



Ministry of Research and Innovation Research Programs

**FP7 Information Day
Toronto, March 12, 2007**



Ministry of Research and Innovation

- The Ministry of Research and Innovation (MRI) was established over one year ago to:
 - Develop and lead an integrated and coherent research and innovation agenda to deliver excellence, performance and results;
 - Align, coordinate and deliver Ontario research and commercialization programs to deliver the innovation agenda; and
 - Foster a culture of innovation and showcase Ontario's innovation excellence nationally and internationally.

Research Programs

- Research Programs
 - Ontario Research Fund - Research Excellence;
 - Ontario Research Fund - Research Infrastructure;
 - International Strategic Opportunities Program (ISOP)

- Research Talent Program
 - Early Researcher Award;

- Award Programs
 - Premier's Discovery Awards;
 - Premier's Catalyst Awards;
 - Post Doctoral Fellowship Awards;

- Youth Science and Technology Awareness Programs
 - Youth Science and Technology Program (YSTOP);
 - Teachers Service and Technology Outreach Program (TSTOP).

Research Excellence (ORF-RE)

Program Overview

- Focuses on scientific excellence and strong commercialization.
- Targets new, large-scale, leading-edge research initiatives.
- Currently operates with a five-year budget of \$287 million.
- At least one call for proposals per year.

Research Excellence (ORF-RE)

Program Status

- The ORF-RE recently completed its first round of competition.
- Sectoral breakdown of the Round one projects is as follows:
 - life sciences, biotech and agriculture 36.3%
 - information and communications technology 23.3%
 - materials science and advanced manufacturing 27.5%
 - fuel cells/alternative energy 10.5%
 - Agriculture 2.4%
- Approximately 165 Ontario and international researchers participated in the adjudication process for Round One.

ORF-RE ICT Funded Projects

- SHARCNET (Shared Hierarchical Academic Research) \$10.9M
 - Led by The University of Western Ontario;
 - Train High Performance Computing (HPC) personnel;
 - Increase network of computational resources;
 - Provide regional incubator to maximize HPC capabilities in research excellence and industrial development in Ontario.
- Innovative Research Using High Performance Computing (HPC) \$11.5M
 - Led by Queen's University;
 - Focus on providing researchers with secure HPC resources;
 - Train researchers in computing techniques;
 - Increase number of graduate students and post-docs in computational sciences;
 - Expand collaborations to include research networks across the country;
 - Outreach program for high school systems.



Research Infrastructure (ORF-RI)

Program Overview

- ORF-RI provides grants to match awards made by Canada Foundation for Innovation (CFI) to provide:
 - Major research infrastructure focused funding;
 - Grants to attract and retain researchers.
- The program currently operates with a five year budget of \$262M.
- Since the inception of the ORF program in fall 2004, the government has committed over \$130 million towards 550 infrastructure projects at 23 institutions across Ontario.


ORF-RI ICT Funded Projects

- *University of Toronto Systems Biology Through Machine Learning \$128,873*

Medical researchers at the University of Toronto who have extensive backgrounds in mathematics, statistics and computing intend to develop artificially-intelligent computer programs to predict gene function, paving the way for researchers without computational backgrounds to generate and test hypotheses about gene function. This will allow scientists to devise new tests, management techniques and possible cures for a variety of diseases.

- *Carleton University Biomedical and Biometric Sensors and Signal Analysis \$116,438*

Portable, non-invasive, low-cost biomedical monitoring devices that keep more accurate and reliable track of body functions such as heart rate promise safer home care. The devices are designed to perform repeated measurements on a specific patient, and make it possible to obtain a continuous picture of the patient's health.



International Strategic Opportunities Program

- The International Strategic Opportunities Program (ISOP) is a five-year program designed to facilitate new strategic international collaborations between Ontario research institutions and the global research community.
- Collaborations need to be part of an overall strategic project designed to further Ontario's research and innovation agenda.
- Program objectives are to:
 - Facilitate excellent research of scientific importance;
 - Increase Ontario's long-term economic potential;
 - Attract and retain top international research talent in Ontario; and
 - Enhance Ontario's profile in the international research community.

ISOP Program Focus

- The program is open to the following Ontario institutions:
 - Universities;
 - Affiliated research and teaching hospitals;
 - Colleges; and
 - Non-profit research institutions.
- The lead organization must be a not-for profit corporation.
- An institution or a consortium of institutions may apply jointly with their private sector partner(s), with one institution as lead applicant.
- The program will give priority to collaborations with researchers in the United States, the United Kingdom, Germany, France, Japan, China and India.
- Total maximum funding per research collaboration initiative will not exceed \$150,000 over three years.
- More information on ISOP can be found in the “Programs and Funding” section of the MRI website at www.mri.gov.on.ca.



