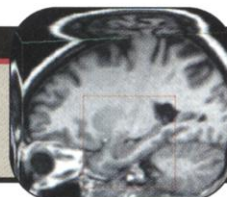


CERN's life-line for Russian physics



New era in plant genetics



Depression and neural growth

The technical plan relies heavily on the "whole genome shotgun" method pioneered by researchers working with Venter at The Institute for Genomic Research in Rockville, many of whom followed Venter when he became president of Celera. The entire mouse genome will be chopped into pieces and cloned into bacteria, which will be "fingerprinted" and distributed to labs for sequencing. The three-pass sequencing work will be carried out by robotic devices at Eric Lander's center at the Whitehead Institute for Biomedical Research in Cambridge, Massachusetts; Robert Waterston's at the Washington University School of Medicine in St. Louis; and Allan Bradley's group at the Sanger Centre in Hinxton, U.K. All three groups have pledged to transmit raw data directly from their robots to public databases on the Internet, with no strings attached.

Even though Celera has already produced rough drafts of the genomes of three other lab mice, Bult says the new data will not be redundant. Researchers fortunate enough to have access to all four genomes, she notes, may use them to do sophisticated "dissection of complex genetic traits." By crossbreeding strains, tracking the movement of DNA, and observing the physiological effects in offspring, she suggests, researchers may learn how genes interact to regulate complex phenomena such as obesity. But at the moment, Bult can't see all those valuable mouse genomes because the Jackson lab hasn't paid for access to Celera's data.

—ELIOT MARSHALL

## THE RACE FOR THE PRESIDENCY

### Gore, Bush Aides in Friendly Tussle

There are substantive differences between George W. Bush and Al Gore Jr. on science and technology policy, standard-bearers for the two candidates said during a Washington debate last week. But the genial 90-minute joust revealed a lot of similarities, too. (See page 262 for the candidates' own responses to questions posed by *Science*.)

The candidates agree on many issues, acknowledged Gore aide David Beier and Bush adviser Robert Walker. Both would double funding for basic medi-

cal research, boost spending on other civilian and military science, make the R&D tax credit permanent, and spend billions of dollars to improve elementary and secondary school math and science education.

But Walker—who heads The Wexler Group, a Washington lobbying firm, and is a former chair of the House Science Committee—pointed to industrial research as one area of disagreement. He said Bush dislikes using taxpayer funds for industry to develop emerging technologies. That concept is a centerpiece of the Clinton Administration's Advanced Technology Program (ATP), a \$200-million-a-year effort that has been a perennial target for congressional Republicans. The government could better encourage companies to fund risky applied science, Walker argued, by changing tax and liability laws that currently create "too many barriers to innovation" and "an atmosphere where new ideas are threatened by lawsuits." Beier, a former executive with the biotech company Genentech Inc. who is now Gore's domestic policy adviser, defended ATP and other programs that support precompetitive industrial research. He said that Walker was drawing "an artificial distinction between [investments in] basic and applied research that sometimes doesn't serve policy-makers very well."

Beier, citing Gore's "abiding interest" in science and technology and his stints on the House and Senate committees that oversee science policy, argued that Gore's science and technology credentials are "probably better than any presidential candidate's in American history." Walker conceded that point, but suggested that his experience hasn't been put to good use. As vice president, he charged, Gore has "built government stovepipes" that have limited the flexibility and effectiveness of R&D spending programs.

The candidates' tax and education spending initiatives also came under scrutiny. Walker touted a \$1 billion Bush initiative to link state universities to local school efforts to improve math and science teaching, and he also defended the Texas governor's tax proposal against charges that it would benefit only wealthier Americans. "These are the people who are investing" in technologies, such as the Internet, that

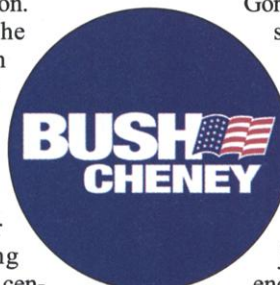
are "fundamental to the new economy's growth," he said. Beier shot back that Bush "seemed to be fixated on protecting the tax status" of a small number of people. The

Gore campaign also used the occasion to unveil a committee of scientists, led by Nobel laureates Harold Varmus and Murray Gell-Mann, who are backing the candidate.

