

deemed a potential security risk.

"The academy doesn't want to provide any information that will help terrorists," says William Colglazier, the academy's executive officer, who adds that the sensitive material was removed after government officials expressed concern about a draft of the report. "The report was commissioned before 9-11, but 9-11 has changed the government's thinking on a lot of things," says Colglazier. The academy's self-censorship is the latest example



**Chicken big.** Terrorist attacks could force culling of millions of animals, at great cost to agricultural industries.

of a dilemma many scientific publishers face in balancing security concerns with the need for open communication.

The study, titled *Countering Agricultural Bioterrorism*, concludes that the United States is not adequately prepared to prevent or deal with attacks on agriculture. The federal government, the panel recommends, should develop a comprehensive plan for detecting and rapidly stanching outbreaks of diseases such as foot and mouth. "The potential for economic harm is enormous," says panel member David Franz of the Southern Research Institute in Birmingham, Alabama, a former head of the U.S. Army Medical Research Institute of Infectious Diseases.

USDA asked the academy early last year to examine how the nation might respond to "potential threats ... from a selected set of biological agents ... under different scenarios." But 15 months later, when a draft of the report was delivered, USDA officials had second thoughts about what they had ordered. "Their general concern was about whether the information on vulnerabilities could be exploited by terrorists," Colglazier explains. The Department of Homeland Security expressed similar concerns, he adds, and "both agencies suggested removing some material." USDA officials declined comment, although a spokesperson told *The*

*New York Times* last week that the agency did not request the rescissions.

None of the material is officially classified, Colglazier emphasizes, adding that NAS would not have removed the material if government officials had not objected to it. Colglazier says the academy's top officers removed eight case studies from one of the report's five chapters and put the information into an appendix. "Our intent is to give the appendix to the Administration and to Congress," he says. Everybody else, he adds, including other scientists and members of the general public, will have to settle for the edited version, which has been posted on the Web ([www.nap.edu](http://www.nap.edu)).

Franz wrote one of the excised studies, which describes how the country might respond to intentional releases of bovine spongiform encephalopathy, a deadly disease thought to be caused by infectious proteins. "We're actually pretty capable of dealing with that one," says Franz, thanks to a ban on the use of most mammalian protein in cattle feed and a surveillance program. The agent is also a lot less contagious than the virus that causes foot-and-mouth disease, he notes.

Although Franz believes that the final report retains the underlying messages from the case studies, another panelist, entomologist Marjorie Hoy of the University of Florida, Gainesville, isn't so sure. "I don't understand" why the academy would delete the case studies, she says, which drew upon publicly available information. "We were very sensitive, from the very beginning, not to provide a road map or a manual that a terrorist could follow. If you take out the case studies, that would leave a hole."

What remains are recommendations on how to prepare for an attack, including better training for farmers and other agricultural workers on how to recognize and report an outbreak. Researchers should monitor emerging diseases in other countries, the report says, and laboratories should be networked like the public health system for rapid testing of large numbers of samples. Government agencies also need to develop a clear and coordinated response plan, possibly including vaccinating herds or spraying pesticides.

The agroterrorism report is not likely to be the last time the academy will have to decide whether to make public potentially sensitive information, Colglazier says: "There's the potential for more of this. It's a different world out there."

—JEFFREY MERVIS AND ERIK STOKSTAD

## ScienceScope

**High-Priority Trio** The cow jumped over the moon in a children's rhyme—and now it is jumping near the front of the line of organisms due to have their genomes sequenced. The National Human Genome Research Institute (NHGRI) last week announced that the cow, the dog, and a single-celled protozoan have joined 20 other "high priority" sequencing targets—including 15 species of fungi and the honey bee (*Science*, 5 October 2001, p. 82).

The three organisms were added to the pool after one of NHGRI's periodic polls of the scientific community. The cow was blessed thanks to its usefulness in understanding human endocrinology and reproductive health. The dog has long been used to study diseases such as cancer and epilepsy. And the ciliate *Oxytricha trifallax* contains single-gene chromosomes that could help reveal the elements needed for gene regulation.

Despite the boost, the three species probably won't be sequenced immediately, because NHGRI's three U.S. sequencing centers are already busy. But the push is on to expand the capacity of existing centers and launch new ones.

**Astropaleontology?** An Australian geologist is NASA's choice to take over its Astrobiology Institute. Bruce Runnegar, a 61-year-old professor at the University of California, Los Angeles (UCLA), will succeed the first director, Nobel laureate and biologist Baruch Blumberg, who said last year he was stepping down from the job.

The institute is a "virtual organization" based at Ames Research Center in Mountain View, California (*Science*, 29 May 1998, p. 1338). It pulls together NASA field centers, universities, and research organizations to study the origin, evolution, and distribution of life in the universe. Runnegar currently heads UCLA's astrobiology center under contract with NASA.

Researchers say Runnegar's broad credentials—he has been a Sloan fellow in molecular evolution and has authored dozens of papers on everything from mollusk paleontology to oxygen in Earth's ancient atmosphere—will give a boost to the young, interdisciplinary enterprise. Runnegar says he'll start work at the beginning of next year.





## FUSION RESEARCH

## Energy Panel Asks U.S. To Rejoin ITER

GAITHERSBURG, MARYLAND—U.S. fusion researchers are trying to reignite their field. A panel of scientists meeting here last week recommended that the United States rejoin negotiations to build the International Thermonuclear Experimental Reactor (ITER), a multibillion-dollar international project that the Americans abandoned in 1998. But they also argued that the country should initiate its own fusion experiment if the government lacks the budgetary will to return to the ITER fold. “The consensus is that we’re ready to build a machine and do the science,” says Stewart Prager of the University of Wisconsin, Madison, one of 17 members of the Department of Energy’s (DOE’s) Fusion Energy Sciences Advisory Committee (FESAC).

