Briefings

edited by CONSTANCE HOLDEN

Malaria Research Under Scrutiny

The U.S. effort to combat malaria has been in upheaval for several years, ever since a vaccine research program at the U.S. Agency for International Development (AID) ran into severe management trouble (*Science*, 29 July 1988, p. 521). Now, in hopes of regaining balance and direction, the three major federal sponsors of malaria research are giving the Institute of Medicine (IOM) $600,000 to do a comprehensive review of the field.

"We're going to look at everything, the whole kit and kaboodle" of U.S. malaria prevention and control programs, says Stephanie Sagebiel of the IOM. Sponsors of the study, in addition to AID, are the National Institute of Allergy and Infectious Diseases and the Department of Defense. A committee of 17 to 20 experts, with a staff of three, will review various strategies for controlling malaria, assemble information on cutting-edge research, and recommend future government strategies. A draft is due in 18 months. The chairman has not been selected yet. Jay Sanford, president of the U.S. Uniformed Services University in Bethesda, Maryland, is one of the candidates under consideration.

Probing the Big Bang

A dramatic flow of new information on cosmic background radiation—essentially the afterglow of the Big Bang—is expected from the Cosmic Background Explorer satellite (COBE), to be launched from California's Vandenberg Air Force Base on 9 November.

Cosmic background radiation is a faint whisper of microwave and infrared photons that impinge on Earth from every direction. It yields the only direct evidence of what the infant universe was like.

The $230-million COBE, under development at NASA for 7 years, is designed to improve the quality of ground-based data by factors of 100 to 1000, depending on the wavelength monitored. Indeed, it will allow scientists to study far infrared wavelengths for the first time, opening a brand new window on space.

COBE will map the sky twice during its 1-year mission, looking at whether the temperature and brightness of the radiation are uniform in all directions from Earth. Variations in temperature could mean that energy sources other than the Big Bang, such as black holes, were in on the formation of the universe. Variations in brightness would indicate nonuniformity in the density of matter in the aftermath of the Big Bang. Higher density areas are presumably the precursors of modern galaxies. COBE also might be able to detect a faint glow from the very first stars and galaxies.

Originally scheduled for launch on the space shuttle, the probe was delayed a year by the Challenger disaster. A slimmed-down version was redesigned for launch by a Delta rocket.

Women (Not) in Math

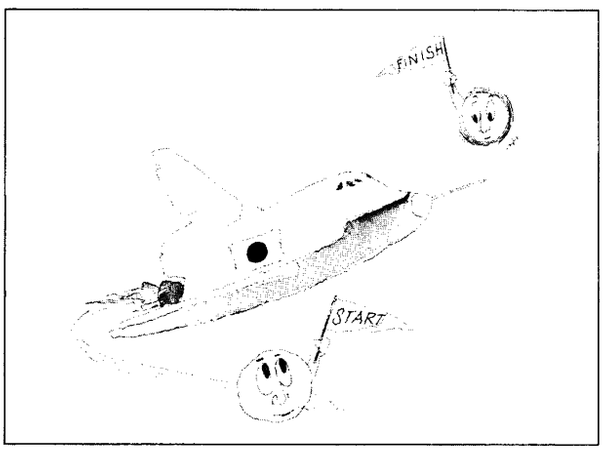
Efforts to get more women into math have a long way to go, judging by the results of the latest William Lowell Putnam college math contest. Of the 100 winners, only one is a woman.

The Putnam contest, now in its 50th year, is the premiere math contest for undergraduates in the United States and Canada. Administered every December, it is a grueling 6-hour affair involving 12 essay-type questions that put a premium on ingenuity, speed, and creative problem-solving. Students enter individually or in teams of three whose scores are combined.

About 2100 students from 360 institutions took the test last year. All the top winners were men, with Harvard in the lead. The lone female winner was 22-year-old Paulina Chin, now a graduate student in computer science at Waterloo University in Ontario.

Officials of the contest, run by the Mathematical Association of America, have expressed distress over the low female showing. Loren Larson of St. Olaf College in Northfield, Minnesota, who helps design the questions, says they don't know what proportion of entrants are females because gender is not designated on the test. But the NSF has reported that 40% of mathematics undergraduates are women. A far smaller proportion go on to do graduate work in the field.

Larson says that although doing well on the test is a good indicator of mathematical talent, it doesn't tell the whole story because it doesn't reflect such qualities as persistence and depth of thinking. Larson himself says, "I don't think I would do well on a Putnam exam."



Julie Cherry

The New Moon Race?

Watch out America, here comes Japan again, this time trying to take over the moon business. At least three Japanese space research groups—two government space R&D agencies and a private industry consortium called the Institute for Future Technology—have been looking into robotic and manned missions to the moon. And they aren't just fooling around. One anonymous American official who has seen the studies says there is a "large-scale effort" going on, with a "surprising amount of depth in the analysis," including complex scenarios for robotic construction of a manned base on the moon.

The lunar plans can't be found in the official Japanese space agenda yet, but if you want a hint of Japan's growing interest in the moon, check out the last journal of the Japan Society of Macro Engineers. Sources say it is devoted entirely to lunar bases, a topic that has gotten nary a glance in previous issues.

The only thing Japan lacks for its plans is launch capability, so any trip to the moon would most likely be an international effort. But it looks as if Japan might be ready and waiting to take the leadership role in the second generation of manned moon exploration.

Software Solution

With Japanese companies threatening to surge into the lead in the supercomputer race, U.S. manufacturers are whipping themselves into a frenzy with new hardware: bigger memories, faster processors, and more and more processors working in parallel. If they want to stay ahead, they have no choice—right?