Given the chance to comment, one audience member took a humorous jab at Bush's repeated reference in the first televised debate to the "fuzzy math" of his opponent. When, asked one researcher, will the candidates "stop disparaging a very productive branch of science?"

The forum was sponsored by a coalition of science policy groups and hosted by the American Association for the Advancement of Science (which publishes *Science*).

—DAVID MALAKOFF

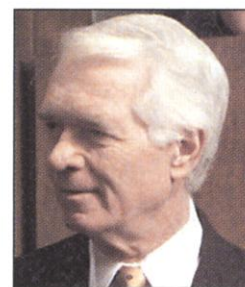


## ANIMAL WELFARE

### Research Groups Win Delay in Rules

Biomedical research groups have won a last-minute reprieve from threatened regulations covering laboratory mice, rats, and birds. In a surprise reversal, Congress voted this week to bar the U.S. Department of Agriculture (USDA) from following through on a pact with animal-rights groups to draft rules for the animals (*Science*, 6 October, p. 23). The provision, introduced by Senator Thad Cochran (R-MS), was attached to an agriculture spending bill.

Animal-welfare advocates were stunned by the development, which became public just as they were celebrating a federal judge's decision to approve the pact after a long-running legal battle. "We are appalled at the lengths to which some biomedical trade associations will go to avoid their legal and moral responsibilities to the welfare of lab animals," said John McArdle, head of the Alternatives



**To the rescue.** Senator Cochran helps researchers.



CREDIT: J. MARQUETTE/AP PHOTO

Research & Development Foundation (ARDF), which had sued USDA.

Under the settlement, USDA agreed to reverse the agency's 30-year-old policy of exempting rodents and birds—which constitute 95% of research animals—from regulation under the Animal Welfare Act. The settlement was opposed by a coalition of research groups that included the National Association of Biomedical Research (NABR), the Association of American Medical Colleges, the Federation of American Societies for Experimental Biology, and the Association of American Universities.

To achieve its ends, the coalition enlisted Wallace Conerly, dean of the University of Mississippi Medical Center in Jackson. He telephoned Cochran, the third-ranking Republican on the Senate Agriculture Committee. Cochran responded by adding language to the agriculture appropriations bill that prevents USDA from drafting the new animal-care regulations during the 2001 fiscal year, which began on 1 October. The bill faces a threatened veto by President Bill Clinton on other issues, but Cochran's provision is expected to survive.

The ban "is great news," says Conerly, who worries that new rules would "cost [his university] millions of dollars." NABR's Barbara Rich says the delay will allow policy-makers to "take full consideration of the [settlement's] consequences for research." The issue, she predicts, "isn't going away."

—DAVID MALAKOFF

## RESEARCH MISCONDUCT

### Texas Scientist Admits Falsifying Results

A University of Texas (UT) immunologist has admitted to federal officials that he falsified research results over at least a 5-year period, leaving a trail of retracted papers and disgruntled collaborators. The scientist, who resigned and has been barred from receiving federal research grants, was found to have repeatedly duped colleagues by spiking test tubes with doses of a radioactive marker that produced positive results, according to detailed reports by UT and federal investigators.

Last month, the federal Office of Research Integrity (ORI) announced that William A. Simmons of UT Southwestern Medical Center in Dallas had signed a statement admitting misconduct and accepted several penalties, including a 5-year ban on receiving federal research grants.

ORI investigates misconduct allegations involving studies funded by the National Institutes of Health (NIH). Officials at the medical center, where Simmons worked under medical professor Joel Taurog, said in a statement that they are considering "further disciplinary action." This could include financial penalties and the revocation of his 1996 Ph.D.

Simmons could not be reached for comment, and Taurog declined to speak to *Science*. The following account is based on ORI and university investigation records obtained through the Freedom of Information Act.

Simmons enrolled as a graduate student at UT Southwestern in 1989. After receiving his degree in 1996, he won a postdoctoral position in Taurog's lab, which uses transgenic rats and mice to study the role of the gene *HLA-B27* in a group of autoimmune diseases, including a painful spinal arthritis known as ankylosing spondylitis. Over the next 2 years, Simmons published a series of papers, including a 1997 *Immunity* paper (see box) suggesting that an undiscovered gene—dubbed *Cim2*—influences *HLA-B27*'s behavior. Efforts to find *Cim2*, however, stalled after Simmons left Taurog's lab in 1998 for a corporate job. The postdoc who replaced Simmons "had almost no success in reproducing any of" Simmons's work, according to ORI records, and Simmons was rehired as an untenured faculty member in April 1999 "to help straighten out" the research.

