promise is welcome news to scientists who had worried that the reactor might lie dormant until after Germany's national elections in September 2002.

Construction of the $500 million FRM-II neutron source was completed on schedule this summer. But the federal government in Berlin, led by a coalition of Social Democrats and the Green Party—a vocal opponent of nuclear energy—has delayed giving the reactor final permission to start. The reason: The reactor will use highly enriched uranium fuel, a potential ingredient in nuclear weapons. The federal government announced in March that it wanted the reactor to switch to medium-enriched uranium by 2006 (*Science*, 30 March, p. 2527), but FRM-II researchers and the Bavarian state ministry of science said such a rapid switch was technically infeasible, leading to a deadlock.

Now the two sides have reached a compromise. On 17 October, Wolf-Michael Catenhusen, the federal government's parliamentary secretary for research and education, and Bavaria's science minister, Hans Zehetmair, agreed that the reactor would switch to medium-enriched uranium after 10 years. The 10-year timetable is realistic, says physicist Winfried Petry of Technical University in Munich, and the agreement signals that "there is a political will to take the thing into operation."

The reactor still faces one more hurdle, however: The environment minister, Jürgen Trittin, a member of the Green Party, must give his approval. Trittin told *Science* this week that he will do so as soon as FRM-II officials present an acceptable plan for dealing with the reactor's radioactive waste. That requirement is standard for new reactors, but it could lead to more delays if the facility becomes caught in ongoing national controversies over nuclear waste storage in Germany. Trittin is also waiting for a final recommendation on FRM-II from the national radiation protection commission, which is not scheduled to meet until December. Zehetmair says he is optimistic that the environment ministry will not delay further. "Based on our recent talks, we expect the ministry to give permission early next year," he told *Science*.

Project leaders have warned that if the standoff lasts much longer, they fear a mass exodus of talented researchers. Already at least 15 of 100 researchers involved in the project have left, in part because of the uncertainty, Petry says: "It is more than disappointing to do nothing but sit and wait for a commission that will not even meet until December. All the instrumentation is ready, and we are waiting." —GRETCHEN VOGEL

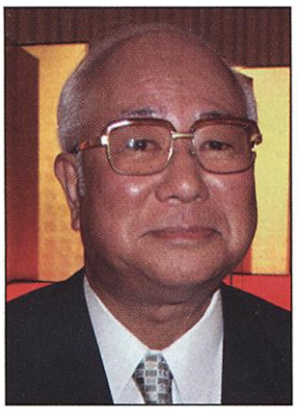
CREDIT: D. NORMILE

JAPAN

Summit Seeks Boost For Life Sciences

TOKYO—A powerful group of biotechnology industry leaders gave the Japanese government a wish list this week: better coordination of government spending in the life sciences and increased emphasis on commercializing the results.

The proposals, drawn up by the Japan Association of Bioindustries Executives (JABEX), represent an unusual effort by industry to affect academic research. They were released at a Life Science Summit here involving some 600 industry, academic, and political leaders. The proposals are expected to get a sympathetic hearing, thanks to the group's political connections and the administration's policy of emphasizing research with a potential economic payoff.



Looking for direction. Katsuhiro Utada heads a Japanese industry group that wants better coordination in the life sciences.

Katsuhiro Utada, chair of the major food processor Ajinomoto Ltd. and also head of JABEX, says that life science research in Japan is not generating the same social and economic returns as in the United States and Europe. The group argues that current efforts are hamstrung by the diffusion of government support for the field, which is divided among five ministries and several public corporations. More importantly, Utada says, "there is no strategy for the smooth and speedy commercialization and industrialization of basic life science research results."

JABEX wants the government to establish a task force, chaired by the prime minister, to develop and oversee a comprehensive strategy for everything from basic research to industrial biotechnology processes. It also urges the creation of a committee to review existing programs, with funding linked to the evaluations and the panel's priorities.

Researchers are intrigued by some aspects of the proposals. Michio Oishi, a molecular biologist who heads the Kazusa DNA Research Institute in Chiba, says that applying the same review criteria to all life science projects could benefit university researchers. They now compete for smaller awards and typically have their work scrutinized more closely than do their colleagues at national research institutes. "I think professors at universities would welcome this move," he says.

