sible. "There is a slight chance that the orbit may eventually take SOHO to a point where the solar panels are aimed at the sun," says Steigerwald. This would power up the craft and perhaps enable controllers to make contact with it again.

A team of specialists from ESA and from Matra Marconi Space, the builder of the craft, has gathered at Goddard to plan the rescue effort. "We haven't lost [SOHO] yet," says Gough. "I'm still optimistic."

–ALEXANDER HELLEMANS

Alexander Hellemans is a writer in Naples, Italy.

GENOMICS

Canada Proposes $175 Million Effort

OTTAWA—The Medical Research Council (MRC) of Canada has pledged $17.5 million toward a 5-year, $175 million national genomics initiative aimed at reestablishing the country's global position in the rapidly growing field. The money would seed a project much more ambitious than the one terminated in 1996 as part of government-wide austerity moves. First, however, the project's backers must raise more than $100 million in additional funds from the federal government and nearly $50 million from business and other sources.

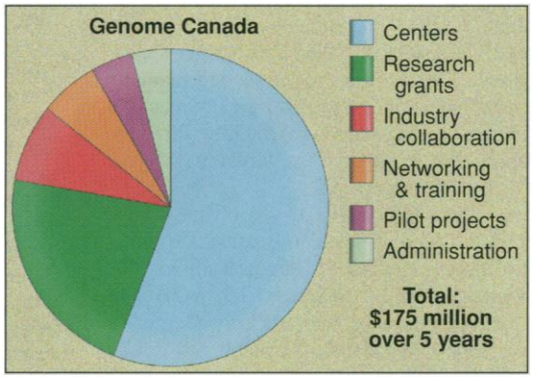
"The potential advantages to Canada are enormous," says Marc LePage, MRC's director of business development. "The initiative will address major diseases that affect a lot of Canadians, while helping to train young researchers in promising new areas like bioinformatics. Also, there's an economic advantage from industrial spin-offs that come from the field. Canada will be taking a major step forward here."

The initiative, called Genome Canada, would be the successor to the Canadian Genome Analysis and Technology program, created in 1992. Genome researchers have struggled to find support since its dissolution. "We've been thinking and talking while other people have been moving ahead," says geneticist Lap-Chee Tsui, head of the Centre for Applied Genomics at the Toronto Hospital for Sick Children. "We definitely lost a lot of ground in the meantime."

Tsui, who chaired an MRC-appointed Genome Task Force that crafted the proposal, says what's envisioned is a "structured" program focused on basic genomics research that can feed the growth of biotechnology companies across agriculture, forestry, the environment, and health care. "This time," he says, "we should have bigger centers and a much more coordinated effort, more targeted instead of purely investigator-driven."

The task force's report, which was adopted by MRC's governing board on 19 June, casts Genome Canada as a "virtual national institute" or consortium. In addition to managing a multidisciplinary research effort, it would help to broker early-stage and spin-off companies. The biggest component of the program, about $98 million, would be centers of research excellence in six fields: genome mapping and large-scale sequencing (with the goal of sequencing 25 to 50 megabases of DNA per year at three or four sequencing facilities); functional genomics; genotyping technologies; proteomics; bioinformatics; and medical, ethical, legal, and social issues.

Genome Canada joins a spate of proposals—like the Canadian Institutes of Health Research (*Science*, 8 May, p. 821)—rising like hot-air balloons in the suddenly balmy economic climate. But staying aloft will be a challenge. The magnitude of the projected federal contribution, some $108 million, will likely require a special Cabinet appropriation, and the Liberal government of Jean Chretien has warned repeatedly that talk of how to spend a sudden budget surplus is premature. The business plan also includes raising $28 million from pharmaceutical and biotechnology firms, $14 million from provincial governments, and $7 million from nonprofit organizations and foundations.



Ambitious plans. New initiative would link research, training, and applications in a "virtual national institute."

Although proponents admit they have set their sights high, they remain optimistic. They are hopeful that their efforts will be incorporated into a national biotechnology strategy expected to be issued this fall by Industry Minister John Manley. A report last fall by an outside panel of experts urged him to create such an initiative as a necessary condition of a flourishing biotechnology sector. "Everybody seems to be very much aware of genomics and the fact that Canada wants to play a big role in biotechnology," says Tom Hudson, assistant director of the Whitehead Center for Biomedical Research at the Massachusetts Institute of Technology and assistant professor at McGill University in Montreal. "We're thrilled [by MRC's announcement]."

–WAYNE KONDRO

Wayne Kondro is based in Ottawa.

SPACE

Remodeled ESA Backs Applications Projects

The European Space Agency's (ESA's) governing council last week approved development money for a new satellite-based navigation system, ESA's revamped Earth-observation program, an upgrade for the Ariane-5 rocket, and a new launcher for small satellites. The decisions demonstrate the agency's increasing focus on space applications since Antonio Rodotà, took over as the agency's director-general last July (*Science*, 5 September 1997, p. 1426). But the council's apparent unanimity masks major disputes that loom over some programs. Some heavy politics are in store before the more senior council of European space ministers decides next year on whether to implement the programs, and how much to spend on them.

MRC OF CANADA

The Earth-observation program is one potential area of discord. The ESA council is requesting about $330 million per year for a new program of scientific and applications missions (*Science*, 16 January, p. 316). But some countries think this is excessive. "We approve of the ideas," says Gérard Brachet, head of the French space agency CNES, "but they are aiming too high. We think [$190 million] per year is enough." Roy Gibson, the agency's first director-general and now a member of two panels advising ESA on Earth observation, is sympathetic to some reduction, but he says a level of $190 million would threaten the science content.

Even larger battles loom over the proposed satellite navigation system. ESA is hoping to develop both ground-based and satellite-borne equipment that would, during a first phase, make use of signals from the U.S. Global Positioning System (GPS) and Russian Glonass satellites to provide precise position information across Europe. A second phase, slated for 2010, could be anything from a joint system with the United States and the Russians to an independent European system. France, however, is concerned that the United States might deny access to GPS signals in some circumstances and seems to favor a European solution, while the United Kingdom prefers transatlantic cooperation. "This is a decision that will be taken at prime ministerial level," says Brachet.