

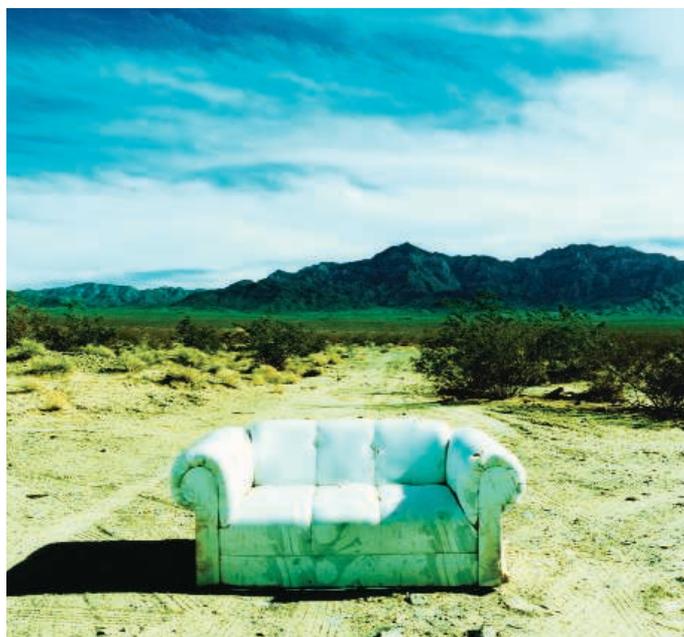
## ENVIRONMENTAL RESEARCH

# DuPont Settlement to Fund Test of Potential Toxics

The chemicals that make life easier by keeping food from sticking to cookware and blocking stains to carpets and couches also have a darker side: Some of their ingredients don't break down in nature. And the accumulation of these manufacturing aids, called perfluorocarboxylates, is potentially hazardous to humans and wildlife (*Science*, 10 December 2004, p. 1887).

Last month, DuPont, the largest manufacturer of perfluorocarboxylates, agreed to spend \$5 million to assess one aspect of the possible risk of exposure. It's part of a record \$16.5 million settlement reached last month with the Environmental Protection Agency (EPA), which had accused the company of breaking the law by not releasing health information about perfluorooctanoic acid (PFOA), a perfluorocarboxylate used to make some Teflon products. DuPont has denied any wrongdoing.

The research could potentially lead EPA to require DuPont and other manufacturers to reformulate some products, with a value exceeding \$1 billion. "Ultimately, these



research results could have a huge influence on regulation," says Scott Mabury of the University of Toronto, Canada.

While welcoming the research, which will involve nine representative DuPont products, some researchers are frustrated by EPA's ground rules. They are particularly upset that

**No rest.** Contract labs will test whether stain repellents and related compounds break down into a worrisome environmental contaminant.

the identity of the products to be tested will be kept secret, a decision they say could reduce confidence in the findings and hinder other research into the chemicals. "It really stifles investigation," says Timothy Kropp, a toxicologist with the Environmental Working Group in Washington, D.C. It will also make it harder for outsiders to evaluate and interpret EPA's conclusions, adds Richard Luthy of Stanford University in California.

The contract labs hired by DuPont will cook each product in a warm brew of aerobic microbes—conditions designed to maximize the chance that they will break down into PFOA or a dozen inter-

mediate metabolites that might suggest that PFOA is a possible outcome. If breakdown products do turn up, says Charles Auer, director of EPA's Office of Pollution Prevention and Toxics, the agency will consider more tests to figure out the rate and extent of the process. (DuPont says that PFOA comes from acci- ▶

## SPACE SCIENCE

## NASA Terminates Gore's Eye on Earth

NASA has quietly terminated a controversial Earth-gazing science mission left over from the Clinton Administration. Although the satellite is largely complete, space agency officials say they don't have the money to launch and operate the spacecraft, which is designed to provide data on solar storms and the effect on climate of changes in Earth's albedo.

The Deep Space Climate Observatory began life in March 1998 when then-Vice President Al Gore proposed a mission, called Triana, to beam back real-time images of the whole Earth. Ridiculed by Republicans as Goresat, the project was resuscitated after a 2000 report from the National Research Council of the National Academies said it could do important research. But last month, NASA science chief Mary Cleave wrote scientists that "the context of competing priorities and the state of the budget for the foreseeable future precludes continuation of the project."

Originally slated for a space shuttle launch in 2001, the project was delayed and then put on hold following the loss of the Columbia orbiter in February 2003. The following year,

however, senior NASA managers informed scientists that the mission remained a priority.

The observatory was designed to hover at a point where the gravity of the moon and Earth cancel each other out, providing a stable platform for observing the sunlit side of Earth on a continuous basis. "We could get an incredible set of data" of the impact of albedo

on climate, says Robert Charlson, a climate scientist at the University of Washington, Seattle. The satellite would also have monitored solar storms that pose a hazard to sensitive telecommunications systems.

Principal investigator Francisco Valero of the University of California, San Diego, says that NASA is ignoring the possibility that the National Oceanic and Atmospheric Administration—which last year requested a study on possible NOAA participation due out next month—could pick up as much as half the cost. "If there is cost-sharing, then the cost could be moderate for each agency," Valero argues, noting that final preparation, launch, and operation of the mission could run between \$60 million and \$120 million. But NASA's tight budget and the mission's political roots may be too much for scientists to overcome.



