

# Report on Research

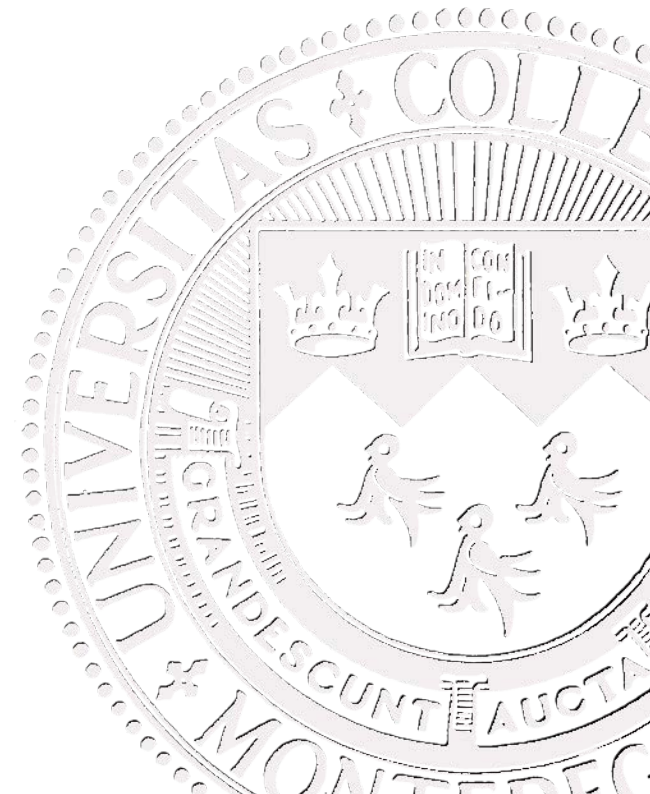
**Professor Denis Thérien  
Vice-Principal  
(Research and International Relations)  
VP-RIR**

**Senate  
May 7, 2008**



# Research is EXCITING!

- **Research** is the cornerstone of the knowledge-driven economy.
  
- **Research** today is:
  - Interdisciplinary
  - Inter-institutional
  - International
  - Invaluable



# Primary Responsibilities of the VP-RIR

- Serve as the University's main representative to academic, industrial and governmental organizations that have an influence on the development of research in Canada.
- Secure higher levels of support for all research activities of McGill colleagues.
- Oversee research services and policies at McGill.
- Lead efforts to commercialize research and bring McGill's discoveries to the rest of society.
- Contribute to McGill University's presence, visibility and influence abroad.
- Celebrate research excellence.



# OVP-RIR Achievements in 2007-08 (1)

## 1. Research Performance

- **Create conditions for success in the Research Hospital Fund (RHF) and CFI Round VI**
  - Submission of a comprehensive RHF application to fund research space and equipment at the new Glen Yards site – total value = \$250M
  - Building on post-mortem of Round V, implementation of a strengthened process for Round VI proposal development
- **Major Projects**
  - Genomics – coordinating efforts for major transformative project throughout the research community, both internally and across the province

## 2. Research Services

- **Restructuring of research operations and units**
  - Critical personnel recruited
  - Draft for restructuring prepared and under discussion
- **Stabilization of Animal Care Program**
  - CCAC : “probation” status upgraded to “compliant ” and certificate for good animal practice was re-instated
  - Animal care use program restructured
  - New leadership, animal policies



# OVP-RIR Achievements in 2007-08 (2)

## 3. Industrial Strategy

- Document generated and presented to P7
- Target industries identified and relationships in development

## 4. International Strategy

- VP-RIR active on Board and Steering Committees of Canada-California Strategic Innovation Partnership (CCSIP) and International Science & Technology Partnerships Canada (ISTP), promoting international research alliances
- Consultation held in February 08 to discuss international strategy



# Research = Collaboration

- **World First – Online Brain Imaging Database**

**Dr. Alan Evans**, MNI, and his team have compiled MRI scans and other data from hundreds of children, newborn to 18 years, from six US pediatric centres. This \$30-million NIH MRI Study of Normal Brain Development is now accessible online to researchers around the world. The MNI/McGill Team will be credited for years to come for their contribution to a myriad of future brain studies.

*“The way science is being done is increasingly collaborative on a global scale. It is exciting to see this database being used for so many studies.”* – Dr. Alan Evans

- **Going to the ends of the Earth – the South Pole Telescope**

**Prof. Matt Dobbs**, Physics, and fellow researchers from 8 U.S. institutions have successfully mounted the South Pole Telescope, capable of measuring Cosmic Microwave Background light left over from the explosive Big Bang.

