RANDOM SAMPLES

edited by CONSTANCE HOLDEN

NSF Wants an Education Think Tank

Science education may not be in great shape in the United States—but the business of science education reform is booming. The latest sign of an expanding enterprise: The National Science Foundation (NSF) is planning to launch a new science education think-tank.

The agency is seeking proposals for the establishment of a National Institute for Science Education that will be a gathering place for a small cadre of scholars—perhaps 25 at any given time—who will spend up to a year each coming up with the most brilliant possible schemes for the reform of science and math education, from kindergarten through college. There will be a core group of full-timers, including a director and an associate director.

The institute, to be funded at $2 million a year over the next 5 years, may be based at a university or any other facility involved with science, says program director Larry Suter of NSF's education directorate. The NSF will be actively involved in setting the institute's priorities; the current buzzword is "systemic" reform of science education—that is, a coordinated attack on curricula and teaching at all levels. Institute scholars will also evaluate and make recommendations about NSF education programs.

So far, says Suter, he's received "dozens" of phone calls from interested parties. The deadline for preliminary proposals is 15 April.

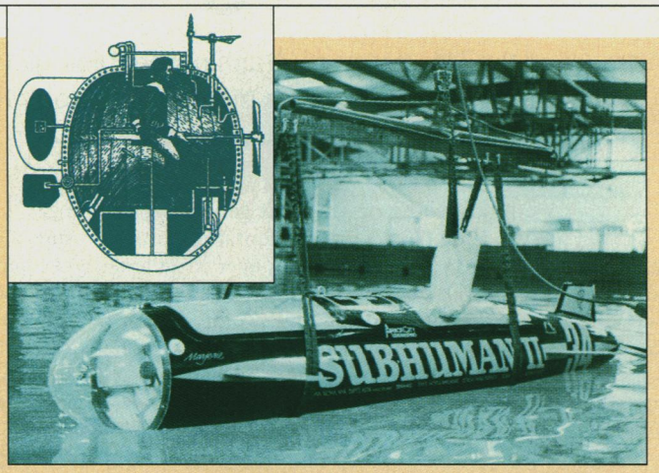
Canada-France EMF Study Inconclusive

Do electromagnetic fields (EMFs) generated by power lines cause cancer? Results are now in from the largest occupational study so far, covering more than 223,000 electric utility workers in Canada and France—and the picture is as murky as ever. Although researchers found an excess of cases of leukemia among the workers, their study failed to demonstrate any relation between cancer and the level of EMF exposure.

For 15 years epidemiologists have looked for a link between EMFs and cancers in utility workers and others exposed to power transmission lines. In 1992 a pair of Swedish studies found the first clear dose-response relationship: The greater the Swedes' exposure to EMFs, the more likely they were to develop certain cancers (*Science*, 11 Dec. 1992, p. 1724). But instead of solidifying the link, the new Canadian-French study couldn't replicate it.

The scientists, led by Marcel Goldberg of the Institut de la Santé et de la Recherche Medicale in Paris, Gilles Theriault of McGill University, and Anthony Miller of the University of Toronto, looked at 4151 cancer cases in workers at three electric utilities from 1970 to 1989, estimating exposure levels based on data on present-day workers. The study, to appear next week in the *American Journal of Epidemiology*, did show—in line with previous studies—a significantly elevated risk for one cancer: acute nonlymphoid leukemia, particularly myeloid leukemia.

But despite their meticulous exposure data, the researchers were unable to find a relation between the risk of cancer and the level of exposure. "It's a well done study, but unfortunately it's inconclusive," says David Savitz, an epidemiologist at the University of North Carolina, who hopes he'll get something more definitive from a study he is currently conducting.



Evolving species. *Sub-Human II*, 18 feet long and with a 30-inch diameter, held record as fastest human-powered propeller-driven submarine until last month. Inset: David Bushnell's *Turtle*

Peddling for Underwater Glory

David Bushnell would have been in his element. The Yale student who sneaked out into Boston Harbor in his home-made sub *Turtle* in 1776 to try to blow up a British man-o'-war would have fit right in at last month's "human-powered submarine invitational," sponsored by the Scripps Institution of Oceanography and the University of California at San Diego.

The competition, meant to foster technological spinoffs and seduce young people into science and engineering, isn't the first of its kind. Since 1989, Florida has hosted human-powered sub races sponsored by the H.A. Perry Foundation. But the West Coast version has some advantages, argues Kevin Hardy, senior developmental engineer at the Scripps Institute of Geophysics and Planetary Physics. For one thing, unlike in Florida, where the race is in the open ocean, the West Coast version is staged under carefully controlled conditions at a covered offshore model basin, 13 feet deep and the length of a football field.

The March event featured 14 subs—with either one or two crew members—in three divisions: high school, collegiate, and professional. The designs fell into two categories, propeller-driven and otherwise. The non-propellered craft have contrivances like fins and tails, driven by foot peddles. Crews breathe with the aid of scuba tanks. This year's winner: A propeller-driven craft from Florida Atlantic University. The aquanauts set a new record, attaining a speed of 5.9 knots—decisively besting the record of 4.72 knots set in the model basin in 1992 and winning a listing in the *Guinness Book of World Records*.

Senate Rejects Overhead Cost Freeze

University lobbyists have been battling an administration proposal to save $130 million next year by freezing overheads on academic research grants. Now they've persuaded the Senate to omit the proposal from its version of the budget resolution that was passed last month.

The victory comes on the heels of a resolution by the National Science Board (NSB) asking the administration to find other ways to lower the federal deficit. The NSB says the freeze would be "inconsistent" with the policy of reimbursing universities the full costs of federally funded research. That stance puts NSF Director Neal Lane in the awkward position of having to support a White House policy that his oversight board opposes.

The debate has become partisan: the House science committee included the freeze in an NSF authorization bill after Republicans reminded its chairman, Representative George Brown (D–CA), that opposing it would put Democrats at odds with their president. The full House voted for the cap last month.

Congress will have to make up its mind when the House and Senate bills go to conference after Easter recess. But the issue may not be resolved until appropriations are voted on in the fall.