see it, we can't know for sure."

—Dennis Normile

ROMANIA

Science Emerges From the 'Dark Age' of the Ceausescu

BUCHAREST—In the final years of Communism in Eastern Europe, while most regimes were still pouring resources into scientific research, scientists in Romania were in the midst of a terrible "dark age." Elena Ceausescu, wife of the repressive communist leader Nicolae Ceausescu and Romania's self-appointed "First Chemist," took advantage of her dubious scientific qualifications to dominate the nation's science policy, decimate the Romanian Academy—shifting its institutes into government ministries—and dictate a nationwide shift toward applied research.

That period of tyranny ended with the firing squad that executed the Ceausescus on Christmas Day, 1989. But when the country entered its new era of freedom, most of its scientific enterprise was in shambles. Since that unpromising start, Romania has made a significant effort to turn itself around. Some scientists have attained positions of political influence, including Romania's president, former geology professor and university rector Emil Constantinescu, and the new research minister, mathematician Horia Ene. Universities, academy institutes, and research centers are all adopting a competitive process for scientific grants. The Parliament recently endorsed the concept of increasing the currently anemic level of R&D funding. And the revived Romanian Academy, universities, and industry are now developing a national research plan to set scientific priorities. But, as in most countries in Eastern Europe, there is still a long way to go before Romanian science is back on its feet.

Romania has a proud history of research, particularly in chemistry and physics, which accounted for 60% of all Romanian scientific papers published between 1993 and '97; the country's mathematicians and computer scientists now have a noticeable impact, according to statistics compiled by Philadelphia's Institute for Scientific Information (ISI). Overall, however, ISI's latest figures indicate that Romania ranked 31st out of 33 European na-

tions in terms of the citation impact of its scientific publications from 1993 to '97—outranking only Turkey and Slovakia.

The citation figures have improved since they bottomed out in 1989–90. But Romanian researchers still work within a crumbling scientific infrastructure. "Because the government must contend with so many problems, science is not a major priority right now," says Petru Filip, director of the academy's Institute of Organic Chemistry. "The best we can do today is reorganize our research, keep as many talented young people as possible, and survive this difficult transition period intact."

Some research institutes have been unable to buy a major new piece of equipment in decades; many institute directors earn the equivalent of about \$150 a month; and last year's budget for research and development fell below 0.3% of the gross domestic product—compared to about 2.5% of GDP in leading industrial nations. At Romania's Institute of Atomic Physics—a sprawling complex of nine research institutes in Magurele, near Bucharest—gypsy caravans rumble past the partly empty buildings, where hallways are sometimes dark because thieves pilfer the light bulbs. "We are trying to be as competitive as possible with badly outmoded equipment—most of which is more than 20 years old," says Voicu Lupei, the Atomic Institute's general director. "During the last 10 years, we have had barely enough funding to cover the scientists' salaries."

"There is great talent and potential here," says biologist Maya Simionescu. "But you can't keep that talent unless research institutes receive a critical mass of funding." Simionescu heads one of the few independent research facilities that was able to thrive during the nightmarish 1980s, the Institute of Cellular Biology and Pathology. She and her late husband, Nicolae Simionescu, founded the institute in



Trying to be competitive. Physicist Voicu Lupei.



Imported Western techniques. Biologist Maya Simionescu.