

Briefings

edited by IVAN AMATO

Hidden Costs of the Space Station

NASA officials surely must have thought that their latest redesign of the much-maligned space station (*Science*, 29 March, p. 1556) would at least mute its critics. No such luck. Last week, Controller General Charles Bowsher fired the latest salvo when he claimed in congressional testimony that NASA has omitted important construction and operation costs—for example, the cost of launching station components on the space shuttle and providing various pieces of scientific equipment—from its \$84-billion estimate of the station's 30-year cost. "When these costs are added together, what we actually have is at least a \$118-billion program," Bowsher said.

Bowsher also criticized the justifications offered for the space station, pointing out that while NASA identified eight

"functional uses" for the station in 1984, only one—a laboratory for microgravity and life sciences research—is left in the current design. Bowsher said even that justification is vulnerable, noting that many scientists believe microgravity and life sciences research are "incompatible" and are best not conducted on the same station.

NASA administrator Richard Truly replied that his agency has informed Congress of all relevant costs. "It's a question of accounting responsibilities, not a question of coming to Congress and hiding costs," he said. Truly also warned against further review of the station's design saying, "I believe the space station has had enough reviews.... Let's give it to the engineers and let them go build it."

Bowsher's testimony is merely the latest sign that the General Accounting Office (GAO) is unhappy with the way NASA is managing the space station. Earlier examples of those concerns abound: In March a GAO report on the station (issued before the redesign was completed) carried the title "Space

Station: NASA's Search for Design, Cost, and Schedule Stability Continues."

In spite of the GAO's skepticism, the House voted on 2 May to spend the full \$2 billion requested for the station next year.

A Billion Bucks for Materials

On 25 April, the halls and committee rooms of Congress were buzzing with just the kind of hearings, legislative sessions, and press conferences that can put smiles on the faces of materials scientists and engineers.

It started in the morning when the National Critical Technologies Panel—convened by the White House Office of Science and Technology Policy—released a report profiling 22 technologies deemed critical to the nation's economic and military security. Although the report states that these critical technologies do not appear in any rank order, advanced materials did get special visibility by topping the list. Unofficial word has it that the pole position for materials in

the report was no coincidence: It reflects the value that well-placed officials put on advanced materials and related technologies.

That same evening, both New Mexico senators—Democrat Jeff Bingaman and Republican Pete Domenici—introduced legislation that would provide \$475 million over the next 5 years to foster partnerships between federal laboratories, commercial industries, and academia with a focus on the synthesis and processing of materials. Called the Advanced Materials Synthesis, Processing and Commercialization Act of 1991, the legislation also earmarks an another \$474 million over the same period for university-based efforts. Don't bank on the money coming through soon, however. Congress is unlikely to vote on the bill before this fall, and the funds will still have to be approved by the appropriations committees.

Congressional Day

About 140 physicists took a break from technical sessions at the American Physical Society's (APS) spring meeting in Washington, D.C., to storm Capitol Hill. The herd of physicists, rounded up by APS, visited 169 congressional offices to extol the value of scientific research and give representatives their views on funding priorities, according to Robert Park, director of the Washington office of APS. Don't call it lobbying, though. "We don't like to use the L-word," Park says.

"Most of the scientists toed the party line," he says, meaning thumbs up on small and medium-sized projects, a possible thumbs up on the superconducting supercollider (provided it doesn't steal too much money from other projects) and a thumbs down for the multi-billion-dollar space station.

Park says this event marks the first time APS members have approached Congress en masse. To help guide the physicists, unfamiliar with the customs of Capitol Hill, APS drafted a list of tips. It warned the novices

A Big Gift From Big Oil

It pays to have well-grounded friends. In recognition of a long relationship with the University of Miami, Texaco has donated \$90 million worth of data to the university's Rosenstiel School of Marine and Atmospheric Science. "This is the first time we are aware of that an oil company has turned over its proprietary rights to such an extensive database to an academic institution," says Bruce Rosendahl, dean of the Rosenstiel School.

For university geologists, Texaco's gift of data on rift structure in coastal Brazil seems the data equivalent of a luxury liner. Academic geologists typically pride themselves on how economical their science can be. A few maps, a rock hammer, and a jeep might be enough to figure out how a sediment-filled basin formed, they'll tell you.

Oil companies take a more spendthrift approach. When Brazil gave Texaco the go-ahead to explore the Marajo Basin near the mouth of the Amazon River, the firm gave it the usual, very expensive, oil-industry treatment: 5 years of study that yielded massive amounts of data from seismic soundings, airborne magnetic surveys, and wells drilled to



A \$90-million data handoff.

depths of 5 kilometers and more.

Texaco's \$90-million oil search turned up dry, but the company's misfortune was the University of Miami's gain. The cost of gathering similar data would be prohibitive for even the best-funded academic earth scientists.

Will Texaco's largess start a trend of oil company-to-university data handoffs? Probably not. Oil companies are sure to go on probing dry basins, but special circumstances, such as the fact that Texaco did not have to share its data with other oil companies, may have greased the wheels of corporate generosity in this case.

