ANIMAL BIOTECHNOLOGY

Environmental Impact Seen as Biggest Risk

The biggest risk of developing genetically modified (GM) animals is that they might alter the environment, according to a new report from the National Research Council. The NRC panel also questioned the wisdom of having the Food and Drug Administration (FDA) be one of three federal agencies that are regulating the environmental impact of this emerging technology.

Wild card? Mobile GM animals, such as sterile pink bollworms, might harm ecosystems in unknown ways.

CREDIT: USDA

Last year, FDA asked NRC for a list of science-based concerns to consider when reviewing products of GM animals. The report identifies three main categories of potential risk. It places environmental hazards at the top of the list, followed by threats to human health from xenotransplantation (the placement of organs from GM animals into humans) and from the consumption of GM foods. By separating major and minor risks, "we hope we can help this technology be applied as safely as possible," says John Vandenbergh, a behavioral endocrinologist at North Carolina State University in Raleigh and chair of the NRC committee.

FDA officials sought advice because they are evaluating several GM animals, including salmon. Some of these animals are intended for the dinner table; FDA is regulating them because it considers the proteins expressed by their foreign genes to be new animal drugs. No transgenic animals have yet been approved for human consumption.

What most alarmed the committee was the prospect of GM animals entering the environment. "We don't know much about what those animals would do if released," Vandenbergh says. He points to fleet animals such as fish or insects that might compete with native populations or interbreed easily with wild relatives, introducing new genes.

The ability of transplanted organs to spread disease to humans is another concern. Pigs carry about 50 retroviruses in their genome, which could become pathogenic and contagious in a human host. The panel also worried that people might accidentally eat animals engineered to produce potentially harmful industrial compounds in their milk, or eat GM products containing a substance that could produce an allergic reaction.

Although the NRC committee wasn't asked to comment on regulatory policy, it did question FDA's authority to evaluate environmental effects. The Federal Food, Drug, and Cosmetic Act, which covers the "health of man or animal," is not an environmental law and might not cover impacts on ecosystems, the committee says. The panel worried that FDA does not have relevant in-house expertise and that its mandate might not hold up if outside groups challenge future regulations.

FDA declined to comment until the report was publicly released, which occurred as *Science* went to press. But Sanford Miller, a food safety expert at the Center for Food and Nutrition Policy in Alexandria, Virginia, predicts that the report "is going to get the FDA thinking much harder about what priorities they're going to put their money into—or realize they can't do everything."

—ERIK STOKSTAD

ELECTRONIC PUBLISHING

DOE Cites Competition In Killing PubSCIENCE

A free 3-year-old government information service and Web site for the physical sciences has lost out to commercial publishers in a battle for eyeballs. On 7 August the Department of Energy (DOE) announced that it was pulling the plug on PubSCIENCE, which provided access to bibliographic records in the physical sciences, because it overlapped with similar projects by private publishers.

DOE created PubSCIENCE in 1999 as part of an effort to disseminate and improve access to scientific information (*Science*, 6 August 1999, p. 811). But Walter Warnick, director of DOE's Office of Scientific and Technical Information, says it quickly became superfluous. "We think that portion of our mission is adequately filled by Infotrieve and Scirus," two privately run, free-to-search databases owned by the Los Angeles–based Infotrieve corporation and Amsterdam-based Elsevier Science.

PubSCIENCE was modeled after PubMED, the National Institutes of Health's popular online collection of journal citations and abstracts. Although publishers such as Elsevier Science, the American Physical Soci-

ScienceScope

Board Strikes Back A Senate proposal to give the National Science Board its own bank account and staff met stiff resistance last week from its target audience. Members of the presidentially appointed board, which oversees the National Science Foundation (NSF), questioned why legislators would want to change their status and agreed that "if it ain't broke, don't fix it."

"There must be something else at work here," University of Arkansas Chancellor John White opined during an impassioned discussion at the board's regular meeting. White later speculated that the language, in a 2003 spending bill drawn up last month (*Science*, 2 August, p. 753), might be a veiled attack on NSF Director Rita Colwell, which he feels is unwarranted. But a congressional staffer says that it is simply intended to strengthen the board's capacity to oversee the growing agency. "There's no hidden political agenda," the aide says.

Board chair Warren Washington of the National Center for Atmospheric Research in Boulder, Colorado, says he is eager to explain the board's position to Congress and hopes to resolve the matter before final passage of the spending bill later this year.

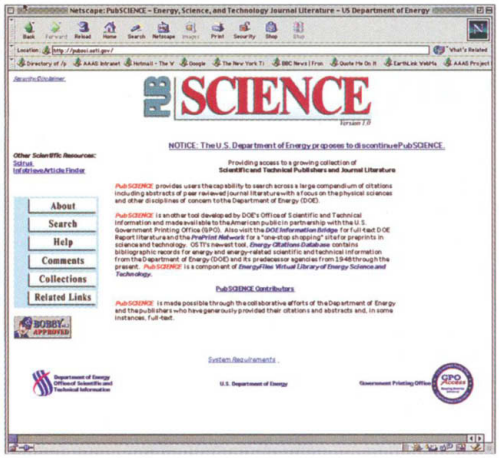
Security Risk? Does one of the world's largest collections of dead animals pose a threat to Washington, D.C.? Yes, argue congressional lawmakers, who recently added a provision to an emergency security spending bill that would give the Smithsonian Institution $2 million to plan a new facility in Suitland, Maryland, to relocate its vast collection of fish, sponges, corals, worms, and insects. Stored in almost 3 million liters of alcohol at the National Museum of Natural History on the capital's Mall, the collection amounts to a massive bomb, lawmakers say.

