RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Court Protects Peer Anonymity

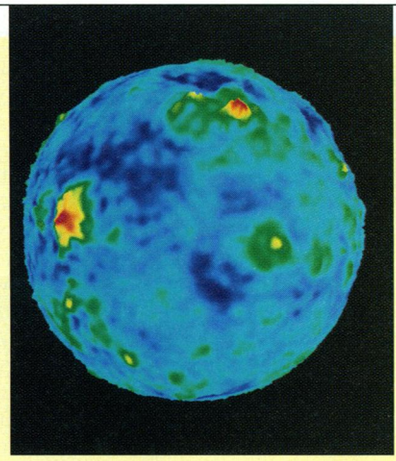
Closed-door meetings always arouse curiosity among those on the outside—especially if the talk on the inside is about whether those outside will get money. Engineer Wanda Henke, who has had several grant applications rejected by peer review, has taken her curiosity to court, only to find another door closed in her face.

Earlier this year, Henke and her husband, owners of a small engineering firm, demanded to know who had reviewed the losing proposals they had submitted to the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST). Both agencies refused to name the reviewers, so the Henkes sued (*Science*, 11 February, p. 747).

Now, in what could be precedent-setting support for the anonymity of peer review, NSF has won the first round of litigation. In August, Judge Thomas Flannery of the U.S. District Court of the District of Columbia rejected the Henkes' argument that the Privacy Act entitled them to learn who had reviewed their proposal. The 1974 law gives citizens the right to see any records about themselves held by an agency that maintains "a system of records ... from which information is retrieved by the name of the individual." But the judge ruled that NSF was protected by a section of the law that exempts data collected for contract awards.

Both NSF and NIST had rejected the Henkes' request for funds to refine a system for testing soil stability. Although NSF refused to name the reviewers, it did turn over the text of the reviews and a list of 12 names from which the reviewers were drawn. That wasn't enough for Henke, who wants the authors' names because she suspects some may have had a conflict of interest. She wants to use the evidence—if any—in a future funding appeal.

But her next appeal will be in court. "We were disappointed with Judge Flannery's decision," Henke says, "but we have always known this case would be appealed" no matter who won. The appeal will be heard by a panel of three district court judges. NIST lawyers meanwhile are warming up for their turn in Flannery's court, which may come within a few weeks.



JPL/NASA

Magellan's view of Venus. One of the latest renditions of Magellan's data shows the close correlation of Venusian gravity with its topography, a relation rarely seen on Earth. High-altitude spots have higher gravity *(highest is red)*. Topography is exaggerated by a factor of 100.

A Fiery End At Venus

The Magellan spacecraft is no more. After 5 1/2 years spent providing unprecedented data on Venus, its worn-out solar panels did it in, weakening its radio signal beyond detectability on 12 October. Out of control, it plunged into the Venusian atmosphere within a few days and burned up.

The coup de grâce could just as easily have come from its rapidly vanishing budget or dwindling supply of thruster fuel. Magellan was worn out and fated for imminent budgetary termination, prompting its controllers to send it on a suicide mission to gather a few last bits of data.

The planetary probe lived as spectacularly as it died. During its mission, it accomplished what several previous U.S. and Soviet crafts had failed to do: return radar images of Venus' cloud-shrouded surface, maps of gravity variations induced by internal geologic structures, and topographic maps, all on a global scale and at high enough resolution to reveal the workings of Earth's nearest relative (see picture).

Last week's "termination experiment" was intended to probe Venus' atmosphere. The drag of its thin upper reaches on passing spacecraft is difficult to duplicate in a wind tunnel. Understanding these effects, however, will enable a craft in a similar situation, such as an orbit around Mars, to enter that orbit with a minimum of expensive fuel. Magellan's last plunge should help engineers plan the next Mars mission, proving that self-sacrifice has its rewards.

Silver Threads, Thin Bones

Early this year, Australian researchers reported in the 24 January issue of *Nature* that a single gene—for a vitamin D receptor—is one of the main determinants of bone mass and is therefore implicated in osteoporosis. Now, a clinical study at a hospital in Bangor, Maine, has turned up another marker for bone thinning, or osteopenia: prematurely gray hair.

