RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Playing Hardball at USC

The University of Southern California (USC) has issued an angry statement calling a suit brought against the university on 14 November by 17 medical school professors "frivolous and irresponsible."

The suit, charging breach of contract, came more than 2 years after USC sent a new contract to members of the medical school's Basic Science faculty that would reduce salaries by 25% by basing annual pay on nine instead of 12 months' work. It also would link salaries to researchers' success at obtaining outside grant money. The new terms were issued after a 3-year pay freeze, according to the plaintiffs' Los Angeles lawyer, Jeffery W. Kramer.

Kramer says the university is trying to balance its budget "on the backs" of the Basic Science faculty, and, in doing so, is violating its own tenure guidelines. "Being tenured carries with it the idea that you need to pay these people enough money," says Kramer. If the university carries through with its plan, "then tenure at USC has no meaning."

The plaintiffs, who make up about half the tenured Basic Science faculty at the USC School of Medicine, want their old contracts restored. Failing that, they are seeking damages to cover past and future salary losses.

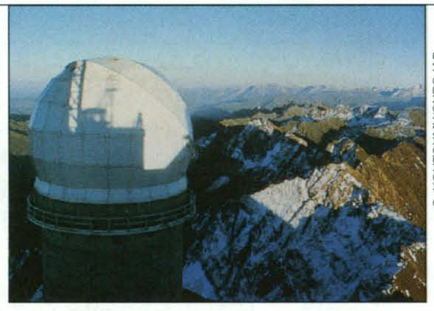
But in a 19 November response, the university made it clear it doesn't plan to back off. According to USC Provost Lloyd Armstrong, the medical school is running a deficit and has to be "restructured." But the plaintiffs are taking the position that "the university has no right to require them to do their fair share in meeting the challenges," he charges in the statement. "We think it is irresponsible for this tiny fraction of our 1075 medical faculty to expect us to bleed [other parts of the university] just to maintain the status quo in the medical school."

Armstrong further says that the university has "the right to tie salaries to performance," and that the 9-month work year is routine for faculty at other USC schools and elsewhere.

New Life for Pyrenees Observatory

One of the oldest high-altitude astronomical observatories in the world, the Observatoire du Pic du Midi, perched on a 2872-meter-high peak in the French Pyrenees, is undergoing a facelift.

The 118-year-old observatory, which can be reached only by cable car, is costly to run because of its inaccessibility and the harsh weather conditions on the peak. For 10 years, the observatory, which includes a 2-meter telescope and several solar instruments, has been threatened by closure. Now, however, the Université Paul Sabatier in Toulouse, which runs the observatory, hopes to save it by turning it into a combination scientific and tourist site. They hope that, eventually, the visiting public will pay half the facility's operating costs of $2.4 million a year.



S. KOUTCHMY/CNRS-IAP

Sightseeing stop. Observatory at Pic du Midi.

The $24-million construction project, the centerpiece of which is a much larger cable-car system to carry 600 people an hour, started 2 months ago and is expected to be completed by the end of 1998. "It is a major project here in the Pyrenees region," says astronomer Gérard Coupinot of the university, who heads the refurbishing of the astronomers' work space.

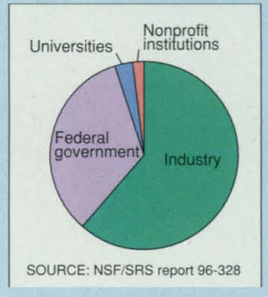
The observatory "will not be a museum," says Coupinot. The public will be allowed to roam most of the 5000-square-meter site. Astronomers will actively bring their work to tourists—for example, showing them photographs taken by the telescopes the previous night. Plans also include sinking about $3 million into the observatory itself. A new 8-meter dome will be built for the solar instruments, and quarters for the approximately 20 astronomers and technicians working at the observatory will be renovated. Facilities for geophysical and atmospheric probes and even high-altitude medicine (mountain accidents are becoming more frequent, says Coupinot) are also in the works.

