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Canadian research infrastructure receives support, but will it last?

Investment in infrastructure typically brings to mind hard-hat projects such as the construction of highways. But to keep science on the fast track, focused funding of research infrastructure is necessary. Following this logic, in December the Canada Foundation for Innovation (CFI) announced it would award C\$45.5 million (\$35.9 million) to specific Canadian research projects. The investment will support more than 250 projects, including those in the health field, by providing equipment to attract and retain researchers to Canadian institutions.

The money will be distributed through two channels: the Leaders Opportunity Fund, which allows institutions to invest in research equipment for new or existing faculty, and the Infrastructure Operating Fund, a smaller accompanying program that covers a portion of the operating and maintenance costs of CFI-supported infrastructure projects.

“We’re really pleased,” says Peter Lewis, vice dean of research at the University of Toronto’s Faculty of Medicine. “It’s been quite catalytic to get researchers to work together on projects that they might not have been able to otherwise.”

The CFI is an independent organization created by the government in 1997 to invest in research infrastructure. Normally, it funds up to 40% of a project’s costs, with the remainder of the project’s cost coming from the institutions where the research is conducted and through partnerships with the public, private and voluntary sectors.

The foundation was originally intended to operate over a five-year period, but several additional allocations have lengthened its existence and increased its expenditures. The most recent was a C\$510 million allocation in 2007. To date, the CFI has committed almost C\$4.5 billion to more than 6,000 projects. “CFI gives scientists the opportunity to think big,” says Eliot Phillipson, the CFI’s president and chief executive officer.

Gordon Chua, an assistant professor in the department of biological sciences at the University of Calgary, received nearly C\$475,000 from the recent competition. It will be used to construct a state-of-the-



Cash injection: Some say that infrastructure investments have reversed a brain drain from Canada

art functional genomics laboratory with a microarray scanner and several robots for performing synthetic genetic arrays (SGA). “No one else in Prairie Canada—Manitoba, Alberta and Saskatchewan—has the equipment to do an SGA analysis experiment. This will be the first one,” he says.

The CFI is credited with helping to reverse the brain drain Canada experienced in the 1980s and 1990s. “We’ve been able to attract huge stars. We’re bringing Canadians back from the US, Europe and elsewhere,” says Alison Buchan, senior associate dean of research in the Faculty of Medicine at the University of British Columbia in Vancouver.

According to Phillipson, CFI funding has played a part in the recruitment of 8,000 new faculty members to Canadian research institutions.

The organization has also invested in the construction of big-budget science projects, including the Canadian Light Source in Saskatoon, Saskatchewan, a third-generation synchrotron where the BioMedical Imaging and Therapy facility recently captured its first X-ray images. In August, CFI announced C\$554 million for eight large-scale, research hospital-based infrastructure projects, half of which were located in Toronto.

But raising the matching funds from provincial governments and industry has sometimes been difficult. Universities have faced the threat of ‘donation fatigue’, and researchers and administrators have increased the amount of time and money they invest in applications.

In the opinion of some researchers, CFI’s bounty has hurt the country’s main funding councils, including the Canadian Institutes of Health Research (CIHR). CIHR’s annual budget has grown impressively from C\$360 million in 2000—its inaugural year—to C\$960 million this year, but it has yet to hit the C\$1 billion mark, and many researchers say that basic biomedical research is suffering because the agency is underfunded.

Another headache, says Buchan, is that the government has not addressed the yearly costs of running these projects. “This wonderful infrastructure is just decaying around us. We’ve put in all this investment, and we’re not realizing the full potential because we don’t have the operating budget,” says Buchan. As *Nature Medicine* went to press, Canadian Prime Minister Stephen Harper was preparing to unveil a stimulus budget, which is expected to contain significant infrastructure spending.

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