Less welcome would be any move to re-

ScienceScope

Synergy Paper Misconduct The U.S. Public Health Service (PHS) last week announced scientific misconduct findings against a former Tulane University scientist who co-authored an influential—but later withdrawn—*Science* paper on gender-bending chemicals. According to experiments done by Steven Arnold in John McLachlan's lab, certain pollutants became up to 1000 times more reactive when mixed together in a cell assay for estrogenic activity (*Science*, 7 June 1996, p. 1489). The findings fanned public concern about endocrine disrupters as Congress was passing new legislation to require testing for them. McLachlan later withdrew the paper after other researchers failed to replicate the results.

A Tulane investigation cleared McLachlan of misdeeds but found that Arnold "provided insufficient data to support" the paper (*Science*, 18 June 1999, p. 1932). Now PHS, whose Office of Research Integrity reviewed the matter because Arnold had National Institutes of Health funding, has found "no original data or other corroborating evidence" for the paper and that Arnold "provided falsified and fabricated materials" to Tulane investigators. Arnold has admitted his wrongdoing and is barred from receiving PHS grants for 5 years.

Biotech Bounty France's ailing biotech industry is slated to get a big shot in the arm next year. The finance ministry announced on 18 October that its 2002 budget will include $133 million for biotech start-ups: $53 million in seed money and $80 million in guaranteed loans.

The industry group France Biotech celebrated the news. "We are very satisfied," says president Philippe Pouletty. The commitment, the group notes, may also help convince the European Investment Bank to add more funds to the pot, which could be used for everything from starting new companies to obtaining patents and capitalizing acquisitions.

The organization has long decried France's ranking behind Germany and the United Kingdom in European biotech investment. Germany vaulted to the lead in the late 1990s after the government upped its stake. The new French program, Pouletty predicts, will allow French biotech investment to "reach first place [by] 2006."

Contributors: David Malakoff, Jocelyn Kaiser, Michael Balter

duce the number of funding sources—a move the industry group has not advocated, although media reports have incorrectly described the plan as a proposal to create a Japanese National Institutes of Health. Some scientists also worry that the task force could overlap with the work of the new, top-level Council for Science and Technology Policy.

The fate of the proposals is uncertain, but industry leaders are heartened by a message to the summit from Prime Minister Junichiro Koizumi, who said it is "very important to develop a strategy for life science research." Koji Omi, the minister for science and technology policy, promised to "take all these opinions into consideration" in plotting the future of life science research in Japan.

–DENNIS NORMILE

CHINA

First Western Chair Named at Qinghua

BEIJING—When Purdue University's Gavriel Salvendy met with a delegation from China's prestigious Qinghua University last spring, he had no idea they were on a recruiting mission. But this month Qinghua made history by appointing Salvendy as chair of its new industrial engineering program. Salvendy, who will divide his time between Qinghua in Beijing and Purdue in West Lafayette, Indiana, will be the first foreign scientist to head a university department in China since the Communists came to power in 1949.

Honored. Gavriel Salvendy gets a pioneering post at Qinghua University.

CREDITS: (LEFT TO RIGHT) COURTESY G. SALVENDY; SOURCE: F. GIORGI/ABDUS SALAM ICTP

Salvendy's appointment is part of a larger effort by Qinghua, already regarded as China's top technology school, to recruit outsiders to further raise the quality of its academic programs. "I'm the guinea pig," says the 63-year-old Salvendy, who was born in Czechoslovakia, raised in Israel, and trained in Europe before coming to Purdue in 1971. Qinghua officials say they plan to offer key positions to some 50 leading Western scholars in the next 5 years, financed by contributions from wealthy Chinese companies within the country and overseas. "We wish to build up our industrial engineering department to international standards in education and research as soon as possible," says Lin Heng, vice chair of the new department. "With Professor Salvendy as our dean, we are hopeful of achieving our goal."

Salvendy's first nine faculty appointments are all native Chinese—"I didn't have the option of hiring from the outside," he says. But greater interaction with the United States is a priority. "Each year we will have three U.S. professors teaching and working in China for 1 month, and there will also be a student exchange program between the two universities. The idea is to move totally to English instruction within 3 years."