Within days Simmons's work came under suspicion, however, when an unidentified co-worker observed him pipetting fluid into vials used to test the activity of certain immune system cells. The procedure was not consistent with the experimental protocol. Returning later to investigate, the co-worker discovered a wash bottle and testing vials full of radioactive chromium 51—a substance that should not have been present in the vials until days later in the experiment.

The experiments involved putting kill-

#### A New MHC Locus That Influences Class I Peptide Presentation

William A. Simmons,<sup>1</sup> Derry C. Roopman,<sup>2</sup> Scott G. Summerfield,<sup>1\*</sup> Richard C. Jones,<sup>1</sup> Begonia Galocha,<sup>1</sup> Gregory J. Christensen,<sup>1</sup> Shanna D. Maika,<sup>1</sup> Ming Zhou,<sup>1</sup> Simon J. Robert S. Bordoli,<sup>1</sup> Hilde L. Ploegh,<sup>1,2\*</sup> Chih A. Slaughter,<sup>1</sup> Kirsten Fischer-Lindt,<sup>1</sup> Robert E. Hammer,<sup>1</sup> and Joel D. Taurog<sup>1</sup>  
<sup>1</sup>Harold C. Simmons Arthritis Research Center  
<sup>2</sup>Department of Internal Medicine  
<sup>3</sup>Howard Hughes Medical Institute

#### Retraction

##### A New MHC Locus that Influences Class I Peptide Presentation

It is with deep regret that we report here that critical data in the paper by Simmons, D. C. Roopman, S. G. Summerfield, R. C. Jones, B. Galocha, G. J. Christensen, Maika, M. Zhou, S. J. Robert S. Bordoli, H. L. Ploegh, C. A. Slaughter, K. Fischer, R. E. Hammer, and J. D. Taurog [1997] *Immunity* 7, 641-651 cannot be reproduced.

**Taking it back.** Misconduct case leads to retraction of 1997 paper in the journal *Immunity*.

er T cells and radioactive target cells together in the vials, then assessing the activity of the killer cells by measuring the radioactivity released by the target cells. By adding predetermined quantities of the radioactive chemical to the vials, investiga-

## ScienceScope

**In the Zone** Earth science chiefs at the National Science Foundation will need to think harder about how to take advantage of new technologies and findings. That's the conclusion of a National Research Council panel that is urging a two-thirds boost in the program's \$100 million annual budget.

The committee's report ([www.nap.edu/books/030907133X/html](http://www.nap.edu/books/030907133X/html)), released last week, points to research on the "Critical Zone"—where water, air, rock, soil, and life come together—and in the emerging field of geobiology, among others, as worthy of investment. The panel suggests cooperative planetary efforts with NASA and natural laboratories, such as turning deep-drilling sites into long-term observatories.

The committee, chaired by geophysicist Thomas Jordan of the University of California, Los Angeles, says that increased spending must not ignore "the single most important mechanism" for keeping earth science strong—research by individuals and small groups of investigators. It also "strongly endorses" the proposed EarthScope (*Science*, 26 November 1999, p. 1655).

**A Thirst for Science** An apocalyptic advertisement last week in Slovenia's largest daily newspaper warns of the dire effects of federal budget cuts to research and rallies support for a national walkout. The ad, paid for with \$5 contributions by hundreds of scientists, warns that research budgets are so thin that some institutes may be forced to close. Per capita spending has fallen to \$60 per person, it declares—"enough for a dozen pizzas—without beer." The ad, which proclaims "the end of science," is part of a protest that was to culminate in a 2-hour walkout by researchers and professors on 13 October.

Slovenia, an ex-Yugoslav republic the size of New Jersey, is far from an economic basket case, and its science has been considered among the best funded in formerly communist European states. But the pedestal beneath Slovenian science is crumbling, say researchers. "The government has to act quickly, or this decline will be irreversible," complains Vito Turk, the biochemist who heads the country's biggest research center, the Jožef Stefan Institute. The ad and work stoppage are also aimed at candidates running for parliament on 15 October.

