

Rice Genome Races Ahead

While government officials are struggling to reshape Japan's human genome effort, the country's Rice Genome Research Program (RGP) is moving forward with alacrity. Program scientists have put together highly detailed genetic and physical maps, and a large library of cDNA clones, reaching the major goals of the first 5-year phase of the program on schedule and within budget. The work, which includes 2400 DNA markers on a genetic map, has earned plaudits from plant geneticists around the world.

"The [RGP] project has been acclaimed, and rightly so, for its technical contributions," says Susan McCouch, a Cornell University geneticist who works on rice. The program is also getting a vote of confidence from the Japanese government in the form of a proposed 429% increase in funding. The growth could help offset a drop in contributions from the Japanese Racing Association—a quasi-public entity that runs betting operations at the country's horse-racing tracks and is required to donate a portion of its proceeds to agricultural research—that once matched what the government spent but which have been hurt by a sluggish economy.

Whatever the total, the money will support efforts to sequence all 450 million base pairs on the plant's 12 chromosomes and to

expand efforts to identify genetic markers common to other cereals. Such a concerted effort has helped the country overcome a fast start by McCouch and her colleagues at Cornell, who published a basic genetic map in 1988. "The U.S. agricultural research establishment is deep; Japan's is shallow," says Naoki Katsura, head of research planning for the National Institute of Agrobiological Resources (NIAR). "So we recognized the merits of concentration."

The logical choice was rice, not only because it has the smallest genome of any of the major cereals, but also because of its importance as a crop and as a cultural icon for Asia. The ministry and its researchers also concentrated resources in one location within NIAR's Tsukuba campus, assembling a team that has grown to 50 scientists.

A similar strategy for the second phase of the project—doubling the number of scientists and hiring more technicians—will also extend collaborations beyond current efforts with the John Innes Centre in Norwich, U.K., to identify markers common to rice and wheat, and scientific exchanges with the International Rice Research Institute in Los Baños in the Philippines. Katsura says he would also welcome help on the large-scale sequencing to shorten what otherwise might be a decade-long effort. —D.N.

sequencing was scrapped in the early 1990s. Yokoyama thinks the key to continued government support for genome work is the reaction of the international community. "If this effort is appreciated by other countries, I think [the

Japanese government] will expand its support," he says. But if the project is judged solely on its contribution to sequencing, he says, Japan's genome efforts could be in trouble.

Despite the risks, Sagami's Wada is glad

the country has decided to chart its own course. And he says he's "very confident" that Japanese researchers will contribute to the global quest to decipher the human genome.

—Dennis Normile

NATIONAL LABS

SUNY-Battelle Team to Run Brookhaven

Six months of uncertainty at Brookhaven National Laboratory ended last week, when Department of Energy (DOE) managers chose a new contractor to operate the troubled facility in Upton, New York. The winning team, which takes over in January, is made up of the State University of New York (SUNY), Stony Brook, and Battelle Memorial Institute. It now faces the challenge of mending fences with the lab's neighbors and resolving the fate of a major research reactor that local groups and New York politicians want to close.

The new director, former Stony Brook President John Marburger, promises to make major changes to clean up environmental problems and ease the concerns of the surrounding Long Island population. "Job one is to establish contact with our community," he said on 25 November. He also pledged to make "major reassignments" within the 3200-member staff to ensure that Brookhaven abides by environmental regulations while producing quality science. Marburger, a physicist, is a former chair of Universities Research Association Inc., a consortium that operates DOE's Fermi National Accelerator Laboratory, the country's most powerful accelerator.

DOE Secretary Federico Peña fired Brookhaven's current contractor, Associated Uni-

versities Inc. (AUI), in May, following revelations of a long-standing tritium leak at the High-Flux Beam Reactor (HFBR), which is shut down for repairs (*Science*, 9 May, p. 890). In the competition that followed, the Stony Brook- and Columbus, Ohio-based Battelle beat out another group led by Westinghouse and IIT Research Institute of Chicago for the \$2 billion, 5-year contract to operate the \$400-million-a-year lab. The winning factors, DOE sources say, were Stony Brook's proximity to the lab and Battelle's experience in managing large organizations like Pacific Northwest Laboratory in Richland, Washington, next door to the polluted Hanford site used to store waste from nuclear weapons production. DOE says the new contract's higher annual fee—\$1 million more than the \$4.2 million paid to AUI—reflects the added cost of ensuring environmental safety and restoring public confidence in the lab.

The new team, called Brookhaven Science Associates, will have a 16-member board, in-

cluding representatives from the six northeastern universities who make up AUI. But the majority of members will be Stony Brook and Battelle managers, Marburger said. Although DOE told bidders to rule out any layoffs or dismissals, Marburger says "there will be a lot of change in the functions people perform."

One of the most pressing issues for the new operator is the fate of the HFBR. Many neu-

tron scientists are eager for it to come back online, but Senator Al D'Amato (R-NY) and Representative Michael Forbes (R-NY) say it's an environmental hazard that should be closed permanently. Peña is expected to decide by early spring, but even if he sides with the scientists, an environmental impact review will keep the HFBR shut until 1999. That is also the starting date for Brookhaven's newest facility, the Relativistic Heavy-Ion Collider.

Given those problems, Marburger says he's prepared for some long days on the job. "I don't have any illusions," he told reporters. "The next year will probably be a difficult one."

—Andrew Lawler



Job challenge. Marburger expects a "difficult" year at Brookhaven.