SCIENTIFIC EXCHANGES

DOE Blocks Physicists From Indian Meeting

CHICAGO—The U.S. Department of Energy (DOE) has refused to allow physicists at its national laboratories to travel to a major particle physics conference in India this week in apparent retaliation for that country's series of nuclear tests last May. At least seven physicists from the Fermi National Accelerator Laboratory and Argonne National Laboratory, both outside Chicago, were denied requests for travel to the 13th Topical Conference on Hadron Collider Physics, which began yesterday at the Tata Institute for Fundamental Research in Mumbai (formerly Bombay). Scientists say that such bans were not imposed even at the height of the Cold War for similar travel to the Soviet Union and China.

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>
> **—John Peoples**

The decision, which does not affect U.S. university researchers, has generated confusion and shock among physicists and lab officials, who fear they have become pawns in a political chess match. The conference "has nothing to do with weapons," says Daniel Green, a Fermilab physicist scheduled to give an overview talk on particle experiments at the conference before DOE denied his travel request. "We never even did this with the Russians at the worst part of the Cold War," says John Peoples, Fermilab's director. "This is a precedent."

Just as onerous, according to Peoples, was a separate decision last summer not to allow Indian physicists from the Tata Institute to continue their collaboration on the D0 project at Fermilab—even though the Indian government has already contributed half a million dollars' worth of hardware for detectors, which track collisions of subatomic particles. As a Kafkaesque touch, Peoples says that DOE also ordered him—in writing—to remove the Indian flag from the United Nations–like display in front of Fermilab's main building. "I think that a public outcry is called for," says Andrew Sessler of Lawrence Berkeley National Laboratory in California, who is president of the American Physical Society. The Indian organizer of the conference, Tata's Vemuri S. Narasimham, called the decision "scientific harassment" and said the invitees "will certainly be missed."

Tata, one of the country's most prestigious scientific institutes, was placed on a list of restricted sites because it conducts joint research with the Bhabha Atomic Research Center, "which is at the heart of India's nuclear weapons program," says an official at the State Department, which made the final decision. "For this reason, we concluded that participation by [DOE] lab scientists in a conference sponsored by the Tata Institute was not appropriate," he says. "We're very disappointed," says Harry Weerts, a D0 spokesperson at Michigan State University in East Lansing who will speak at the conference. "Our research has nothing to do with the people who make atomic bombs."

Scientists at national labs must receive approval for any foreign travel. The first hint of possible trouble came last fall when Fermilab's Rajendran Raja, an Indian-born U.S. citizen, was asked by D0 colleagues to submit his request as a "test case." After some delay, Raja and other physicists were told late last month that their requests had been denied because of Tata's status in the wake of the nuclear tests.

"This will alienate the Indian scientific community, which is largely pro-U.S.," says Raja, who has received permission from Peoples to travel on his own time to give his talk and visit family. "And it'll strengthen the hard-liners in India." **–JAMES GLANZ**

FREEDOM OF INFORMATION

Scientific Leaders Balk At Broad Data Release

Prompted by concerns that the public may soon get access to all federally funded researchers' records, Congress, the Office of Management and Budget (OMB), federal research agencies, and the scientific community are on the verge of a great debate over the meaning of the word "all." By the end of this month—possibly within a few days—OMB is expected to take the first step toward implementing a new congressional mandate that "all data" produced with federal funding be given to anyone who seeks them under the Freedom of Information Act (FOIA) (*Science*, 6 November 1998, p. 1023).

Opening the files? Wendy Baldwin of NIH.

But even before OMB formally launches the debate—it plans to issue a Notice of Proposed Rule Making and ask for public comment—science policy officials have begun building a case against too freewheeling an interpretation of the new law. Together with key congressional allies, they warn that federally funded research could be hobbled if scientists are forced to disclose experimental results before they are published in a scientific journal, before the end of an ongoing clinical trial, in a form in which human research subjects might be identifiable, or in a manner in which confidential data provided by collaborators might be revealed, among other issues.

Officials are urging scientists and scientific organizations to weigh in with their own worries. The Association of American Universities and the Council of Government Relations already have done so. In a 4 December 1998 letter to OMB, they not only cautioned against too-broad FOIA disclosure but also asked for clarification of who should bear the potentially "significant" costs involved.

National Institutes of Health (NIH) director Harold Varmus calls the provision "a potential burden—even a threat—to our investigators." A National Science Foundation (NSF) spokesperson says it could create "tremendous burdens" for both scientists and the agency. "Most of us believe there should be procedures in place and understanding of how you do share data," says Wendy Baldwin, NIH deputy director for extramural research. "The problem is, this is too blunt an instrument."

Not just blunt, but sudden. The FOIA provision, sponsored by Senator Richard Shelby (R–AL), was written into last October's massive omnibus appropriations bill at virtually the last moment, replacing language that originally ordered OMB simply to study the issue. The new 106th Congress could back away from Shelby's sweeping new FOIA requirement, and some members say it should. Representative George Brown (D–CA), ranking Democrat on the House Science Committee, last week introduced legislation to repeal the provision and start over—with hearings to determine what the data-access problem really is. "Documentation of this problem has been no more than anecdotal," said Brown in a statement. "We should not jeopardize this [government-sponsored research] enterprise by taking a hasty, ill-considered approach to remedy an alleged problem."

Even though FOIA provides exemptions for personal and proprietary data, Brown said individuals and companies might shy away. "Significant loss of voluntary participation in public health and biomedical research would be devastating," he said, adding that mandating release of all data "would undermine" intellectual property protections.