**Grounded.** The Deep Space Climate Observatory may never be launched.

—ANDREW LAWLER

CREDITS (TOP TO BOTTOM): PATRIK GIARDINO/CORBIS; COURTESY OF F. VALERO/UNIVERSITY OF CALIFORNIA, SAN DIEGO

dental release during manufacturing, not from the products themselves, and that it has already reduced these emissions by 98% in the U.S.)

The initial observations should increase basic knowledge of these chemicals, says environmental chemist Pim de Voogt of the University of Amsterdam, the Netherlands.

## ENVIRONMENTAL REGULATION

# New Particulate Rules Are Anything But Fine, Say Scientists

Cutting in half the maximum amount of fine particles that people should breathe over 24 hours sounds impressive. But critics of this revision to air pollution standards, proposed last month by the U.S. Environmental Protection Agency (EPA), say the new daily threshold will only marginally improve public health. They say a truly dramatic reduction in mortality rates requires lower annual exposure levels, too. In fact, an outside panel that made such a recommendation is not happy with EPA's decision.

"What is the point of having a scientific advisory committee if you don't use their judgment?" wonders Jane Koenig of the University of Washington, Seattle. EPA Administrator Stephen Johnson didn't answer that question during a 20 December teleconference announcing the standards but said he had thought long and hard about the data. "I made my decision based upon the best available science," he explained. "And this choice requires judgment based upon an interpretation of the evidence."

Studies have shown that inhaling the small particles that make up soot—a widespread byproduct of combustion—harms health, although the mechanisms are not all clear (*Science*, 25 March 2005, p. 1858). Bad air days can trigger asthma attacks, for example, and even kill people suffering from lung or heart disease. Even chronic exposure to lower levels of soot leads to health problems and premature death. In 1997, EPA first regulated fine particles measuring 2.5 micrometers (PM 2.5) or less. As part of a settlement in a suit brought by the American Lung Association, EPA was required to propose revised PM 2.5 rules by the end of 2005.

The new standards would lower the maximum allowable 24-hour exposure for PM 2.5 from 65 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to 35  $\mu\text{g}/\text{m}^3$ . That's within the range recommended by the agency's Clean Air Scientific Advisory Committee (CASAC) but still on the high side. EPA ignored other suggestions, most notably declining to reduce the average annual PM 2.5 standard of 15  $\mu\text{g}/\text{m}^3$  to 13 or 14.

Such a reduction could make a big difference in public health, scientists have found. EPA models for nine major U.S. cities predict that the

EPA plans to review the research protocols with an independent scientific panel, Auer says, and make some of the data public after the 3-year studies are completed. EPA will accept nominations for the panel after naming someone to administer the process.

—ERIK STOKSTAD

tightest daily and annual standards recommended by CASAC would cut the roughly 4700 deaths due each year to PM 2.5 in those cities by 48%. In contrast, death rates would drop by 22% under the agency's proposal to tighten only the daily standard. EPA didn't make a nationwide tally of lives saved under any of the proposals, but epidemiologist Joel Schwartz of



**Road kill.** EPA's proposed regulation of harmful fine particles from buses and other diesel and coal emitting sources doesn't go far enough for some.

Harvard School of Public Health in Boston, using an annual standard of 14  $\mu\text{g}/\text{m}^3$ , came up with 9000 or more. Having a looser standard is "completely unjustified by the science," he says.

EPA plans three public hearings on its proposal and will accept public comments until early April. "This isn't over," vows CASAC chair Rogene Henderson of the Lovelace Respiratory Research Institute in Albuquerque, New Mexico, who says the committee will reiterate its case. The final revisions are due out in September.

—ERIK STOKSTAD

## Women Get Yen

Female Japanese scientists have something to look forward to in this year's science budget. The plan includes \$6 million in new funds for programs at universities and research institutions to help women advance in science and return to work after maternity leave. Reiko Kuroda, a University of Tokyo biochemist, calls the grants "a good start" in tackling the longstanding problem of Japanese women juggling families and science careers.

Elsewhere in the budget, Japanese scientists are feeling relatively lucky, with science-related spending for the fiscal year beginning in April cut 0.1% from current levels to \$31.1 billion. Overall government spending will be cut 3%. The budget is pretty good "considering the financial situation," says Kuroda, a member of Japan's advisory Council for Science and Technology Policy. The budget will likely get parliament approval this month.

—DENNIS NORMILE

## Congress Joins Paper Chase

Lawmakers are expected this year to consider whether the National Institutes of Health (NIH) should require researchers to send their accepted manuscripts to a free full-text archive.

The voluntary policy, in effect since May, is meant to make freely available the results of NIH-funded studies and guide NIH management. But most NIH grantees aren't cooperating, and proposed legislation could force them to. An NIH advisory panel recently recommended that NIH make submission mandatory and post papers 6 months after publication in journals. The current guideline is 12 months. Many nonprofit publishers prefer that NIH links to the published paper online and warn that a shorter delay could doom journals and bankrupt some scientific societies.

—JOCELYN KAISER

## New Indian Centers on Tap

**HYDERABAD**—India will create 50 new centers for life science and biotechnology research this year that will hire more than 500 scientists over the next 5 years. Buoyed by an economic uptick, the government will also create 1000 positions at the facilities specifically for young researchers. Due to budget restraints, India has not recruited new scientists for government in recent years. Science and Technology department secretary Valangiman Subramanian Ramamurthy, a nuclear scientist, called the new initiative "music for my ears."

—PALLAVA BAGLA