

Briefings

edited by CONSTANCE HOLDEN

New Stanford Head

University of Chicago provost Gerhard Casper has been selected to replace Donald Kennedy as the next president of Stanford University. Casper,



Gerhard Casper

54, is a scholar of constitutional and comparative law who immigrated from West Germany in 1964 and began his U.S. career teaching political science at the University of California, Berkeley. He joined the Chicago faculty in 1966 and served as dean of the law school from 1979 until 1987. Stanford's Board of Trustees unanimously fixed on Casper from among 667 candidates as "the right person to lead Stanford into the next century."

Liver Transplants Good for Brains

A recent study by University of Pittsburgh researchers suggests that liver transplants for alcoholics can reverse some of the cognitive deficits that many professionals have assumed to be permanent.

Researchers already knew that both alcoholic and non-alcoholic liver disease create hepatic encephalopathy—cognitive deficits created by the buildup of toxins in the blood. But the prevailing assumption in the alcoholism treatment community has been that most of the damage to cognitive func-

tion is the result of what alcohol does to the brain.

That assumption has now been challenged by research on a group of alcoholics with liver transplants at the University of Pittsburgh's Western Psychiatric Institute and Clinic. A team of researchers followed up on 13 patients—who have to be sober at least 6 months to qualify for transplants—who had been given a battery of neuropsychological tests as part of their pretransplant evaluation, and compared them to age- and sex- matched controls. A year after they received new livers, all but two of the alcoholics showed "significant improvement" on tests covering psychomotor, visual, and perceptual abilities. The one capacity that did not improve was memory.

Pittsburgh psychologist Ralph Tarter, who co-authored the study with Amelia Arria, says, "I quite frankly didn't expect the magnitude of recovery" shown in the study, in which most of the measured cognitive functions had returned to "basically normal." Tarter speculates that the main exception, relating to short-term memory, might reflect the nonreversible effects of alcohol on the hippocampus—a brain structure involved in memory formation.

Tarter says the research, published in the December *Alcoholism: Clinical and Experimental Review*, demonstrates the need for "more aggressive management" of liver disease in alcoholics as a way of avoiding "chronic lowgrade encephalopathy." He also argues that the results support the use of liver transplantation for recovering alcoholics, who are the largest candidate population for the procedure.

A Voice for Bio-Engineering

Scientists have the National Academy of Sciences (NAS), engineers the National Academy of Engineering, and health policy types the Institute of Medicine. Now biomedical engineers have their own combination honor society/government advisory body. Last month, they established the American Institute of Medical and Biological Engineering (AIMBE) as an umbrella group for 40 organizations that span a range of specialties from genetically engineered drugs to artificial organs. Robert M. Nerem of the Georgia Institute of Technology is president of the new group.

According to Jerome S.

Schultz of the Center for Biotechnology and Bioengineering at the University of Pittsburgh, the main purpose of the group, which is headquartered in Washington, D.C., will be to supply advice to government agencies, much as the NAS does. And like most of the major engineering societies, the membership is made up of invited "fellows." But others will be able to get involved through AIMBE councils made up of representatives from professional societies and from industry.

First on AIMBE's agenda is the formulation of a response to the biomedical engineering aspects of the National Institutes of Health's "strategic plan." Schultz says it's too bad the new group wasn't in business a year ago—the debate over silicon breast implants is just the sort of thing to which AIMBE might lend its collective wisdom.

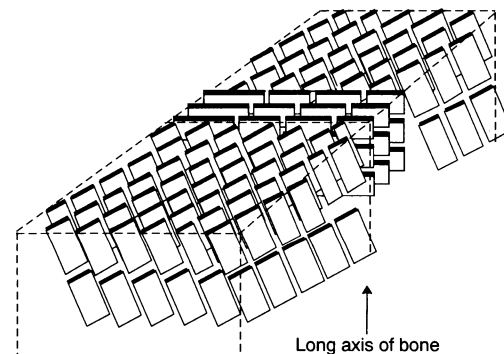
Red Ink at Harvard

Harvard Medical School, facing one of the worst budget deficits in its 213-year history, plans to eliminate some 40 administrative positions over the next 2 years.

By cutting the positions—8% of its administrative staff—the school hopes to save some \$2

Bone Like Plywood

Researchers at Israel's Weizmann Institute of Science say they have recently gained some clues as to why bone tissue is so tough and resilient. Looking at rat bones, structural biologists Stephen Weiner and Wolfie Traub and electron microscopist Talmon Arad found that the calcium phosphate crystals in the bones are aligned differently in alternate layers of protein fibers, much like a "rotated plywood" structure, as shown in diagram. This irregular structure halts the spread of cracks and fractures. The work also suggests that fractures are more likely to propagate along those bits of bone that have crystal plates all oriented in the same direction. According to University of Michigan biomechanics expert Steven Goldstein, "The Weizmann work offers an important insight into the structure-function relationships of bone tissue and helps to explain how mineral participates in providing mechanical integrity." The researchers, who reported their findings in a recent issue of the



Journal of the Federation of European Biochemical Societies, are now seeking to determine whether this type of structure is present in other animals' bones, and whether it is altered by disease such as osteoporosis. They also say that an understanding of a bone's molecular architecture may lead to the design of improved industrial materials.

million. But that still leaves a \$2.3 million shortfall. To make up the balance, the school expects to "enhance its revenue stream from foundations and industrial sources," says Suzanne Rauffenbart, associate dean for public affairs. She says research grants brought by new faculty members—now being recruited for a new research building to open next September—are also expected to help.