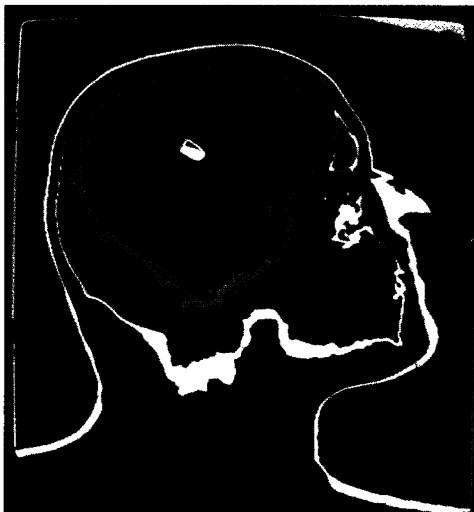
Ten Years for the Brain

Congress mandated it; the President's all for it; presidential science adviser D. Allan Bromley has taken the lead in coordinating it. The "Decade of the Brain" seems to have everything going for it—except, maybe, enough money.

On 24 April Bromley released the first "transfederal" report* on the Decade of the Brain, a government-wide effort to foster research relating to disorders of the brain and spinal cord that was kicked off last July with a presidential proclamation. The government says brain and behavioral disorders, including drug and alcohol abuse, afflict about 50 million Americans, with an annual cost to the nation of about \$305 billion.

Noting that "we have learned more about the brain and the nervous system during the past 10 years than throughout all of history," the report predicts "spectacular" ad-

*The report, "Maximizing Human Potential," is available from NINDS, Bldg. 31, Rm. 8A06, Bethesda, Md. 20892.



'MRI scan of a bullet in a brain.'

vances by the end of the century. The initiative targets nine major areas, among them communications disorders, learning and memory, development, and addiction.

The effort is being coordinated by a group under Bromley's office, the subcommittee on brain and behavioral disorders, headed by Roger Porter, deputy director of the National Institute of Neurological Disorders and Stroke (NINDS). It will involve 22 federal agencies. The first step, says Porter, has been to get the various agencies together and find out what they're doing. NASA, for example, has been studying how the brain reacts to gravity changes, while the Agriculture Department is concerned with nutritional effects.

The next step will be for Bromley's Office of Science and Technology Policy to put together an implementation plan. Money talk is still far down the road—after the plan is approved by Congress, says Porter. Whatever the final budget, NINDS and the National Institute of Mental Health will be the two biggest participants.

not to use jargon, beat around the bush, monopolize the discussion, ramble, whine, or ask for money for themselves.

Cuban AIDS Control

HIV infection rates in many Caribbean nations are among

the highest in the world (*Science*, 19 April, p. 372). Not so in Cuba, where the virus is virtually unknown. This commendable state of affairs stems in part from a measure that would be anathema in most of the rest of the world: quarantine of everyone who tests positive for HIV.

According to the latest fig-

ures provided by Cuban health officials to the Pan American Health Organization, Cuba's population of 11 million includes only 73 AIDS cases, giving an overall infection rate of less than .002% in most of the adult population. In this month's issue of the *American Journal of Public Health*, Eliseo J. Perez-

Stable, an internist from the University of California at San Francisco, says the credit must go to a combined program of mass screening and quarantine.

But Perez-Stable says that the practice of quarantine, in addition to raising issues of human rights, also may not prevent HIV from ultimately spreading more widely in Cuba. The virus might arrive with tourists, who are visiting Cuba in increasing numbers. And since the number of AIDS cases has been so low, Cubans may feel "personally invulnerable to the HIV epidemic" and forego precautions in potentially risky situations.

For now, Cuba's experience has shown that there are effective, albeit draconian, public health measures for controlling HIV.

Biotechnology Execs Earn More

Tired of the measly \$355,300 you get for running an ordinary high-tech firm, or the laughable \$284,800 you bring home for heading a manufacturing company? Try switching to the biotechnology industry. According to a survey of 26 "leading biotechnology firms," chief executives of top U.S. biotech companies earn an average of \$608,300 in total compensation, counting salary, bonus, and stock incentives. The survey was done by William M. Mercer, Inc., which describes itself as a "human resource management consulting firm."

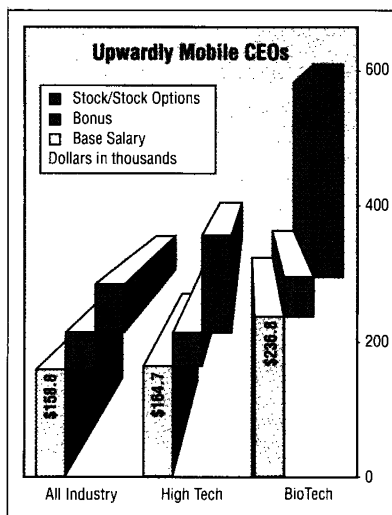
Survey questionnaires went to the top 100 biotech firms (as measured by number of employees). Even though responses came from only 26 of them, Joseph R. Rich, a principal of the William M. Mercer office in Boston specializing in high-technology industries, believes the respondents are rep-

resentative of the biotech industry in general.

To land the kind of salary more often seen by professional athletes than by people in business, look first to biotech firms in New England. CEO's of those firms rake in more than biotech head honchos anywhere else—\$1.1 million, though almost two-thirds of that sum is in the form of long-term stock incentives redeemable only after several years.

Why do CEOs of biotechnology companies get the extra yacht? Perhaps because no other industry relies as heavily on the impact of single individuals in developing products and getting them to market, Rich suggests. That would also explain why long-term stock

options make up so much of the compensation packages. The stocks serve as "golden handcuffs" that help companies hold on to individuals with a genius for the business of gene-splicing.



William M. Mercer Inc.

Correction

In an item on a "dog genome project" (*Science*, 19 April, p. 382), we failed to say that while Eric Lander of MIT and David Botstein of Stanford University developed methods for mapping the genes for complex traits, the test of the method on tomatoes was done (with Lander's collaboration) at Steven D. Tanksley's lab at Cornell University.