Briefings

edited by MARK H. CRAWFORD

R&D Lobby Spends NSF's '91 Budget

A coalition of 164 universities, companies, institutes, and associations is giving the Bush Administration and Congress some free advice on how a doubled budget for the National Science Foundation (NSF) should be spent.

In a new report, the Council on Research and Technology (CORETECH) says a top priority at NSF should be to triple outlays for engineering, math, and science education. Another is to underwrite a modernization program for university research facilities. At the same time the group calls for the agency to keep research support for individual investigators at 60 to 65% of the NSF budget.

How do you do all that? You double the agency budget from today's level of $2.15 billion to $4.3 billion in 1994. But you freeze—in real dollars—NSF's engineering and science R&D centers programs. Growth in the centers program, the coalition says, should be tied to increased local, state, and corporate support. But that is part of the proposal that may not play well with the director who was the creator and champion of the centers programs.

AIDS Tests Fail

A negative AIDS screening test doesn't mean you don't have the virus. That's the scary message that's been appearing in the AIDS literature recently, and another two new studies drive it home.

In the latest of the two, Steven M. Wolinsky of Northwestern University and colleagues at five other institutions evaluated 24 homosexual men who recently tested positive on both ELISA and Western blot assays. The men were selected from participants of the Multicenter AIDS Cohort Study and had regularly been donating blood at 6-month intervals. The news, now published in the *Annals of Internal Medicine*, is that in 20 men the team found evidence that viral genetic sequences had been incorporated into the blood cells long before antibodies had formed to the virus. In fact, in two of the men, the evidence suggested the presence of viral sequences as long as 42 months before their screening tests turned positive.

These results are similar to findings reported in a separate study directed by David T. Imagawa of the University of California at Los Angeles in the 1 June issue of *The New England Journal of Medicine*. Together, the two studies raise major questions: What are the implications of this potential "silent reservoir" of HIV carriers? Are the equations for modeling the spread of the AIDS epidemic correct?

The possibility of a "silent reservoir" of HIV carriers is disturbing. Also, there is the question of standards in blood donorship. It's clear that the American Red Cross was wise when it excluded anyone from donating blood who engages in high-risk behavior, regardless of what a screening test might reveal. Just how many HIV carriers are escaping detection in blood screening tests is uncertain. But the latest estimates of contracting AIDS from a transfusion put the risk at 1 in 40,000.

Global Change Encyclopedia on Disc

Soon anyone with a personal computer will have a chance to become a global change researcher. In 1992, the Space Agency Forum on the International Space Year plans to publish an encyclopedia on computer discs that will enable scientists to assemble animated and color-illustrated models of how coastlines, rainfall, vegetation, and the like interact—and

Study Puts Admiral Peary at North Pole

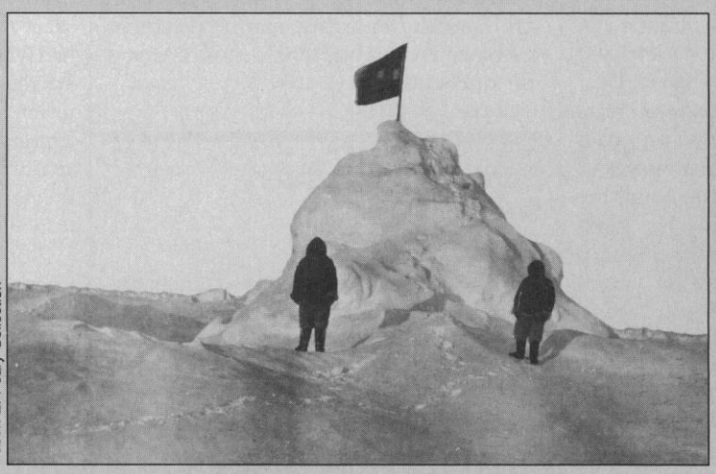
For 80 years a debate has raged over whether Admiral Robert E. Peary was telling the truth in 1909 when he claimed to have been the first person to set foot on the North Pole. And for the last couple of years, the Peary supporters—including the National Geographic Society (NGS) which was an original sponsor of his trip—have been on the defensive. Last week, they came out swinging with a report sponsored by the NGS purporting to prove once and for all that indeed Perry got to the Pole—well, within 15 miles of it.

The weighty new piece of evidence is a 250-page technical review, directed over the last year by Admiral Thomas D. Davies (retired), president of the Navigation Foundation. That organization, established in 1981, is dedicated to developing the art of navigation.

"Peary was not a fake or a fraud. . . . He did reach the North Pole," Davies declared at a press conference, held at—where else?—the National Geographic Society. This conclusion is based on a painstaking reanalysis of Peary's diaries, photographs, navigational records, and ocean depth measurements.

Davies and his three-man review team felt that the strongest new evidence came from a "photogrammetric" study of shadows in pictures of Peary and his group at the last stopping point before the Pole, called Camp Jesup. Using general assumptions about the angle of the camera and time of day, they reconstructed the position of the sun when Peary took the photo, concluding that its angle above the horizon was no more than 6.8 degrees. This placed Peary between 4 and 15 miles from the Pole. Ocean depth soundings Peary took through the ice also seem to correlate with modern U.S. Navy data.

As might be expected, though, this report won't ice the question. Among the skeptics, astronomer Charles Kowal of the Space Telescope Science Institute, discoverer of the asteroid Chiron, says the photogrammetric analysis used by Davies amounts to little more than "mumbo jumbo." He thinks it is "impossible" to use the photos to calculate Peary's location because the horizon is too obscure and the shadows too fuzzy to permit exact measurements. Dennis Rawlins of Baltimore, a critic of Davies, says the new study includes a margin of error so great that Peary could have missed the Pole by 60 miles. To Rawlins, that leaves Peary out in the cold.



