unveiled a hastily written outline for the new $37 billion antiterrorism agency that made vague references to various government research and development (R&D) programs (*Science*, 14 June, p. 1944). Two weeks later, when White House officials delivered a more detailed legislative proposal to Congress, they had dropped controversial ideas such as stuffing the Department of Energy's Lawrence Livermore National Laboratory in California into the proposed department. And more changes are likely. "This is very much a work in progress," acknowledges White House science adviser John Marburger.

Both the White House plan—and an alternate blueprint put forward by Senator Joseph Lieberman (D–CT)—include plenty of provisions that make researchers nervous. Many biomedical scientists, for instance, oppose giving an agency with a strong focus on border security control over bioterror research, response, and regulatory programs that are now at the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC). "I'm skeptical that such an odd coupling will work," Tara O'Toole, head of the Johns Hopkins Center for Civilian Biodefense Strategies in Baltimore, Maryland, told the House Energy and Commerce Committee. "It is a very tall order to ask a single agency to develop national security strategy and … create a sophisticated R&D capability."

Others questioned how the new agency would manage research. Both Lieberman and the White House have presented plans that are "unworkable," science policy guru Lewis Branscomb of Harvard University told the Senate Government Affairs Committee. He was particularly skeptical of Lieberman's idea for a multiagency committee to dole out DHS science funding. "I have never seen an interagency committee in the federal government capable of administering anything," said the one-time head of the National Bureau of Standards.

Legislators seemed to relish such blunt talk. Lieberman said he was already thinking about reworking his bill's R&D provisions to accommodate SARPA—a Security Advanced Research Projects Agency modeled after the Pentagon's agile Defense Advanced Research Projects Agency. And Representative Sherwood Boehlert (R–NY), chair of the House Science Committee, said that critics have convinced him that the White House proposal "simply does not give R&D a high enough profile." Boehlert is especially keen for the agency's research portfolio to be directed by a single manager, an idea backed by a new report from a panel that Branscomb co-chaired (*Science*, 28 June, p. 2311).

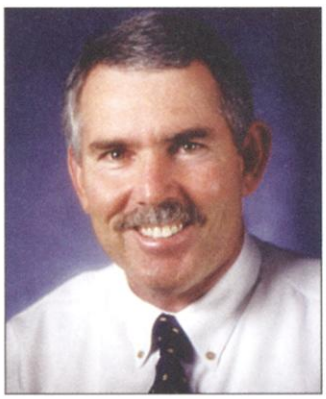
All these ideas will go into the congressional blender, which is expected to spit out a final plan before the end of the year.

–DAVID MALAKOFF

GENOMICS CENTERS

Disease Gene Research Heats Up in the Desert

A new genomics complex with big ambitions got a boost on 26 June when Arizona lured geneticist Jeffrey Trent, scientific director of the National Human Genome Research Institute (NHGRI), back home. Earlier this month, the Phoenix area landed a genomics center that will identify genes active in cancerous tissue. Now, Trent has announced that he will leave NHGRI to head a complementary, newly formed research institute aimed at turning such data into treatments.



Sunny future. Geneticist Jeffrey Trent and two research institutes are setting up shop in Phoenix.

The Translational Genomics Research Institute (TGRI) was formed to provide the research base needed to convince Trent, a senior science adviser of the nonprofit International Genomics Consortium (IGC), to locate the consortium in the Phoenix area. IGC's goal is to determine patterns of gene expression in cancer tissue and put that information in the public domain. Biomedical researchers could then use the information to identify specific cancer-causing genes and ultimately develop drug therapies targeting those genes.

IGC, now located in Scottsdale, Arizona, had been courted by cities with strong biomedical research institutions, including Atlanta and Houston. To get IGC to Arizona, the governor, the city of Phoenix, and private donors put together a start-up package of $92 million for TGRI and persuaded Trent to head it. Arizona had an advantage: Trent grew up in Phoenix, got his Ph.D. at the University of Arizona in Tucson, and once worked at UA's Arizona Cancer Center.