The consensus emerged at a July meeting of fusion scientists in Snowmass, Colorado (*Science*, 2 August, p. 751). Last month a group met in Austin, Texas, to concoct a strategy. As endorsed by FESAC, the strategy is two-pronged: Try to join ITER, and begin design work on a less expensive domestic experiment, the \$1.2 billion Fusion Ignition Research Experiment (FIRE). If DOE does not get a seat at the ITER table by mid-2004, the report recommends, the United States should proceed with the FIRE project instead. The FIRE alternative “shows the international partners that we’re serious about the discussion and that ITER is not the only game in town,” says Vincent Chan, a FESAC member who works at General Atomics in San Diego, California.

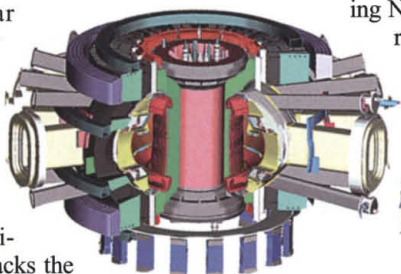
Full U.S. partnership in the ITER collaboration would cost an additional \$100 million a year, most likely for a decade or more. DOE has set aside \$1 million to estimate the costs of the project, which is currently pegged at \$5 billion-plus.

Ray Orbach, director of DOE’s Office of Science, is enthusiastic about the twin tracks, saying his office “is committed to implementing the work of Snowmass and the recommendations of the panel and the committee.” But \$100 million a year is likely to be a stretch. “I think the U.S. can afford \$50 million [per year],” says Anne Davies, associate director for fusion energy sciences.

Congress has left open the door to a U.S. return to ITER but has not signaled that it would cross the threshold. Language in energy bills going through both houses directs

DOE to develop a plan to build a magnetic fusion experiment but is silent on creating such a facility. “It’s hard for Congress to take the long view when there are so many immediate problems,” says Representative Zoe Lofgren (D-CA), a key congressional backer of fusion research.

Orbach acknowledges that “political as well as scientific issues play a key role” in any decision. But he hopes an upcoming National Research Council report on fusion power, a draft of which might be ready in early December, will help him make a case. “I would



Flame on? FIRE fusion project could win out if ITER fails.

like to give the president, by mid-December, the full scientific view of how to get from here to there,” Orbach says.

This week the ITER partners—Europe, Japan, Canada, and Russia—met in Toronto to discuss a timetable for selecting a site and to hear technical reports on Canada’s site. A final agreement is expected sometime in 2004.

—CHARLES SEIFE

## SPACE STATION

## NASA Plans Expansion, New Research Agenda

PASADENA, CALIFORNIA—The international space station might be going off its diet. In a sign that 18 months of turmoil is ending, NASA last week quietly laid out plans to expand the station beyond a stripped-down version that was the product of large cost overruns and management problems.

The new plan would increase the number of shuttle flights to the station, start design on a spacecraft that could return a larger crew, and make room down the line for additional pressurized space for experiments. Officials also proposed new research priorities, slashing funding for structural and evolutionary biology in favor of studies into radiation health and advanced life-support systems. Yet even as a new U.S. program takes shape, some international partners in the program are struggling with budget troubles that hinder their ability to participate.

Neither the expanded station nor the research plan will be official for many months, and both are certain to engender controversy. But the briefings to NASA’s advisory council meeting here at the Jet Propulsion Laboratory were concrete evidence that NASA Administrator Sean O’Keefe and his team are preparing to move beyond a truncated design—due for comple-

## ScienceScope

**Close Call for Boehlert** One of the science community’s favorite members of Congress has barely survived a primary election. House Science Committee chair Sherwood Boehlert, a moderate Republican from upstate New York, squeaked out a 52% to 48% win over a conservative challenger in a 10 September vote.

A staunch environmentalist and abortion-rights supporter, Boehlert is often at odds with Republican leaders and has drawn increasingly stiff challenges from his party’s conservative wing. Two years ago, a conservative challenger won 43% of the vote in the contest to choose the Republican nominee. This year, changes in the boundaries of Boehlert’s district helped David Walrath, a state legislator and medical director of a drug-treatment center, come within 1427 votes of a major upset.

“It was surprisingly close; I’m still shaking,” says one science-group lobbyist, noting that Boehlert has earned a reputation as an enthusiastic—but tough-minded—advocate for research spending. Boehlert is expected to easily win another 2-year term in the 5 November general election, as he should draw votes from Democrats and independent voters, who can’t participate in the Republican primary.

**Unwanted Advice?** The Bush Administration let two scientific advisory groups die in recent weeks, one on genetic testing standards and the other on the use of human subjects in research. Both dealt with hot topics; both advised the Department of Health and Human Services (HHS); and both included holdover members from the Clinton White House. But after a story in this week’s *Washington Post* suggested that the panels were killed in response to complaints from industry or conservative groups, HHS spokesperson William Pierce hastened to explain that the committees will be recreated “very soon” with new members and “broadened” mandates.

That explanation didn’t satisfy Representative Edward Markey (D-MA) and other Democrats on the House Energy and Commerce Committee. In a 17 September letter to HHS Secretary Tommy Thompson, the group wrote that it was “deeply disturbed” by these and other changes—such as a shakeup of an environmental health panel (*Science*, 30 August, p. 1456)—and demanded a total accounting of any changes since January 2001 to “scientific advisory groups, committees or task forces.” HHS’s response is due by 4 October.

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