Salvendy, an expert in human-machine interactions and a member of the U.S. National Academy of Engineering, adds his Qinghua duties to an already full plate as the NEC professor of industrial engineering at Purdue and founding editor of three international journals. He says that he wouldn't have taken the job at any other school: "I've had 10 Ph.D. students from Qinghua in the last decade, and the quality of their work is phenomenal." He expects to spend 1 month a year in Beijing, and his $100,000-a-year salary—more than 10 times what the average Chinese academic earns—will go into a special fund to support his Purdue lab.

Being an outsider may even work to his advantage, Salvendy says. "You know," he jests, "that companies always listen more closely to consultants than to their own people."

–JEFFREY MERVIS

With reporting by Yang Jianxiang in Beijing.

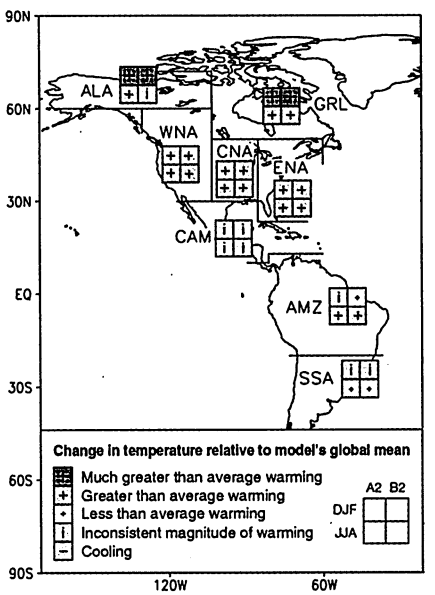
CLIMATE CHANGE

A Little Sharper View Of Global Warming

With scientists suggesting that the globe could warm by at least a couple of degrees by the end of the century, members of Congress want to know exactly what's going to happen in their city-size districts back home. Who will the winners and losers be, they ask? Tough as the question is to answer at the local level, researchers are starting to see a glimmer of improvement in predictions of regional climate change: an emerging consistency in model calculations of temperature and precipitation for subcontinental-scale regions. "To me, it's quite surprising that the response [of the models] is so consistent at the regional level," says modeler Filippo Giorgi of the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy. "Now the models are starting to show some patterns," ones that suggest a distinctly uneven impact of greenhouse warming.

The hints of coming regional changes are in the just-published U.N.-sponsored report *Climate Change 2001: The Scientific Basis* (Cambridge University Press), for which Giorgi and Bruce Hewitson of the University of Cape Town, South Africa, were coordinating lead authors of the regional climate chapter. The chapter examined forecasts by nine state-of-the-art global climate models, the largest number ever compared at a regional scale. With a sharper view of climate and improved representations of key atmospheric processes, this latest generation of models is "definitely doing better" at reproducing current climate on a regional scale, says Giorgi.

The new comparison confirms the previously reported much-greater-than-average warming in winter at high latitudes, as well as the greater-than-average increase in precipitation there. But it also pushes a greater-than-average warming down into northern midlatitudes. The June-July-August period would warm less than average over southern South America, South Asia, and Southeast Asia. In much of the tropics and subtropics, however, most models disagreed widely about how far temperatures would rise. Predictions for precipitation were less consistent, except at high latitudes, although the consensus called for a stronger summer monsoon across most of Asia and drier winters in Australia and southern Africa.



A mixed bag. Climate models call for greater-than-average greenhouse warming (orange) over most of North America and less-than-average warming (yellow) some seasons in South America, but often they can't agree (pink).

Climate researchers welcome the regional-scale comparisons. "I think this is heading toward more quantifiable estimates of reliability," says modeler Gerald Meehl of the National Center for Atmospheric Research (NCAR) in Boulder, Colorado. But "we've got a ways to go in producing good regional projections," warns meteorologist Kevin Trenberth of NCAR. "Simply because models agree doesn't mean they're right." They could agree in a region because they are all wrong in the same way, he notes, such as not reproducing the effects of El Niño. To be sure that models are agreeing for the right reasons, more and ostensibly better models must be compared.

–RICHARD A. KERR