Some years ago, as endocrinologist Clifford Rosen at Bangor's St. Joseph Hospital and his colleagues report in last month's *Journal of Clinical Endocrinology and Metabolism*, "we began to notice a high prevalence of osteopenia in men and women who were prematurely gray." So in 1990, they started asking all the clients at the hospital's metabolic bone clinic when they had started turning gray. They ultimately picked 36 patients with osteopenia, none of whom had thinning bones for other reasons, such as endocrine problems or smoking, and compared them to 27 normal controls.

Their suspicions were confirmed: Of the group with thinning bones, half had prematurely gray hair. Only five of the non-osteopenic group had early graying—which meant that the premature grayers were 4.5 times more likely than others to have osteopenia. What's more, there was more likely to be a family history of osteoporosis (as well as gray hair) among people whose hair started graying very early, in their teens and 20s.

The study, says Rosen, is the first to suggest graying hair as a marker for osteoporosis. The nature of the connection is unclear, although he speculates that vitamin D could be the link. Certain genetic disorders caused by faulty vitamin D receptors involve loss of pigmentation, and the vitamin is also linked to bone mass through its role in facilitating calcium absorption. Indeed, he notes, dark-skinned racial groups tend to have denser bones than those of Caucasians.

Jordan Tobin, a gerontologist at the National Institute on Aging, says the study strongly suggests that gray hair "is a marker [for osteopenia] that we haven't thought of before." Now that it's been brought to scientists' attention, of course, they will start tugging on it to see where it leads.

Beefing Up HIV Antibodies

Two recent studies suggest that transfusions of plasma from people with high blood levels of anti-HIV antibodies—but no symptoms of AIDS—could help patients who have already progressed to AIDS. But no one knows why.

In theory, this "passive immune therapy" confers immunity to a disease by supplying a patient with someone else's antibodies. The technique was tried unsuccessfully on patients with AIDS at the Bronx Veterans Adminis-

tration Medical Center, New York, in 1991 by a team led by infectious-disease specialist Jeffrey Jacobson. But those patients were already very sick. Scientists say the new data suggest that the technique might indeed help slow the progress of AIDS in patients who retain a minimum degree of immune function.

In one study, reported in the 1 October issue of *Blood*, immunologist Joshua Levy and colleagues at HemaCare Corp. in California gave differing monthly doses of plasma pooled from HIV-positive donors to 42 AIDS patients over the course of a year. A control group of 30 got injections of serum albumin. Only one of the 21 patients on full-dose plasma died during the trial, compared with three of 21 on the half dose and six of the 30 controls. The second study, led by transfusionist Jean-Jacques Lefrère of Saint Antoine Hospital in Paris, involved 82 patients with advanced AIDS. Half were given plasma from HIV-positive individuals every 2 weeks for a year; the other half received seronegative plasma. During that year 66% of the control group but only 39% of the treated group developed new AIDS-related illnesses.

Both research teams, who presented their findings earlier this month at a London meeting on Passive Immune Therapy in AIDS, say that further trials are needed. Levy says his results did not quite attain statistical significance, and Lefrère cautions that this "is not yet a therapy," but "more of a quality-of-life effect." And why the transfusions seem to work is unclear. "You might think the [anti-HIV] antibodies are important, but that has not been proved," says viroimmunologist Frank Miedema of the Red Cross Blood Transfusion Service in Amsterdam, the Netherlands. Nevertheless, says virologist Martin Çranage of the Centre for Applied Microbiology and Research in Salisbury, U.K., "the studies are tantalizing. ... It looks like there are real effects."

Crème de la Crème

Stanford University ranks among the top 10 producers of highly cited papers in 17 of 21 scientific fields, according to the citation mavens at the Institute for Scientific Information (ISI). The institute collected data on more than 100 U.S. research universities and compared each university's citations-per-paper average to the world average in each field to come up with what ISI calls "relative impact." This month, ISI published rankings for nine areas in biology. The highest relative impact of all was achieved by the Massachusetts Institute of Technology in the area of molecular biology and genetics, where the citation rate was 246% of the world average citation rate. Rankings in the remaining 12 fields, covering the physical sciences and some social sciences, will be published in next month's *Science Watch*.