Finally, the restructuring will involve measures to protect instruments from the vibrations, dust, and heat caused by the 200,000 visitors that are expected yearly.

Federal Wedge of U.S. R&D Pie Shrinks

This year, the government's share of the United States' overall R&D budget will be the lowest on record, according to the latest report on R&D trends from the National Science Foundation (NSF). The federal share of total R&D spending—which hovered around 50% during the 1970s—has dropped steadily for the past decade. But in 1996, the trend was accelerated by a projected 5.6% jump in industrial spending and a 1% drop in federal funding, putting the federal contribution at only a third of the nation's $184 billion R&D investment. Some $9 billion is expected to be spent this year by universities and nonprofit institutions.

Is this a positive trend? "It's hard to say what the appropriate fraction is," says Charles Larsen, executive director of the Industrial Research Institute, which represents 265 U.S. high-tech companies. He notes that Japan "has done pretty well" with only 20% of its R&D government-funded. The more important question, says John Alic, a technology analyst at Johns Hopkins University, is how the government chooses to invest its R&D dollars: "Without a clear national science and technology policy ... it's hard to say what the balance should be."



SOURCE: NSF/SRS report 96-328

Bad Karma for Gamma Seekers

For astrophysicists probing the mystery of high-energy blasts from space, known as gamma-ray bursts, the failure of the Russian Mars '96 launch on 17 November was more than a disappointment. It was the third disaster in 2 weeks.

A gamma-ray detector the size of a Walkman, which cost an estimated $750,000, went down with the Russian craft. It was meant to serve as the third point in a triad of sensors orbiting Earth, the sun, and Mars that would have made it possible to "triangulate," or pinpoint the location of, gamma-ray bursters 100 times more precisely than is currently possible, says Kevin Hurley, a University of California, Berkeley, physicist who led the team developing the device. No one knows what causes gamma-ray bursts, which last from seconds to minutes, occur about once a day, and can come from anywhere in the sky. Researchers

(continued on page 1473)

(continued from page 1471)

need precise coordinates to train powerful telescopes on bursts for signs of faint light emissions or radio waves that might represent the signature of whatever is causing the rays. Otherwise, they must keep using wide-field telescopes that "don't get down to these really faint magnitudes we think the sources are probably hiding at," says Hurley.

For burster-seekers, the Mars probe mishap is the latest in a string of failures. Scientists had turned to the Russians because a detector aboard the U.S. Mars Observer mission was lost in 1993 when the spacecraft vanished after reaching orbit. On 4 November, a $15 million NASA-funded satellite dedicated to gamma-ray burster research, as well as an Argentine satellite with burster-related equipment, was destroyed when the launch went awry.

NASA plans to put a burst detector aboard a Mars probe scheduled for a 2001 launch that could act as the third point in the sensor triad. But Thomas Cline, a pioneer burster researcher at NASA's Goddard Space Flight Center in Maryland, frets that, by then, the cash-strapped agency might have pulled the plug on gamma-ray sensors aboard the Compton Gamma-Ray Observatory now circling Earth, or those on the Ulysses sun probe. The loss of either would make a Martian outpost useless.

Fight Colds With Sociability

In any given office or household, cold viruses tend to hop around, skipping some people while infecting others. A study of 276 adults has now bolstered the idea that those who are most stressed are also most likely to get sick.

But it's not just any kind of stress, says Sheldon Cohen, a psychologist at Carnegie Mellon University in Pittsburgh. It's "persistent interpersonal conflicts" that put people at risk for catching colds, he reported at the Third International Congress of the International Society for Neuroimmunomodulation, held this month in Bethesda, Maryland. Furthermore, "people who are more socially integrated are at considerably less risk," said Cohen.

The findings stem from an ongoing study by Cohen in Pittsburgh, which follows up on his earlier work in Britain looking at the impact of psychological factors and lifestyles on health. In that study, "people with higher stress levels [were] more likely to develop colds," Cohen says.