Trent says the new institute will be freestanding but have ties to the state's universities, much like the Fred Hutchinson Cancer Research Center in Seattle or the Salk Institute for Biological Studies in La Jolla, California. Although Trent is the only scientist

ScienceScope

Cloning Indecision President George W. Bush's advisory Council on Bioethics is expected to offer its first thoughts on human cloning later this month—but the outcome has been the focus of extensive behind-the-scenes wrangling this week. A majority of the 18-member group, which began meeting early this year (*Science*, 25 January, p. 601), appears to oppose the complete ban on "research cloning" advocated by Bush and the panel's leader, Leon Kass of the University of Chicago, an informal *Science* survey suggests. But a majority of the panel appeared headed for a controversial compromise: a recommendation to ban reproductive cloning and a 4-year moratorium on research involving cloned embryos, to allow for further public debate and for the government to enact regulations.

Some panel members, however, fear that the group's backing of a moratorium might be a ploy to stall the research altogether and does not reflect the sizable minority on the panel that supports research cloning. "A moratorium is a de facto ban," says one panelist. "If the headline is, 'Bush Committee Bans Cloning,' that's wrong," says another.

In the last-minute maneuvering, at least two panelists have switched positions since the last public meeting, and the issue is generating tension and uncertainty within the council. As *Science* went to press, one panel member said: "Things are shifting around even now."

Indian Ousters The government's leading advocate for reforming India's animal-care facilities, Maneka Gandhi, has lost her Cabinet post after a public feud with the health minister, who was also dropped. Ironically, the reshuffling comes on the eve of a new system to accredit animal facilities, a key element in Gandhi's campaign to reform the country's 600 animal houses.

Indian Prime Minister A. B. Vajpayee had privately scolded Gandhi, who chairs a government animal welfare committee, and health chief C. P. Thakur for fighting over who should operate the accreditation system. That job has been assigned to the Department of Science and Technology.

"Thakur was asked to resign for underperformance, and Gandhi for overperformance," says S. Chinny Krishna, vice chair of India's Animal Welfare Board, who applauded Gandhi's efforts. Although her firing is a "setback … the momentum has been built."

CREDITS: (TOP TO BOTTOM) ALPERN LEHMAN/TGRI; P. BAGLA

in 1998, boosted by new genetic engineering techniques (*Science*, 20 October 2000, p. 440). As they reported in the 23 May issue of *Nature*, Marcelo Jacobs-Lorena of Case Western Reserve University in Cleveland and his colleagues recently inserted an extra gene into *Anopheles stephensi*, a mosquito that transmits malaria in India, that made the insects resistant to mouse malaria. Others are tweaking the genes of *Aedes aegypti*, the mosquito that transmits dengue.

But the ultimate target is *Anopheles gambiae*, the main vector of the deadliest malaria parasite, *Plasmodium falciparum*, in Africa. Researchers hope to make resistance genes spread through natural mosquito populations by hitching them to a selfish piece of DNA called a transposon or to a strange bacterium called *Wolbachia* that sweeps through insect populations by manipulating its host's sex life. If this works, they will have created golden bugs that could save millions of lives—at least in theory.

Still a stretch. Making transgenic mosquitoes has become relatively easy—this larva carries the green fluorescent protein gene—but ecologists say this strategy is a long way from driving down malaria.

CREDIT: JOHN R. CLAYTON/CDC

At the meeting, ecologists came up with a discouraging list of hurdles that could easily sink the plan. For example, will the new mosquitoes be able to compete for partners with their natural counterparts? (Past studies have shown that spending a few generations in the lab diminishes their sexual attractiveness.) How long would it take for a new resistance gene to penetrate the population, and would it be 100% effective in mosquitoes that carry it? (If not, the transgenic bug would barely make a dent in malaria incidence, suggests a model by Christophe Boëte and Jacob Koella of the Pierre and Marie Curie University in Paris.) In areas with multiple malaria vectors, would all the species need to be "treated"? And would *P. falciparum* develop resistance to the new genes, as it has to many drugs? Or could this be prevented if multiple antiparasite genes were used?

