January 30, 2002

Backgrounder

As part of its on-going efforts to promote innovation across Canada, the Canada Foundation for Innovation (CFI) today announced just over $779 million in funding to support projects at universities, colleges, hospitals, and not-for-profit research institutions.

The funding was allocated in the following manner:

- $588.3 million for 208 projects at 65 institutions under the **Innovation Fund**;
- $11.1 million for 72 projects at 31 institutions to support new researchers under the **New Opportunities Fund**;
- $179.8 million under the **Infrastructure Operating Fund** to contribute to the incremental operating and maintenance costs associated with the new infrastructure projects.

This backgrounder details some of the projects receiving funding by province under the Innovation and the New Opportunities Funds.

Canada National Projects

A total of $16.4 million representing 3 projects was also invested Canada-wide. These investments were:

- $9.3 million to extend and enhance the existing infrastructure at the National Microelectronics and Photonics Testing Laboratory housed at Queen's University. This laboratory will verify, validate and test microelectronic and photonic devices and systems to bring them into step with rapidly developing microelectronics and lightwave technologies.
- $4.4 million to establish, through a national partnership between academic institutions across Canada, federal and provincial funding agencies, and the National Research Council (NRC), a National Ultra High Field Magnetic Resonance Facility for Solids. The proposed facility, to be housed at the University of Ottawa, will advance the science of materials and the innovative development of technologically advanced products.
- $2.6 million to create a Text Analysis Portal for Research (TAPOR) at McMaster University. This Portal brings together leading institutions in the field of humanities computing to develop a common portal for research projects involving electronic texts.

British Columbia

A total of $92,1 million representing 29 projects at 8 institutions was invested in British Columbia.

The University of British Columbia received $76 million for 16 projects including:

- $17.2 million for the Museum of Anthropology to integrate research in real and virtual space. Funding will go toward linking a redesigned research wing at the Museum and research stations in partner communities to major international collecting institutions and researchers through a Reciprocal Research Network. Partners include three First Nations - Musqueam, Sto:lo and the U'mista Cultural Centre;
- $16.5 million to build an integrated Biodiversity Laboratory to investigate how climate change and human disturbance affects Canadian ecosystems;
- $12.8 million for ICORD an interdisciplinary research centre focusing on the development of effective therapies to promote full functional recovery after spinal cord injury;
- $6 million to establish the Centre for Blood Research to apply emerging methods of biotechnology to the study of blood and blood processing. Partners include the Canadian Blood Services and Bayer Canada Inc.; and
- $3.5 million to establish the Centre for Research in Childhood Diabetes at the BC Research Institute for Children's and Women's Health. This research will have major focus areas in islet cell biology, genetics, immunology, virology, protein analytics and histopathology.

The University of Victoria received $8.7 million for 5 projects including:

- $4.1 million for the Victoria Experimental Network Under the Sea (VENUS) a proposed network of seafloor instruments to observe the seafloor and water column which will allow scientists to develop models of water movement that can be used in the event of oil spills, tsunamis earthquakes of mass waste disposal; and
- $3 million for a Research Computing Facility to allow the University to acquire high performance computer mass storage and an enhanced processing system. This will allow the University to store and process large scientific and engineering data, health information and multimedia objects.

Simon Fraser University received almost $5 million for 3 projects including $3.8 million to fund Interdisciplinary Research in the Mathematical and Computational Sciences. This investment will strengthen existing and foster new cross-faculty projects, and facilitate creative, innovative synergies in computational research.

In addition, Forintek Canada Corp received funding for projects in designing and manufacturing an innovative, high-speed laser scanning and data acquisition system; Malaspina University-College received funding to develop a Centre for Shellfish

Research and Selkirk college received funding for their Geo-spatial Research Centre.

Alberta

A total of $96,2 million representing 43 projects at 6 institutions was invested in Alberta.

The University of Alberta received $67.3 million for 22 projects including:

- $12 million for the Western Canada Research Grid a partnership between eight research institutions in Alberta and British Columbia which provides complementary computational resources to their research communities;
- $11.4 million for the creation of Alberta Diabetes Research Centre where existing and newly-recruited scientists can work together to make new treatments of diabetes a reality;
- $6.4 million for the Heart and Stroke Research Centre to support research aimed at the prevention and cure of cardiovascular disease;
- $5.5 million for Project CyberCell to study the dynamic and structural nature of E.Coli cellular processes at a sufficiently quantitative level of chemical detail to allow a living cell to be created computationally. This process will speed up drug design and screening and will form the basis for new strategies in environmental risk assessment; and
- $3 million dollars to establish a Nanofabrication facility at the Electrical and Computer Engineering Research Facility.