In addition, 22 other House members—six Republicans and 16 Democrats—joined Brown in a 7 December 1998 letter to

OMB director Jack Lew warning of "a number of negative, unintended consequences." Co-signers include Representatives Vernon Ehlers (R–MI), an influential Science Committee member, and John Porter (R–IL) and James Walsh (R–NY), who chair the House Appropriations subcommittees that oversee the budgets for NIH and NSF. They might revisit the issue in this year's appropriations bills.

But congressional aides caution against betting that lawmakers will undo the FOIA requirement as nonchalantly as they enacted it. Some members want to let the process work and see if OMB can come up with a rule that the scientific community can live with, says one Science Committee staffer. That doesn't seem likely. No matter how imaginative OMB may be, it will be hard to soften the meaning of the words "all data."

–BRUCE AGNEW

Bruce Agnew is a writer in Bethesda, Maryland.

GENOMICS

India Prepares Research, Policy Initiatives

CHENNAI, INDIA—Senior government officials and scientists last week endorsed a series of steps to bring India into the mainstream of global genomics research. But the proposals—which include studies of human diversity and plant genomes, participation in an international rice genome project, and new laws to permit the patenting of novel genes—seem likely to face vocal opposition on social, ethical, and political grounds.

"Biotechnology will be the key to India's future, both for modern agriculture and the pharmaceutical industry," Nobelist James Watson, emeritus director of New York's Cold Spring Harbor Laboratory, told some 5000 Indian scientists gathered last week at a daylong Genome Summit held as part of the annual Indian Science Congress here. "India should take DNA technologies far more seriously if it does not want to be left behind." At the same meeting, Manju Sharma, secretary of the government's Department of Biotechnology, promised to strengthen "our nascent genomics program ... so that India can put the right foot forward into the next millennium."

Sharma has asked the government for up to $40 million for genomics research annually for the next 10 years, some 16 times more than the present rate of funding. Part of that would create a national network of centers of excellence to coordinate the expertise needed to understand the human genome, starting with a Center for Human Genetics Research in Bangalore planned for later this year. The Congress endorsed her request, which is currently before the prime minister.

Biotechnology advocates say that India is a "living laboratory" for studying human genetics. A recent study by the Anthropological Survey of India found "4635 distinct human communities like castes and tribes, including as many as 75 endangered tribal groups, 324 functioning languages, and 25 scripts." But there is great concern that any information obtained from such a diverse population will be exploited by multinational drug and food companies and not benefit the Indian public. Vandava Shiva, head of the Research Foundation for Science, Technology, and Ecology, wants a 5-year moratorium on commercial transgenic products "to ensure biosafety and protect the rights of small farmers." The near absence of domestic industry involved in genomics work to date is another major stumbling block to progress, as are antiquated laws on intellectual property.

The new network would build on several tentative steps India has taken recently to stimulate genomics research. In 1994, for example, it began a $2.5 million initiative to explore the genetic diversity of its people and to study the country's most common genetic diseases. The initiative has created 14 genetic counseling centers across the country for molecular diagnosis and treatment of a variety of genetic disorders, including thalassemia and muscular dystrophy. Sharma also would like to expand the number of counseling centers.

A small plant genome program has also been started. Last year India put up $250,000 for a Plant Genome Research Center at the Jawaharlal Nehru University in New Delhi, but debate continues on whether the first plant to be targeted should be an edible legume, rice, or a medicinal plant. Last week Rajendra S. Paroda, director-general of the Indian Council of Agricultural Research in New Delhi, told *Science* that the country "will participate as an equal partner in the rice genome initiative," an international effort led by Japan. Although details of the program are still sketchy, experts hope that India will take up work on sequencing at least one chromosome.

Gene pool. James Watson (left) meets with geneticist Sharat Chandra and Manju Sharma at Genome Summit.

CREDIT: P. BAGLA

Agreeing on the need for genomics research doesn't remove the obstacles facing scientists, however. India still does not recognize product patents in the areas of agriculture, pharmaceuticals, and medicines, and patenting life-forms is prohibited. In addition, most biotech companies are involved in vaccine development and tissue culture, not genomics. "India should get its local industry onboard and should be looking seriously at private sector funding for its genome program," says Watson, the former head of the genome project at the U.S. National Institutes of Health, adding that his "biggest mistake [there] was not to appreciate the commercial value of the human genome."

Although the political climate is not hospitable to a quick change in patent law, India's status as a founding member of the World Trade Organization requires it over the next several years to recognize product patents and to harmonize its policies with the rest of the world. And there are signs that officials may be ready to mount such an effort. Breaking a long-standing taboo on even discussing the subject, Sharma told *Science* that "India should start permitting the patenting of genes, and rules should be so changed that our scientists can patent the novel genes and products they find."

In addition to possible legal reforms, there remains a need to educate the public about genetically modified organisms. The possible introduction of the so-called "terminator gene" in Indian crops has sparked numerous protests, and on 2 December farmers' organizations destroyed seven sites in southern India that were testing a transgenic variety of cotton developed by the Monsanto Co. M. S. Swaminathan, a geneticist and chief of the M. S. Swaminathan Research Foundation here, says "good bioethics, biosafety, and biosurveillance policies and practices are needed to dispel these fears." Last week, at a national meeting sponsored by the foundation in conjunction with the Congress, more than 100 scientists and policy-makers proposed a high-level and independent National Commission on Genetic Modification of Crop Plants and Farm Animals to advise the government.

Government officials declined to comment on the value of such an initiative. But Sharma warned that prompt action is needed. "India has a billion mouths to feed, and there is no question of increasing the arable land. The only option is to increase productivity through the judicious use of biotechnology."

–PALLAVA BAGLA