Studying many of these issues is problematic. Most researchers agreed that after cage experiments, some sort of pilot trial would be needed. But where? It must be a place from which mosquitoes can't escape. Saõ Tomé, one of a handful of islands that form a republic off the east coast of Africa, has been suggested, and one meeting participant floated the idea of creating artificial "oases" in the Sahara desert. Even more vexing are some of the ethical and regulatory issues. Although it's unclear who would set the rules, a field test would have to meet safety standards as strict as those for vaccine trials, said entomologist Yeya Touré, malaria coordinator at WHO's Special Programme for Research and Training in Tropical Diseases—or perhaps even stricter, as it would expose people who had not agreed to participate.

Feeling "a bit like a ham sandwich on Passover," the only molecular biologist at the workshop, David O'Brochta of the University of Maryland, College Park, admitted that he and his colleagues have given little thought to these issues. But that reflects a lack of expertise rather than concern, he said, urging ecologists to join the work.

In the past, said meeting host Willem Takken of Wageningen University, granting agencies have not been impressed by old-style fieldwork such as counting mosquitoes or studying their feeding behavior. But at least NIAID is now convinced that the ecologists' input is urgently needed, says Kate Aultman, program manager for vector biology. Some at the meeting said that they were uncomfortable allying themselves too closely with a research program that faces such major problems. But most still preferred joining it to trying to beat it—if only because the research might be valuable regardless of whether transgenic mosquitoes ever take wing.

–MARTIN ENSERINK

FISHERIES RESEARCH

Mixed Schools a Must for Fish?

Fish markets teem with neatly iced schools of similarly sized fish. The marked uniformity is often the result of two forces: customer demand for pan-sized portions and fishing regulations that limit harvests to older fish to preserve populations. But some biologists fear such selective culls could permanently alter the genetic makeup of wild fish stocks.

Now, two scientists have gone fishing in their laboratory to test that idea. And on page 94, they say they've netted data suggesting that fisheries managers should rethink their rules if they want to prevent

ScienceScope

Scientific Gold Mine? U.S. researchers are getting ready to dig even deeper into the possible uses of an underground science laboratory. The National Science Foundation (NSF) said last week that it will hold a 3-day workshop on subterranean science in September in Washington, D.C. And although the notice doesn't mention it by name, a controversial proposal to convert the shuttered Homestake Gold Mine in South Dakota into the world's deepest lab will be the invisible elephant in the room (*Science*, 15 February, p. 1213).

NSF is already mulling a nearly $300 million request from physicists to build the Homestake lab, which they say would be the perfect place to build giant detectors for studying neutrinos. But the project has become ensnarled in political, environmental, and cost concerns, and NSF reviewers have so far given little hint on how they view the bid.

Earlier this year, the White House asked the National Academy of Sciences to take a global look at proposed facilities for neutrino physics and underground science in general, with an eye toward avoiding duplication. Organizers say the conference, which they expect to be "75% about physics and astrophysics and 25% about other fields," including geoscience and the environmental sciences, will feed into the academy report. It is expected to shape attitudes toward the Homestake lab.

The report is due early next year. For meeting details, see www.physics.umd.edu/ness02.

Bailed Out After nearly a week in jail, two biology postdocs accused by the FBI of stealing commercial secrets from a Harvard lab (*Science*, 28 June, p. 2310) were released last week from a San Diego prison on $250,000 bail each.

Jiang Yu Zhu and his wife, Kayoko Kimbara, are expected to travel to Boston for an initial hearing on 17 July before a federal district court. In the meantime, they face an 8 p.m. curfew. Zhu, now at the University of California, San Diego, and Kimbara, now at Scripps Research Institute in La Jolla, California, could face 25 years in prison and $750,000 in fines if found guilty of conspiring to steal Harvard secrets and shipping Harvard property across state lines. A formal criminal indictment is likely to come later this month.

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