School financial officers are attributing the deficit to reductions in funds from the National Institutes of Health, as well as the fact that a new cap on indirect cost reimbursement reduced the expected revenue by \$2 million. The accountants warn that, in the absence of cost-cutting measures, the deficit for the coming academic year is projected to be even worse: It could reach \$6 million by 1993.

Top Science Jobs Lose Appeal

It's getting harder and harder to fill the top 78 presidentially appointed science policy-making jobs, according to a new National Academy of Sciences report. * Why? "The single most important factor" is the welter of restrictions on the kinds of work appointees can do after they get out of government, says the academy panel headed by Kenneth W. Dam, IBM executive and former deputy secretary of state.

Other disincentives to taking top science jobs are the low salaries, financial disclosure restrictions, the lack of prestige that attends public service these days, and "the perception of inappropriate ideological 'litmus tests.'"

The problem has grown worse during the Bush Administration, the report notes. Science and

*Science and Technology Leadership in American Government, by a panel of the Committee on Science, Engineering, and Public Policy of the National Academies of Science and Engineering and the National Institute of Medicine. Available for \$12.95 plus \$3 shipping from the National Academy Press, 2101 Constitution Ave., N.W., Washington, D.C. 20418.

Precolumbian Trees

Paleoclimatologists and ecologists now have a surprising new database of the climatic history of the arid Southwest: a stand of centuries-old Douglas-fir trees recently discovered in the lava fields of El Malpais National Monument in western New Mexico. One of these trees—called "1062" because dendrochronologists estimate that it sprouted 4 years before William the Conqueror invaded England—is the oldest accurately dated living member of that species.

Henri Grissino-Mayer of the University of Arizona says the stand of hoary trees was discovered a couple of years ago by a park ranger, who notified the university—which happens to be regarded as the leading dendrochronology center in the United States. Last summer, Grissino-Mayer and his colleague Rex Adams took four cores from the 9-meter-tall 1062, which they initially thought could be no more than 700 years old. Now they believe there may be even older ones living in the area, quite in defiance of conventional wisdom. "The world's oldest living trees, the bristlecone pines in California [which are as much as 4844 years old], all grow in very high, dry, and cold environments," says Grissino-Mayer. The lava fields, however, are lower—at an altitude of 2070 meters—and the climate warmer "than any place Douglas-firs ought to grow."

Grissino-Mayer says the lava fields may actually be an ideal environment for 1062 and its neighbors: Because nothing else will grow there, the site is protected both from fire and from competitors, and the miles of jagged lava keep human and animal predators away. He predicts that the find will spur



H. GRISSINO-MAYER

Old-timer. Recently discovered Douglas-fir stands 6 meters high, with a diameter of 80 centimeters. Birthdate: 1235 A.D.

dendrochronologists to start searching other lava flows—such as those in Oregon, Idaho, and California—for old trees, and will encourage ecologists to probe for the secrets of the trees' survival in what is for most plants a very hostile environment.

technology positions have been staying vacant an average of 9 months under Bush, compared with 6 months in the Reagan years. And recruiters sometimes have to go through a couple of dozen candidates before they find one who will say yes.

The report recommends that to make top science jobs more attractive, ethics rules should be made more clear and consistent, and restrictions on post-government employment should be narrowed. To insulate such jobs from politics, the report suggests establishing fixed terms of service and exempting some posts from the harrowing Senate confirmation process.

The problem of luring prime talent into important science posts is no joke, says the report. "If the situation continues, the government's ability to make key decisions in the face of rapid

scientific and technological change...will be very seriously affected."

Asbestos Regs to Be Re-examined

In 1989, after spending several years and millions of dollars gathering evidence linking asbestos to lung cancer and other diseases, Environmental Protection Agency (EPA) regulators thought they'd built an iron-clad case against the material. So they imposed a ban on virtually all new asbestos-containing products.

But recently, the open-and-shut case has opened again. Last October, in response to a petition from firms that make products containing asbestos, the fifth circuit federal appeals court in New Orleans struck down

the ban, citing EPA's failure to give industry a chance to rebut revised estimates on the health benefits of the ban, and its failure to evaluate the safety of asbestos substitutes such as polyvinyl chloride.

Last week, Linda Fisher, EPA assistant administrator for pesticides and toxic substances, revealed during a congressional hearing that EPA wanted to appeal the court ruling to the Supreme Court, but the Justice Department decided against it. So, EPA has instead begun a product-by-product review that might keep the door open for certain uses of asbestos. These include products such as asbestos cement used in water main pipes and asbestos brake pads designed for older cars. The ban on new use of asbestos insulation in buildings is unaffected by the ruling.