His team has now gone a step further by evaluating the types of stress that affected health. As in the British study, they exposed individuals to a cold virus, then kept them isolated for 5 days to see who got sick. They also interviewed subjects about the stresses they'd experienced over the past year. "It turns out that it's only enduring social conflicts that puts people at risk," Cohen reports. For example, a person involved in a bad marriage or supervised by a mean boss was more likely to catch cold than someone who merely had an isolated marital blowup or a tough day at the office. A dearth of social connections also appears to take a toll. People with few types of social contacts, including work, family, or clubs, were four times as likely to get sick as those with six or more types of social contacts.

"The data are very solid," comments John Sheridan, an immunologist from Ohio State University Health Sciences Center in Columbus. And, he says, they are in line with epidemiologic research showing that people with strong social networks live longer.

Jurassic Squid

Eleven fossilized squid, complete with soft-tissue detail, were unearthed in one harried day earlier this month as British scientists raced to beat the flooding of a gravel pit in Ashton Keynes, Wiltshire, England. The 4- to 12-centimeter-long squid are "remarkably similar to their modern descendants," says paleontologist Neville Hollingworth of the U.K.'s Natural Environment Research Council, the dig leader. The soft tissue has become mineralized and is preserved as calcium phosphate crystals, which under the microscope show the tiny details of muscular structure. Some specimens are complete with ink sacs still showing their black color.

N.T.J. HOLLINGWORTH

Rare specimen. Squid Belemnotheutis (posterior is at upper left) had full ink sac (arrow).

The fossils date from the mid-Jurassic, 165 million years ago, when Britain and northern Europe were under water. The gravel pit exposes a seam of black, fossil-rich "Oxford clay" unique to England, which is filled with hard clumps of fossilized marine creatures. "Because squids don't have an external shell, it's rare to find good specimens preserved," says invertebrate paleontologist Neil Landman of the American Natural History Museum in New York City. Hollingworth speculates that the reason these squid are well preserved is that when they died, they sank to a particularly deep part of the ocean where oxygen levels were low, so there were few scavengers to break up carcasses.

The worked-out gravel pit had been under excavation for some weeks and was due to be reclaimed to grow crops. But when heavy rains started filling it with water, the scientists had to call in reinforcements and dig furiously while water pumps delayed the deluge. "We rushed around trying to get representative samples of all the fauna," says Hollingworth, including over 100 ammonites and two fish resembling modern herring. Anything else of interest is now lost under 4.5 meters of water.

Time for a War on STDs

It's time for a national campaign against sexually transmitted diseases (STDs), according to a report, "The Hidden Epidemic," released last week by the Institute of Medicine. More than 12 million people in the United States, one-fourth of them teenagers, are infected with STDs such as chlamydia, genital herpes, and long-term sequelae such as pelvic inflammatory disease each year. The situation is "a national embarrassment," says David Celentano of the Johns Hopkins University School of Hygiene and Public Health. Some of the facts:

- The United States has the highest rate of STDs of any developed country.
- Direct costs of STDS, not including AIDS, are $10 billion annually.
- Women and infants bear a disproportionate burden of complications from STDs, which include infertility and various types of cancers.
- Close to 22% of people over the age of 15 harbor the herpes virus.
- Teens are at ever-increasing risk: By the 12th grade, 70% have had sexual intercourse—double the rate reported in the early 1970s—and close to 40% of them have had four or more partners.

STDs are "hidden" for a number of reasons, says the report by a committee headed by internist William T. Butler of the Baylor College of Medicine in Houston. They include unwillingness of parents and teachers to talk about sex, physicians' ignorance, and the fact that many disorders show no symptoms in the early stages, especially in females.

The report puts special emphasis on the need for health providers to track and treat partners of people who present themselves with STDs. Butler says this recommendation is aimed in particular at easily curable bacterial infections such as gonorrhea, syphilis, and chlamydia, which otherwise will continue to cycle through the population.

Committee member Celentano says AIDS is playing a big part in bringing STDs out of the closet: "Probably the number one risk [factor] for HIV is a STD."

To order the $45 report, call 1-800-624-6242.