The University of Calgary received $23.3 million for 14 projects including:

- $4.5 million for the Centre for Advanced Medical Imaging to build the world's first ultra-high field magnetic resonance imaging system. This system will enable high-resolution imaging of animals allowing the translation of basic scientific discovery into actual health care applications.
- $4.3 million for the Centre for Mouse Genetics. Capitalising on the synergy between human and mouse genetics this work will facilitate both the identification of functional pathways underlying human disease and development of therapeutics;
- $4.3 million to establish a Musculoskeletal Health and Arthritis Research Consortia for integrated research into Osteoarthritis. Funds will go towards the development of an infrastructure and acquiring essential equipment for the Consortia; and
- $3.9 million for research into the recovery of heavy oil. This research will revolve around reservoir characteristics before and during recovery processes.

In addition, TRLabs, Canada's largest not-for profit research consortia in the Information and Communications Technologies received $3.7 million to extend its research. The areas of focus will be wireless communication, optical network infrastructure and multimedia technologies. Olds College received funding to construct a micro-processing facility for applied research in agri-food products. The University of Lethbridge received funding for their Canadian Centre for Behavioural Neuroscience

and $79,000 for equipment for their advanced infrared physics laboratory. Athabasca University received funding for their geophysical observatory a facility for space geophysics and related scientific studies;

Saskatchewan

A total of $18,7 million representing 15 projects at 3 institutions was invested in Saskatchewan.

The University of Saskatchewan received $15.9 million for 11 projects including:

- $8.5 million to rehabilitate and equip a 1 km deep mineshaft as a controlled-gravity drop shaft facility for research needing simulated space environment. This shaft will enable and support a varied program of research in material science, fluid science and combustion.
- $4.7 million for the development of the University of Saskatchewan Research Network part of the University's renewal effort to reinforce its position in the province's R&D landscape. The Campus Computer network (USR-net) which is a gateway to the Canadian Light Source synchrotron facility - Canada's biggest scientific investment in 30 years - connects researchers within the University as well as across Canada and around the world.
- $1.2 million for the Experimental Lab for Internet Systems and Applications to provide a geographically distributed, state-of-the-art Internet testbed shared by researchers at the University of Saskatchewan and the university of Calgary.

The University of Regina received $2.4 million dollars for 3 projects including $1.8 million for the International Test Centre for Carbon Dioxide Capture to equip it with advanced scientific research tools, equipment and instruments to ensure it remains a world leader in the area of Energy and the Environment.

In addition, the Saskatchewan Indian Federated College received $350,000 to provide state-of-the-art research equipment for research and teaching laboratories.

Manitoba

A total of $8,7 million representing 11 projects at 2 institutions was invested in Manitoba.

The University of Manitoba received $8.1 million for 10 projects including:

- $3.5 million to establish a Centre for agroecological livestock production. The Centre for Animal and Land Use Study will be unique in North America and will provide the infrastructure for a long-term, multi-faceted research program for the redesign of intensive animal production and management of land.
- $1.2 million to establish the Manitoba Breast Cancer Research and Diagnosis Centre a novel and highly focused centre that will foster the development of innovative approaches for gene discovery and evaluation, and diagnosis and

intervention of breast cancer.
- $1.2 million to purchase an Electron Microscope (200 kV Field Emission Gun Cryo-Transmission) for the Electron Microscopy Centre. This will provide graduate students, faculty and researchers in the regions Universities, research centres and institutions and hospitals with state-of-the-art facilities for highly innovative research.

Red River College of Applied Arts, Science and Technology received $550,000 for the Centre for Applied Research in Sustainable Infrastructure which will allow the college to pilot applied research in developing advanced sustainable infrastructure technologies primarily in construction material systems and environmental technologies.

Ontario

A total of $179,5 million representing 94 projects at 24 institutions was invested in Ontario.