HIGHEST IMPACT U.S. UNIVERSITIES, 1981–93

(ranked by number of mentions in Top 10 lists for 21 fields)

Rank	Institution	# of Mentions
1	Stanford Univ.	17
2	Harvard Univ.	13
3	Yale Univ.	13
4	Mass. Inst. of Tech.	12
5	Calif. Inst. of Tech.	9
6	UC Berkeley	9
7	Univ. of Chicago	8
8	Cornell Univ.	8
9	Princeton Univ.	6
10	Univ. of Washington	6

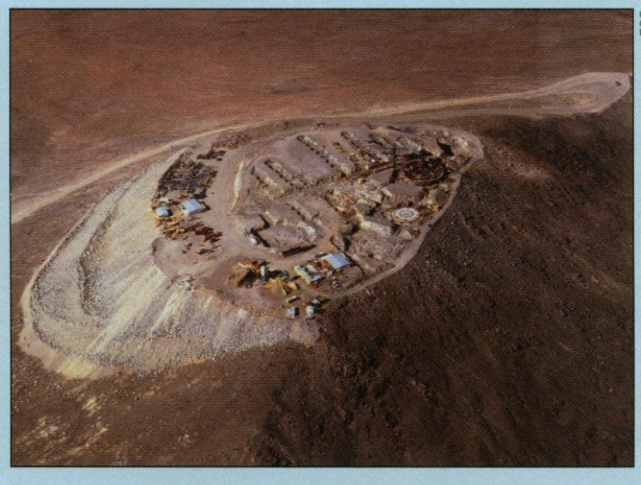
Ig Nobels Back Again

To the notes of Tchaikovsky's *Nutcracker Suite*, three Nobel Laureates twirled around a Boston stage on 6 October, kicking up their heels with five silver-clad women in an "Interpretive Dance of the Electrons." The evening also featured the first-ever Elemental Fashion Show, in which runway models paraded clothes based on some of the year's hottest elements in the periodic table, and a "Win a Date With a Nobel Laureate" raffle, in which the trophy was geneticist Richard Roberts, who shared last year's prize in physiology or medicine.

Those were just some of highlights of the fourth annual Ig Nobel Prize Ceremony, the spoof of the Nobel Prizes co-sponsored by the Massachusetts Institute of Technology Museum and the newly formed journal *Annals of Improbable Research* (which spun off from the *Journal of Irreproducible Results*). In addition to Roberts, who works at New England Biolabs, and a host of other Boston-area scientists, two Nobel Prize–winning chemists, Dudley Herschbach (1986) and William Lipscomb (1976), helped hand out the awards.

Among the 10 winners was the Japanese Meteorological Agency, which took home the Physics Ig Nobel for funding a 7-year, still-inconclusive investigation of the country's ancient folklore that catfish wriggling their tails cause Japan's earthquakes. The mathematics prize went to the Southern Baptist Church of Alabama for their county-by-county estimate of the number of Alabamans who will go to hell if they don't repent.

The honor in biology went to a group of military doctors for their study, "The Constipated Serviceman: Prevalence Among Deployed U.S. Troops," which found that soldiers in the field were dramatically more constipated than those at home. And the peace prize went to John Hagelin of Maharishi University in Fairfield, Iowa, the university created by the founder of transcendental meditation, for concluding that 4000 trained meditators caused an 18% decrease in violent crime in Washington, D.C.



ESO

Building the Biggest Eye

Construction is proceeding apace on the European Southern Observatory's Very Large Telescope, the world's largest optical telescope, on a mountaintop in Chile. A ship is now making its way from Genoa on a 6-week journey to the port of Antofagasta in northern Chile with a cargo of 100 tons of steel, the first shipment of parts for the enclosure for the first of four interconnected telescopes (the base for number one is the circle at right; number two is below it). About 350 people are working day and night to get the enclosure ready to receive the first telescope, scheduled to arrive next May. Platform construction, telescope assembly, and installation of optics for the first telescope will take another 2 1/2 years. The third and fourth telescopes are as yet only holes.