*“We’ll be able to learn a lot about the expansion history of the universe -- how the universe grew and how it grew to be the way it is today.”* – Prof. Matt Dobbs

- **Integrating across space, time, and gender in the humanities for Chinese literary, historical and geographical databases**

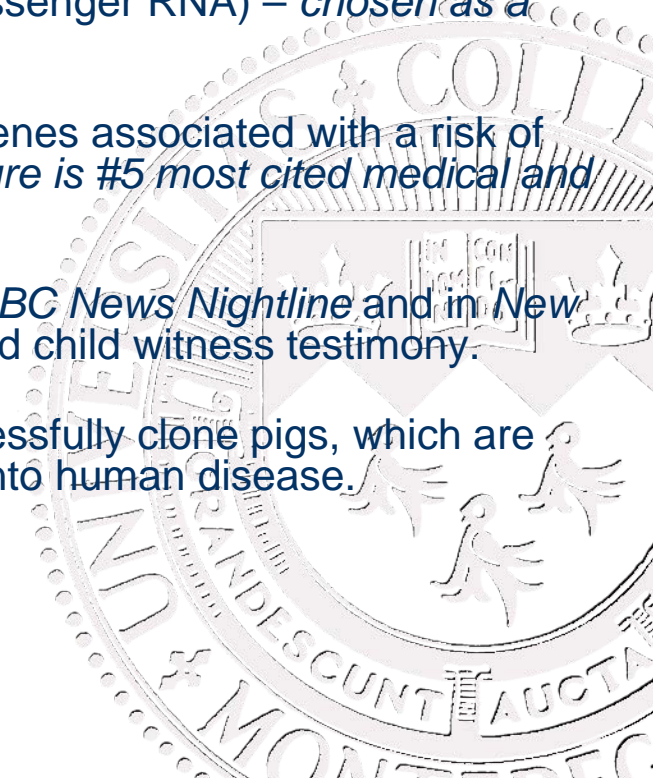
**Prof. Grace Fong** is aiming at integrating three databases to generate new knowledge about Chinese women writers:

- McGill-Harvard-Yenching Library Ming Qing Women’s Writings database (MQWW)
- China Biographical Database (CBDB, in progress)
- Pioneering online China Historical Geographical Information System (CHGIS)



# Celebrating Research Excellence

- **Applause 2008** – a celebration of McGill's research excellence!
- **Nahum Sonenberg** and **Thomas Duchaine**, McGill Cancer Centre, discover key element in the control of messenger ribonucleic acid (Messenger RNA) – *chosen as a Top 10 Discovery of 2007 by Quebec Science Magazine.*
- **Rob Sladek** and **Constantin Polychronakos** discover genes associated with a risk of developing Type 2 diabetes. *Their research paper in Nature is #5 most cited medical and scientific paper worldwide in 2007 (Science Watch).*
- **Victoria Talwar**, Faculty of Education, was featured on *ABC News Nightline* and in *New York Magazine*, for her research on children and lying, and child witness testimony.
- **Vilceu Bordignon**, Agriculture, is first in Canada to successfully clone pigs, which are one of the most appropriate animal models for research into human disease.

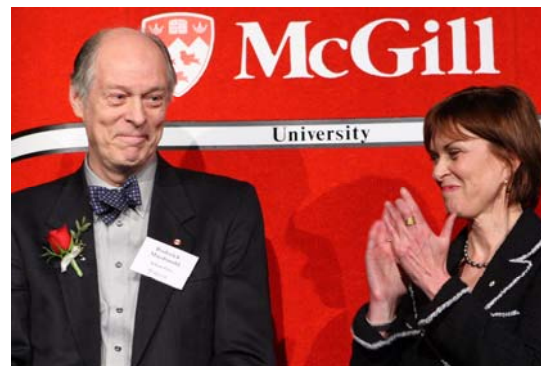


# McGill Laureates (partial list)

- ***Gairdner International Prize*** – Nahum Sonenberg (Biochemistry, McGill Cancer Centre)
- ***Herzberg Canada Gold Medal*** – Graham Bell (Evolutionary Biology), finalist
- ***Peter Lougheed CIHR New Investigator Award – Canada’s Premier Young Researcher***  
Michael B. Reed (Medicine)
- ***Royal Society of Canada Fellowships*** –  
Hong Guo (Physics); Michael J. Meaney (Psychiatry); Morag Park (Medicine);  
Patrick Selvadurai (Engineering); Isztar Zawadzki (Atmospheric & Oceanic Sciences)
- ***Royal Society of Canada Medals***