The University Of Toronto received $21.7 million to fund 12 projects including:
- $5.5 million to further develop the CFI funded PsciNet system to provide researchers in the University's physical and engineering sciences with the most powerful computing systems available. This upgrade will support research in environmental physics, mechanical and aerospace engineering, high energy physics and quantum optics.
- $4.5 million to create the Centre for the Study of Biological Communication Systems. This centre will have three research facilities: a Human Communications Research facility and an Animal Communications Research facility both at the University of Toronto at Mississauga; and a Multi-Modal Communication Research facility at Queen's University.
- $4.3 million for the centre for Nanostructured Polymeric and Inorganic Materials to support research in the synthesis and characterization of novel polymers and materials with a focus on advanced materials friendly to the environment and new materials for miniature electronic, magnetic and photonic devices.

The University of Waterloo received $19.4 million for 8 projects including:
- $5.9 million to the Water Initiative which provides research to ensure a sustainable, high-quality water supply in Canadian watersheds. Chemical, biological and isotopic analytical equipment will be obtained to improve water quality assessment and to support research.
- $5.2 million for the Giga-to Nano Electronics Fabrication Facility for Wireless, Bio, Environment, and Medical Applications to fund a new clean room facility for interdisciplinary collaborative efforts between researchers from many disciplines and institutions.

The University of Western Ontario received $23 million for 9 projects including:
- $13.8 million for the London Regional Innovarium. This innovarium will allow

researchers to conduct research and will provide the catalyst to incrementally accelerate innovations. This innovarium will be composed of a Core Transgenic Mouse facility at Westminster Tower and a modular Vivarium at the UWO.
- $2.5 million to develop a network of special atmospheric radars for studies of wind motions and turbulence in the region of Ontario and Western Quebec.

The University of Ottawa received $13.8 million for 9 projects including:
- $5.2 million for the Canadian Century Research Infrastructure project to construct and develop a series of research databases created from Canadian census enumerations for the later nineteenth to the mid-twentieth century. This Canada-wide project will enable the long term study of Canada including analyses of demographic, economic, social, health, environmental and cultural change.
- $3.4 million to provide critical infrastructure for the Kidney Research Centre of the Ottawa Health Research Institute the first of its kind devoted exclusively to research on the molecular basis of kidney disease.

McMaster University received $5.7 million for 9 projects including:
- $1.4 million for the Micro-manufacturing laboratory to expand and complement the research program at the McMaster Manufacturing Research Institute. The lab will focus on ultraprecision manufacturing of microcomponents a research field that is a key enabling technology for many mechanical, electrical/electronic and optical applications.;

Queen's University received $11.3 million for 8 projects including:
- $3.8 million for the Facility for Manufacturing of Advanced Structural and Electronic Ceramics to conduct basic and applied research on the characterization, synthesis and consolidation of nanopowders, and the characterization and manufacturing of components for fuel cells, actuators, sensors and smart structures.
- $3.7 million for allow a team of researchers to establish an initiative at the chemistry-biology interface dedicated to innovation in strategies in chemical synthesis, drug action mechanism, and bio-screening for new drug discovery.

Carleton University received $6.8 million for 4 projects including $3.9 million for the construction of a full-scale fire research facility to identify and improve fire-safety levels in residential and commercial buildings.

The University of Guelph received $18 million for 6 projects including $11 million for the creation of an Institute for Animal-Human links in Health Science Research.

Sunnybrook and Women's College Health Sciences Centre received funding for two projects: $6.1 million for Imaging Research Centre for Cardiac Intervention and $4.6 million for the Toronto Angiogenesis Research Centre.

Mount Sinai Hospital received $21.5 million to build a state-of-the-art facility for the

generation, breeding and maintenance, phenotypic analysis, pathology and cryopreservation of genetically altered mice.

In addition Ryerson Polytechnical Institute received funding for a facility for fundamental biophysics research; and, Algonquin College received funding for its Digital Cinema Research Centre.

Quebec
A total of $171.5 million representing 66 projects at 18 institutions was invested in the province of Quebec.

Concordia University received $9 million for 2 projects. Of this amount, $8.7 million will be used to provide infrastructure for the Institute for Digital Media, an alliance of researchers from Concordia University, Université du Québec à Montréal and the Université de Montréal. The researchers at the Institute will pursue new approaches in digital cinema, electronic imaging, wireless video and interactive television.

L'Ecole Polytechnique de Montréal received a total of $13.5 million for 4 projects including:

- $3.7 million to create a research laboratory for the preparation of high performance multi-phased polymers. This research can help develop new applications for polymer components.
- $6.7 million to build a research laboratory which will study the behaviour of engineering structures such as bridges and buildings, particularly how they are affected by extreme temperature changes and natural conditions including freezing rain and earthquakes.

