



NETWORKS OF CENTRES  
OF EXCELLENCE OF  
CANADA

# Excellence

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## INDUSTRIAL INTERNSHIPS WILL BOOST CANADA'S PRODUCTIVITY

ACCELERATE Canada is helping Canadian companies innovate, and giving university students hands-on experience on real-world problems. Administered by the Networks of Centres of Excellence, the program is a cornerstone of the government's new S&T strategy, which encourages more private sector investment in research and development.

The federal government has set its sights on stimulating innovation and productivity by placing 1,200 graduate students and post-doctoral fellows over the next two years with businesses across the country. The \$8.6-million ACCELERATE Canada program is the largest ever undertaken to strengthen industrial R&D in the country. The national consortium includes 13 Networks of Centres of Excellence led by MITACS (Mathematics of Information Technology and Complex Systems).

"This Government believes that to be globally competitive, Canada must develop the best-educated, most skilled and most flexible workforce in the world," said Industry Minister Jim Prentice, who announced the award on April 16. "These internships are another example of our commitment to support Canadian research and innovation and invest in our future economic success. The students will get valuable private sector experience, while Canadian business partners can tap into the skills, talent and creativity of our next generation of R&D superstars who will excel in our increasingly competitive world."

"Canada's real challenge is productivity. And while governments have implemented sound macro-economic policies, such as tax credits and incentive programs, private companies — especially those of small-and-medium size — have yet to fully embrace innovation. I consider it a cultural phenomenon and to change it, we'll have to work with one company at a time."

Dr. Arvind Gupta  
CEO and Scientific Director  
MITACS

Under the program, students work at a company for four or eight months on a research project designed by a university professor and the company. Companies cover one-half of the cost of each internship; ACCELERATE Canada and the appropriate provincial partner cover the remainder.

To get the word out to the private sector, ACCELERATE Canada employs more than a dozen business-development directors, who attend trade fairs and meet with individual entrepreneurs and executives.

"Under this model, everyone benefits," Dr. Arvind Gupta, CEO and scientific director of MITACS. "Companies keep whatever intellectual property comes out of the research. Universities establish valuable alliances with private-sector firms. Governments stimulate sustained growth, and students learn to develop and apply critical scientific skills in real-world settings."



Photo: MaRS Innovation  
Mike Wallace, MP for Burlington, ON, spoke at a June 20 event celebrating the launch of the MaRS Innovation CECR in Toronto. Full story inside.

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## INTRODUCING CANADA'S CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH

Canada has taken a major step to move promising research out of the lab and into the marketplace with the establishment of 11 new Centres of Excellence for Commercialization and Research (CECRs).

In the last *Excellence*, we profiled new centres in Sarnia, ON (Bioindustrial Innovation Centre), Montreal (IRIC/CECR in Therapeutics Discovery), Saskatoon, SK (Pan-Provincial Vaccine Enterprise), and Vancouver (Advanced Applied Physics Solutions Inc.).

In this issue, we look at how a CECR in Montreal is using genomics to develop personalized medical treatments, how a Vancouver centre is taking a multidisciplinary approach to prevent organ failure, and how institutions in Toronto are combining forces to accelerate the commercialization of research. (Full articles are available at [www.nce.gc.ca](http://www.nce.gc.ca).)

### ACCELERATING THE ARRIVAL OF PERSONALIZED MEDICINE Centre of Excellence in Personalized Medicine (CEPMed) Montreal, QC

CEPMed is applying the latest knowledge in genomics, biomarkers and clinical research to develop personalized approaches to preventing and treating disease.

Co-founded by the Montreal Heart Institute and Génome Québec with \$13.8 million in funding over five years from the CECR program, CEPMed will focus on diagnostic tests, medical treatments and tools to support drug development.

Pharmaceutical treatments work for many people, but adverse reactions and side effects can cause life-threatening problems and cost the health care system millions of dollars every year.

But there is a solution: personalized medicine, which uses genomics to target and refine treatments. Knowing more about a patient's genes and how they will react to a drug allows physicians to tailor their approach for each person. Canada has long been at the forefront in this field, but what's needed now is a more multidisciplinary approach.

"The best way to facilitate the transfer of knowledge into practical applications is to get scientists, entrepreneurs and medical professionals working together," says Kazimierz Babinski, Chief Executive Officer of CEPMed. "By fostering collaboration among academic and industrial experts, CEPMed can accomplish what none of them can working on their own: translate findings into effective tools and treatments."

### STEMMING THE TIDE OF A LETHAL EPIDEMIC CECR in the Prevention of Epidemic Organ Failure (PROOF) Vancouver, BC

Canada, like many nations, faces a devastating epidemic of organ failure. The leading cause of emergency-room visits in this country is lung failure, while heart failure outstrips all other causes of disability, illness and death. The estimated annual cost to the health care system of major organ failure is \$40 billion.



Kazimierz Babinski,  
CEO CEPMed

In response, the NCE has provided \$14.95 million over five years to PROOF – a consortium of computational and life scientists, caregivers, administrators and entrepreneurs determined to prevent, diagnose and treat organ failure.

Led by Dr. Bruce McManus, a world-renowned expert in heart disease, PROOF will also strive to address a central challenge of organ transplants: the inability to accurately predict how a receptor's immune system will react.

"While much of our research to date has focused on improving the recovery rates for people who suffer organ failure and receive transplants, PROOF gives us the opportunity to move way upstream: to identify populations at risk and develop treatments that prevent organ failure," says Dr. McManus.

### PARTNERSHIP BOOSTS TORONTO'S COMMERCIALIZATION POTENTIAL MaRS Innovation Toronto, ON

One-fifth of Canada's total research and development—one billion dollars worth — takes place within a few downtown Toronto blocks known as the Discovery District. Here you'll find the University of Toronto, the Hospital for Sick Children and the University Health Network, along with many more institutions responsible for Canada's international reputation for innovation.

Now, armed with \$14.95 million in five-year funding from the NCE, 16 institutions have joined forces under the banner of MaRS Innovation (MI) to accelerate the commercialization of research.

MI member institutions feature some of the world's finest researchers working in state-of-the-art facilities. This will enable MI to recruit top-notch managers and analysts accustomed to working at the interface of science and business.

"The partners who created MI are keen to take the next step and exploit the commercial potential of the research they conduct," says Tony Redpath, Vice-President of Partner Programs at MaRS. "For MI partners, this means that investments in research will yield greater returns. For Canada, this will lead to more economic activity and more jobs in the knowledge sector."



Dr. Bruce McManus,  
Director, PROOF