Early Researcher Award Program

Program Overview

- The ERA program aims to attract and retain research talent in high-priority economic sectors by helping promising, recently-appointed Ontario researchers build their research teams of graduate students, post-doctoral fellows and research associates;
- ERA's are worth up to \$100,000, matched on a 2:1 basis by the research institution and/or private sector partner for eligible expenses;
- ERA currently operates with a five year budget of \$51M;
- To date \$16.8M has been awarded to 168 applicants for 2 funding rounds.



Early Researcher Award Program

- ERA funding is awarded on a competitive basis. ERA Peer review panels provide an expert evaluation on all eligible applications and make recommendations to the ORF Advisory Board.
- Sectoral breakdown of Round 2 projects is as follows:
 - life sciences health 44%
 - Information and communications technology 15%
 - materials and advanced manufacturing 16%
 - emerging technologies 6%
 - energy 1%
 - environmental 7%
 - Life sciences agriculture 12%
- Applications are judged according to the:
 - Excellence of the researcher
 - Quality of the research
 - Development of research talent
 - Alignment with priority sectors



Youth Science and Technology Outreach Program

Program Overview

- The Youth Science and Technology Outreach Program (YSTOP) supports projects that facilitate connections between research and technology mentors and high-school aged youth.
- The focus of the program is to engage youth living primarily in rural and remote communities and at-risk youth.
- Projects are developed and delivered by publicly funded researchers in collaboration with the science awareness community, and community-based partners such as local school boards.



Youth Science and Technology Outreach Program

Program Status

- Over the course of three rounds, 35 outreach projects have been approved for funding in the amount of \$4.2 million over three years.
- Through YSTOP projects now underway, it is anticipated that over 2,000 researchers, graduate students and technologists will mentor over 100,000 young people in hands-on science and technology activities across Ontario over the next three years.



Youth Science and Technology Outreach Program

- Mining Innovation, Rehabilitation and Applied Research Corporation (MIRARCO) has teamed up with Science Timmins to create a program that exposes young people to the information technology and natural resource sectors through the emerging field of data visualization.
- Using a science fair competition format, the students, working with scientists at Laurentian University and Science Timmins, develop their own research projects using virtual reality and simulation applications.



Teacher's Science and Technology Outreach Program

Program Overview

The Teachers' Science and Technology Outreach Program is a new initiative designed to advance teacher's scientific knowledge through their participation in on-going research at publicly-funded research institutions, and to assist teachers in disseminating this knowledge to their students.



Premier's Discovery Awards

Program Overview

- Four annual awards totaling \$1.5 million to recognize and profile innovation and achievement in:
 - Life sciences and medicine (\$0.5M)
 - Natural sciences and engineering (\$0.5M)
 - Social sciences and humanities (\$0.25M)
 - Innovation leadership (\$0.25M)
- The program is open to researchers who:
 - have a full-time appointment at the full professor level (or equivalent) at an eligible institution;
 - are currently conducting research in Ontario; and
 - are nominated for the award by the executive of their research institution.



Premier's Catalyst Awards

Program Overview

- Five annual awards of \$200,000 totaling \$1.0M for individuals and companies that have championed a commercially successful new, or significantly improved product or service based on a breakthrough technology.
- Awards will be made following a competitive process and will be judged on: the impact of the innovation; the contribution of the innovation to Ontario's economy, society and/or sustainable development; and the extent of national and international recognition of the innovation and its impact.
- This award is open on a competitive basis to: For-profit corporations headquartered in Ontario doing business in the province and employees or directors of for-profit corporations.
- Awards will be presented to:
 - Best Young Innovator (under 35 years)
 - Innovator of the Year
 - Lifetime Achievement in Innovation
 - Start-up Company with the Best Innovation
 - Company with the Best Innovation



Post Doctoral Fellowship Awards

- The Post-Doctoral Fellowship (PDF) program provides 47 outstanding young scientists with two-year fellowships at Ontario's research institutions.
- Under this matching program each PDF receives \$50,000 annually for two years (\$25,000 from MRI, \$25,000 from the institution)
- candidates will be evaluated based on the following:
 - past research and leadership achievements;
 - excellence and impact of the proposed research program;
 - ongoing/future research and leadership potential; and,
 - the alignment of their research activity with priority economic sectors: agriculture, materials and advanced manufacturing, life sciences, information and communications technologies, energy, environmental technologies and emerging technologies.



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