Robert E. Peary Collection

Enlightening umbras? *The shadows in this photograph were analyzed to determine the angle of the sun and Peary's location.*

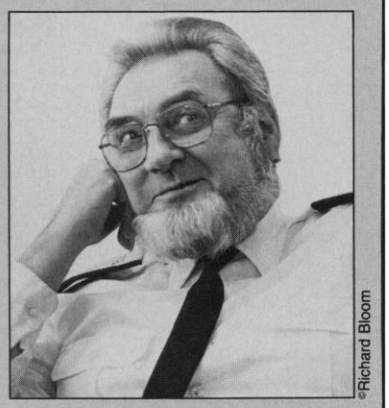
how they may be affected by changing conditions.

The ISY project, which is being coordinated by the Canadian Space Agency, is to include mountains of data collected from U.S., French, and Japanese satellites. Statistical packages on ecological zones, population dynamics, annual snowfall, cloud cover, and many other related issues will all be on disc.

How much will this cost? Renee Twombly, information director at the U.S. International Space Year Association, says the price will be very reasonable, based only on the cost of replicating the information on floppy discs or read-only optical discs. For more information call Twombly at 202-863-1734.

Academy Recognizes Koop

George Bush might not have appreciated him, but the National Academy of Science has awarded former Surgeon General C. Everett Koop its highest honor: the 1990 Public Welfare Medal. The academy is recognizing Koop for his leadership in trying to inform the public about AIDS and to warn citizens about the hazards of drug addiction and smoking. Koop served in his post from 1985 to 1 October of this year.



C. Everett Koop

Presently, Koop is chairing the National Safe Kids Campaign, an injury prevention program, and is writing his autobiography.

A Faster Parallel Computer for 1992

Not content with the Connection Machine, a computer that limps along on only 64,000 processors operating in parallel, Thinking Machines Corporation of Cambridge, Massachusetts, has vowed to build a successor with as many as 1 million parallel processors. The new machine, code-named MEGA, will be capable of 1 trillion computational operations per second (1 teraops).

"This is a level of computing none of us is used to," says Thinking Machine's chief scientist Danny Hillis. Hillis points out that 1 teraops is a rate about 1000 times that of the current generation of conventional, nonparallel supercomputers. "A teraops machine is to a supercomputer as a supercomputer is to a PC," he says.

The cost of building MEGA prototypes by 1992—some $24 million—will be split equally between Thinking Machines and the Defense Advanced Research Projects Agency (DARPA). When the full machine is commercialized in the mid-1990s, it should find applications in global climate modeling, quantum chromodynamics calculations, advanced drug design, semiconductor circuit design, and a wide variety of other computation-intensive fields.

The biggest challenge in building MEGA will be in fault tolerance, according to Hillis. With a million processors in operation "you can't assume that everything works at once." So MEGA will have to be built so components can be fixed while the system continues to run.

Canadian Kludge?

By next summer, if all goes well, Canada's National Research Council will have created a national computer communications network to serve the country's research community. Sounds great, but even before the system becomes operational most of the network's potential users are saying that the system will be too slow.

The $2-million network is designed to transmit information at 56,000 bits per second. Pat Comer, project coordinator for supercomputing services at the University of Calgary, isn't impressed. He says "CAnet" will be good for transferring files between existing regional networks, but not much else. "We need 1.5 million bits per second," he says.

Roger Taylor, director of computing at the NRC goes further, stating that the country really should build a fiber optic–based data superhighway like that proposed in the United States. This would run at 3 billion bits per second.

But even critics like Comer concede that the money isn't there for such ventures. And that explains the NRC's decision, which Taylor says still represents a chance "to get your feet wet." Moreover, the new system will reduce Canadian use of the National Science Foundation's U.S. network, he says.

Bromley OSTP Team at Full Strength?

D. Allan Bromley, director of the Office of Science and Technology Policy, is finally filling his two still vacant associate director posts.

He has tapped the chairman of the electrical engineering department at the University of California at Berkeley, Eugene Wong, to associate director for physical sciences. And he has chosen William Phillips, the president of the Missouri Advanced Technology Institute, for the newly created associate director for industrial technology. The Senate must approve both nominees.

George Mason U. Snares NSF's Moore

The number 2 man at the National Science Foundation, John H. Moore, is leaving the agency to head George Mason University's new International Institute. The Arlington, Virginia, institute is to house the university's international studies program.

Moore, who has served as NSF's deputy director since he was appointed to the post in 1985 by President Reagan, starts his new position in early January.

HUGO: Genome Data Open to Scientists

The Human Genome Organization (HUGO) wants no part in James Watson's recent threats to withhold data from the Japanese unless they cough up money for HUGO and the genome project.

The organization has responded with a statement distancing themselves from Watson, who directs the genome project at the National Institutes of Health. It is the unanimous view of the members that "all data would be freely accessible to scientists and not used to secure narrow national interests"—all except Watson, who also is a HUGO member.

Meanwhile, HUGO has a slate of new officers. Sir Walter Bodmer, research director of the Imperial Cancer Research Fund in London, takes a 3-year term as the new president, replacing HUGO founder Victor McKusick, who will head HUGO's new ethics committee.

HUGO also has two new vice presidents: Andrei Mirzabekov, director of the Institute of Molecular Biology in the Soviet Academy of Sciences, and Charles Cantor, director of the Human Genome Center at Lawrence Berkeley Laboratory. Kenichi Matsubara, director of the Institute for Molecular and Cellular Biology, continues as the third vice president.