Other projects receiving funding at the Polytechnique were in the areas of medical and engineering research.

McGill University received $47.8 million for 15 projects including:

- $12.8 million for the expansion of the genomics and proteomics network in the province of Quebec under the Genome Quebec umbrella. This network will provide leadership in the technology development, genomic services, training, and public outreach.
- $4.8 million for the Montreal Integrated Genomics Group for Research on Infectious Pathogens (MIGGRIP) to study the problem of drug resistance in pathogens. This research will be useful for the development of novel therapies and vaccines for important human and animal pathogens.

Other projects receiving funding at McGill University were in the areas of medical, health and environmental research.

L’université de Montréal received $21.2 million for 8 projects including:

- almost $4 million to establish an Integrated Laboratories Center for Nano-

Pharmaceutical and Soft Materials Research. The Center will prepare, characterize and assess materials that will lead to the next generation of drug delivery agents and diagnostic tools.
- $10.5 million pour le Réseau Québécois de calcul de haute performance (RQCHP) to provide infrastructure that will enable the creation of innovative research programs in a wide range of scientific endeavours. This investment will help the RQCHP to be competitive in this area internationally.

Laval University received $54.2 million for 18 projects including:
- $16.6 million to provide a centralized location and equipment for the Centre de recherché en optique-photonique. This centre will also be used to train personnel and provide assistance to private companies operating in this sector.
- $1.5 million to cover multi-disciplinary infrastructure costs related to studying the problems of obesity as well as possible treatments that could reduce cardiovascular or pulmonary problems associated with this condition.
- $1.1 million to the Atlantis Mobile Laboratory to assess environmental and human health impacts caused by environmental changes in remote coastal areas. Data collected by the Laboratory will be compiled and provided to local decision-makers and international agencies.
- $5.3 million to provide equipment to create a Centre multidisciplinaire de développement du génie tissulaire. This centre will serve as a research axis of international stature in the areas of tissue engineering and will generate major benefits through the improvement of health care for Canadians and national economic growth.

Other projects receiving funding at the Université de Laval were in the areas of medical, health agri-food, forestry and environmental research.

New Brunswick

A total of $3 million representing five projects at 2 institutions was invested in the province of New Brunswick.

The University of New Brunswick received $2.8 million for 4 projects including:
- $2.3 million to strengthen existing capabilities in materials imaging and analysis and establish an Institute for Materials at the University.
- $309,000 to purchase a confocal laser scanning microscope. This microscope, which captures three-dimensional images of cells, will enhance our current understanding of cell structure and function.

Le collège communautaire du Nouveau-Bruinswick recevra $187,000 pour acquérir des équippements informatiques et multimédias nécessaires pour engendrer l'interactivité éducative en éducation à distance.

Nova Scotia

A total of $5 million representing 7 projects at 4 institutions was invested in the province of Nova Scotia.

- Dalhousie University will receive $1.8 million to enhance research efforts at the Advanced Internetworking Laboratory, whose objective is to study the convergence of computing and communication.

- The Nova Scotia Agricultural College will receive $2.1 million to create an Atlantic Canadian Centre for Poultry Research. This research center will focus on all aspects of poultry production and will contribute to the advancement of research in the avian sciences on a global scale.

Prince Edward Island
A total of $3.7 million representing 3 projects at one institution (University of P.E.I.) was invested in the province of Prince Edward Island. These projects include:

- $2 million to create a state-of-the-art Centre for Comperative Biomedical Research which will expand the University's expertise in the areas of veterinary and human medical problems. It will also enable collaborations with two regional medical schools.
- $1.4 million to create the Institute for Interdisciplinary Research in Culture, Multimedia, Technology, and Cognition (CMTC). This Institute will investigate how multimedia can best enhance learning in a variety of cultural contexts.

Newfoundland and Labrador
A total of $4.6 million representing 4 projects was invested at Memorial University in the province of Newfoundland. These include:

- $1.8 million to develop a real-time Ocean Observatory at the Bonne Bay Marine Research Centre. This Observatory will seek to understand the influence of the physical environment on marine organisms.
- $1.5 million for the installation of a world-class facility for modeling, simulation and visualization in the areas of petroleum science and engineering.

Other projects receiving funding at the Memorial University were in the areas of environmental research.