minimize the risk, the team used a weakened anthrax strain, but for microbiologists who know the literature, Keim says, producing a virulent Cipro-resistant anthrax might be feasible. Keim's team is not going to add to that literature, at least for now. "We have a paper ready to go," says Keim, "but I think I'm going to sit on it."

Meanwhile, two papers published online by *Nature* this week record progress in battling *B. anthracis* on another front. Although antibiotics readily kill the bacteria, patients with inhalation anthrax often succumb to bacterial toxins circulating in their blood (*Science*, 19 October, p. 490). In one study, researchers at Harvard University and the University of Wisconsin, Madison, report finding a receptor that the toxin uses to enter macrophages, the cells it kills. A soluble version of the receptor added to macrophages grown in a test tube could bind the toxin and prevent its entry into the cells—thus offering hope of a drug that could "mop up" the toxin.

In the second paper, researchers from six institutions in the United Kingdom and the United States announce having solved the three-dimensional structure of a component of the toxin called the lethal factor. The structure may give researchers new leads to block its main effect: killing patients in the advanced stage of anthrax. **–MARTIN ENSERINK**

COUNTERTERRORISM

U.S. Science Agencies Begin to Lend a Hand

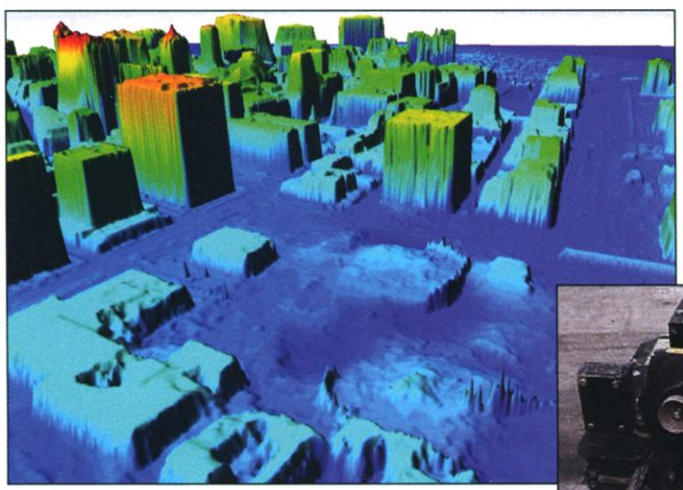
The U.S. government last week took the first steps toward developing a coordinated scientific effort to combat terrorism. Despite an official blackout on the event, *Science* has learned that White House science adviser Jack Marburger called together the Bush Administration's top scientists on 19 October to discuss how their research programs can contribute to the antiterrorism campaign. At the same time, the National Academy of Sciences (NAS) has begun its own effort to shape government research plans in the wake of 11 September and the continuing anthrax attacks.

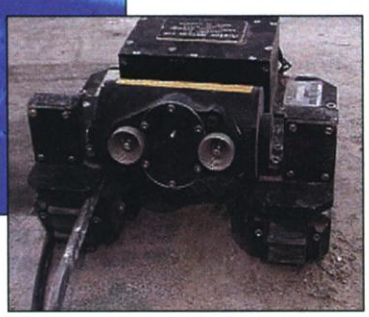
The White House meeting marked the first time that research managers from across the government gathered en masse to take stock and begin shaping a coordinated response. The federal mobilization has been hampered by the unofficial status of the government's top scientist: Marburger hadn't been confirmed by the full Senate at the time of the meeting, although lawmakers were expected to approve his appointment this week.

Many government science agencies did swing into action within hours of the assaults, but until now, there has been little coordination or long-term planning. The Department of Energy's (DOE's) national laboratories have loaned experts in biological and chemical weapons to intelligence and investigation agencies, for instance, and the National Science Foundation (NSF) has funded several shoebox-sized experimental robots that searched for survivors and remains in the wreckage of the World Trade Center in New York City.

The lengthy White House meeting attracted more than a dozen federal officials who oversee the nation's $90 billion R&D portfolio, according to several participants. It focused primarily on briefing Marburger and his staff at the Office of Science and Technology Policy (OSTP) on the strengths and weaknesses of relevant research programs. OSTP would not comment on the meeting, citing Marburger's status as a consultant, but an aide to one participant said that officials "laid out what they thought they could offer and where they might need some help."

Some agencies have already spent weeks combing their portfolios for projects germane to the nation's defense. At the DOE's National





CREDITS: (LEFT TO RIGHT) AP PHOTO/KENNETH LAMBERT; GEOSENSING SYSTEMS ENGINEERING/UNIVERSITY OF FLORIDA

Rapid response. Scientists used NSF quick grants to develop a three-dimensional laser map of damage at the World Trade Center site and deploy robots to search the wreckage.

ScienceScope

Research or Proliferation? Science and university groups are keeping a close eye on antiterrorism legislation that could hamper research involving biological and chemical toxins. Earlier this month, the American Society for Microbiology and the Association of American Universities, which represents 63 top research universities, successfully lobbied the Senate to exempt "bona fide research" from stiff criminal penalties for possession of potential bioweapons. A version of the bill passed by the House of Representatives, however, doesn't deal with bioweapons, and it's not clear whether such a provision will be included in the final bill, expected to be completed soon.

Meanwhile, science advocates are also tracking a proposal (HR 3016) by Representative Billy Tauzin (R–LA) to bar non-U.S. citizens who are not permanent residents from possessing potential bioweapons. They say the bill would prevent many foreign-born students and researchers from working in the field. They are also awaiting a separate set of bioterror prevention proposals from the Department of Health and Human Services, due next month.

Science Stimulus Some science lobbyists are asking Congress to spend money on new university lab equipment as part of a larger legislative effort to revive the economy. Science groups have proposed including up to $2 billion for such purchases in a $100 billion economic stimulus package that is whizzing through Congress.

A science tool-buying spree would pack a triple punch, says American Physical Society lobbyist Michael Lubell, one of the authors of the idea. It would give struggling computer and equipment makers an immediate cash infusion, help university researchers make discoveries that will produce future economic returns, and reduce a hefty backlog of equipment-funding requests. The National Science Foundation alone, he says, leaves $1 billion in equipment pleas on the table each year.

It's not clear if lawmakers will bite, however. Republican leaders have argued that the package should emphasize tax cuts, whereas Democrats favor spending on an array of public works projects.

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