

supply, for example, by cutting back on feeding lard and fish meal to cattle and pigs.

Whether such steps are reasonable will depend on whether the report passes muster with skeptical outside scientists. Several who spoke with *Science* asserted that the new worker studies of cancer effects are inconclusive. Even to those who have closely watched EPA's new analysis, the 10-fold increase "is a lot more than anybody expected," says Dennis Paustenbach, a risk assessment consultant with Exponent in Menlo Park, California. "It's going to require a lot of discussion before there's widespread acceptance."

That scrutiny will come in the form of public comments, a review by an outside science panel in late July, and another review by the SAB in September. Farland is urging scientists to take a close look at the report and the new data before passing judgment: "We'll have to see what they think after they've read the document."

—JOCELYN KAISER

## CANADA

### New Virtual Institutes For Biomed Research

**OTTAWA**—A prominent Canadian cancer researcher has taken on the job of leading a new biomedical research institution that is modeled after the U.S. National Institutes of Health—but which reflects 21st century practices and priorities.

Last week Alan Bernstein, 52, was named president of the Canadian Institutes of Health Research (CIHR). The new entity, which officially opened its doors on 7 June, replaces the Medical Research Council as the country's primary source of extramural grants for basic biomedical, clinical, population-based, and health systems research. It's been given a \$39 million budget increase, to \$330 million, for the fiscal year beginning in April, and the promise of \$72 million more in 2001–02 (*Science*, 26 February 1999, p. 1241). But instead of presiding over a leafy campus and a massive infrastructure, Bernstein will be midwife to a national network of a dozen or so "virtual" research institutes, grouped by scientific theme, that will weave together work in each field. He must also decide the proper scope of the CIHR, working

in tandem with a 19-member governing council of senior academics and health care officials also appointed last week.

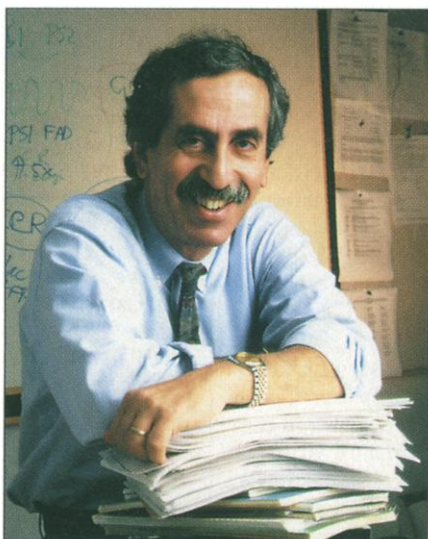
"This is a great challenge and a great opportunity," says Bernstein, who this week sat down here with 40 of the country's leading scientists to gather suggestions for the council's first meeting later this month. "It's really a bold and unique vision for funding, organizing, and stimulating health research." The appointment of Bernstein, who since 1994 has been director of the Samuel Lunenfeld Research Institute at the University of Toronto's Mount Sinai Hospital, is seen by scientists as a sign of the government's commitment to basic biomedical research.

The structure of CIHR is expected to closely follow the recommendations of an interim council, which released its final report last week. The group strongly suggested forming institutes in eight areas: cell function and cancer; aboriginal and indigenous people's health; immunity and infection; musculoskeletal health and fitness; nutrition, hormones, and metabolic health; cardiovascular and respiratory health; mental health, addiction, and the brain; and health systems: care, healing, and recovery. The council debated but didn't reach a conclusion on whether to create as many as four institutes to handle work in two other areas—the social, environmental, and genetic influences on health; and human development and health throughout life. Although the final roster is up to the new council, Bernstein says that he hopes the debate doesn't steal time from getting CIHR up and running: "We have to operationalize this bold vision, not go back and start from scratch."

Each institute will be headed by a scientific director and an independent advisory board that will oversee a pot of money to support networking initiatives, training grants, workshops, and what one official calls "cutting-edge thinking." Scientists

will continue to apply to the CIHR itself, which will operate a centralized review system, but they will be asked to designate the institute with which they wish to affiliate.

Still unresolved is the management of \$105 million worth of health research programs administered by two existing granting councils in the natural and social sciences.



**A real leader.** Alan Bernstein will add flesh and blood to the virtual nature of the new institutes.

Bernstein says that he doesn't favor a hostile takeover of the health components of the two granting councils, although the CIHR has already swallowed Health Canada's \$40 million national health R&D program. "I want researchers now served by other agencies to feel at home in the CIHR," he says. "But I would encourage those communities to adopt CIHR as their first home, because we have the broadest mandate."

Bernstein plans to take a practical approach to resolving the issue. "My guideline is: Does this make sense? Is it the best way to organize science and get the best science done for the least amount of bucks?" The answer, he adds, should also help the country meet Prime Minister Jean Chretien's vow, in announcing the CIHR, to make Canada "the place to be in the 21st century."

—WAYNE KONDRIO

Wayne Kondrio writes from Ottawa.

## ASTRONOMY

### Test Flight Added for Future Space Telescope

**ROCHESTER, NEW YORK**—Last month, a national panel of astronomers picked the proposed Next Generation Space Telescope (NGST) as the field's top priority during the next 10 years (*Science*, 26 May, p. 1310). Now, it appears that researchers will have to wait nearly the full decade for the Hubble Space Telescope's successor to take wing. NASA officials have decided to test NGST's demanding technology in a small-scale version, described here last week at a meeting of the American Astronomical Society, before forging ahead with the real thing. The technological delays that led to the shakedown mission will push the launch of the full telescope back another year to 2009 at the earliest.

Astronomers believe that NGST will extend their vision to the era when galaxies first formed and will expose new details of how stars and planets arise in our own galaxy. Its mirror will be about 8 meters across, more than three times as wide as Hubble's and rivaling the largest optical telescopes on Earth. Such a mirror is too big and heavy to launch in one piece, so engineers must devise a way to deploy a segmented mirror in space. Moreover, NGST will orbit around a gravitationally stable point in space about a million kilometers from Earth, beyond the reach of space-shuttle repair missions. Teams from Lockheed Martin and TRW/Ball Aerospace are developing competing plans for the telescope, and NASA will select the winning design by the end of 2001.

The contractor will then have 3 years to prepare a \$200 million prototype called "Nexus," which will fly to the distant orbit