But President George W. Bush last week rejected the request, which was part of a larger $5.1 billion spending package that he vetoed, arguing that it included too many nonsecurity projects. To make his point, Bush singled out for derision the "new facility for storing the government's collection of bugs and worms."

The Smithsonian says it needs the extra space badly, if only to comply with the local fire code—and it might get the space anyway, because the Bush Administration itself requested the new storage pod in its 2003 budget. But museum scientists agree that the collection would be difficult to turn into a weapon because the alcohol, stored in jars and vials, is not highly combustible.

Contributors: Jocelyn Kaiser, Elizabeth Pennisi, Jeffrey Mervis, Martin Enserink

ety, and the American Association for the Advancement of Science (publisher of *Science*) cooperated with DOE, PubSCIENCE never gathered the momentum that its medical counterpart did. "I think one of the advantages PubMED always had over PubSCIENCE was that it was always very comprehensive in the disciplines that it covers," says Warnick. "PubSCIENCE was never as comprehensive."



Pulling the Pub. A federal Web site for the physical sciences is about to go dark.

The diversity of the physical sciences also made it hard for PubSCIENCE to win a toehold in a very competitive market. "With the whole dot-com industry, it's not so easy to establish something that attracts a lot of traffic," says Frank Vrancken Peeters, the managing director for Elsevier's ScienceDirect service, which includes Scirus.

Peeters speculates that the difference between physicists and medical researchers might have contributed to PubSCIENCE's demise. "The physical sciences are much more fragmented, more niche," he says. Monica Bradford, *Science*'s executive editor, says that PubSCIENCE "wasn't around long enough to establish itself." Although she says she's "personally disappointed" that it failed, "I don't think it will be missed."

—CHARLES SEIFE

SCIENTIFIC EXCHANGES

U.S. Visa Crackdown Disrupts Meetings

The U.S. State Department has begun performing extra security checks on visa applications from scientists and technologists from around the world, delaying visa decisions by weeks. The delays have led to the cancellation or rescheduling of several recent meetings by U.S. organizations. Most heavily affected so far have been scientists from the former Soviet Union (FSU) and China who are involved in research on weapons or other areas deemed sensitive to national security.

The visa crackdown is a late response to last fall's terrorist attacks, a State Department official told *Science*. Organizations first began noticing the delays in late spring, but it wasn't until last month that most U.S. nonproliferation experts learned that any foreign scientist could be subjected to such checks. The delays stem from more frequent interviews with visa applicants in U.S. embassies in their home countries as well as new measures, such as stiff vetting by the FBI and other intelligence agencies. "This is to ensure that the wrong people aren't slipping through the cracks," says a State Department official.

Ironically, the new security measures could have a negative impact, some say, by making it more difficult to interact with foreign scientists whose skills the U.S. government hopes to divert from weapons programs to civilian activities. "A big part of our engagement program is getting these scientists over here to the West" to work on nonproliferation programs, says the State Department official. To maintain regular contact with such researchers, he says, "we'll have to go to them more often than having them come to us."

The changes have dealt a sharp blow to plans by the U.S. Civilian Research and Development Foundation (CRDF) in Arlington, Virginia, to bring together select groups from the FSU and the United States to discuss how to protect civilian populations from terrorist acts. One recent workshop to discuss detection of toxins and pathogens using bioluminescent alarm signals was pushed back from the beginning to the end of August after five FSU scientists failed to obtain U.S. visas. With no resolution in sight and despite the fact that "State and Embassy Moscow are doing everything they can to help," says CRDF senior vice president Charles T. Owens, "we may have to resort to holding the symposium by video link."

No entry. Some weapons scientists are having a hard time obtaining visas to visit the United States.

So far, the consequences have been relatively minor: canceled plane tickets, lost hotel reservation fees, and the like. But some observers fear that could change for the worse if the proposed U.S. Department of Homeland Security assumes responsibility for screening visa applicants. "We don't expect an upsurge in denials," says the State Department official, but visa processing time could be lengthened from weeks to months.

Routine scientific exchanges appear to be less affected by the additional scrutiny. The U.S. National Science Foundation (NSF), for example, reports that none of the collaborations involving foreign scientists that it supports appears to have been affected. However, one NSF official notes that the Chinese Embassy has cited changes in visa processing practices as a reason for delays in the movement of Chinese scholars to the United States. A Department of Energy (DOE) official says that the agency was told a few weeks ago that the State Department's consular division is "tightening up" further on Chinese scientists—"although restrictions were already pretty tight," he says.

For CRDF, the first headache came in early July, when two key Russian scientists failed to obtain visas in time for a workshop on portable ion-trap mass spectrometers for the detection of chemical and biological warfare agents. "This workshop gave us an initial clue that there was a problem," says CRDF president Gerson Sher. In the weeks since, five more of 11 planned antiterrorism workshops, including meetings on anthrax assays and detection of explosives in baggage, have been disrupted—at a "not inconsequent" cost of $35,000 to CRDF, says Owens. DOE's National Nuclear Security Administration has had to postpone several meetings, too. "We just have to plan earlier," says Barry Gale, director of DOE's Office of International Science and Technology Cooperation.

Visa policies are likely to be discussed next month at a seminar in Washington, D.C., for science attachés from around the world, sponsored by the American Association for the Advancement of Science (publisher of *Science*). Although attendees hope to hear a clarification of the Bush Administration's policy from a White House official, no one is predicting a return to a time when obtaining a visa for a foreign scientist was routine.

—RICHARD STONE

CREDIT: (BOTTOM) REUTERS NEWMEDIA INC./CORBIS