Victoria Kaspi –  
Rutherford Memorial Medal in Physics



Roderick Macdonald –  
Sir John William Dawson Medal in Law

## SSHRC Gold



Margaret Lock –  
Medicine



# McGill Laureates (partial list)

- **ACFAS Awards**

Victoria Kaspi (Physics)  
Donald Smith (Plant Sciences)  
Edith Hamel (Medicine)  
Marie-Ève Brault (LDI)



- **Killam Research Fellowships** – Stephen Smith (Law), Henri Darmon (Mathematics)
- **American Academy of Arts & Sciences** – Michael Petrides (Cognitive Neuroscience)



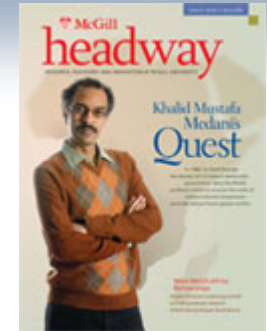
**National Order of Quebec**  
Michael J. Meaney



**Order of Canada** –  
Armand de Mestraf (Law)  
Margaret Becklake (Medicine)

# International Profile (1)

- A Special Report on research projects in Africa in the spring issue of **Headway** magazine
- McGill – a pole of attraction for international research talent through the Canada Research Chairs (CRC) Program:
  - ❖ Dr. Vassilios Papadopoulos
    - From Georgetown University School of Medicine
    - Currently Full Professor at the Department of Medicine and the Director of the MUHC Research Institute
    - Research on cholesterol and steroids
  - ❖ Dr. Florence Dzierszinski
    - From University of Pennsylvania
    - Currently Assistant Professor at the McGill Institute of Parasitology
    - Research on host–parasite interactions at the cellular and molecular level during infection by the global parasite
  - ❖ Dr. F. Jamil Ragep
    - From University of Oklahoma
    - Currently Full Professor at the McGill Institute of Islamic Studies
    - Research on scientific contributions of pre-modern Islam



## International Profile (2)

- **12<sup>th</sup> in the World!** – In 2007, the *Times Higher Education Supplement*, based in London, ranks McGill as Canada's top university and North America's best public university. McGill is the only Canadian university in the top 30.
- **Among Best in North America** – McGill is one of only two Canadian universities selected for the Princeton Review's annual guide of "The Best 366 Colleges."
- **Canada's Top Medical School** – Maclean's University Rankings again places McGill in #1 position among Canada's medical-doctoral universities.
- *"Research activities and the spinoffs of our university system help make Greater Montreal more competitive on the world stage. Montreal's universities can certainly be considered as extremely strategic assets."*

– Pierre Brunet, Chairman, Montreal International.

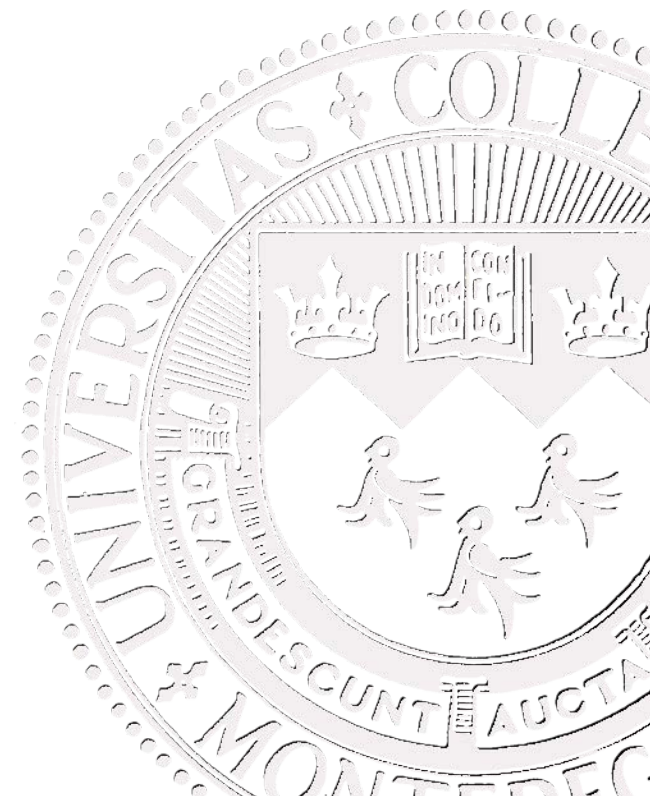
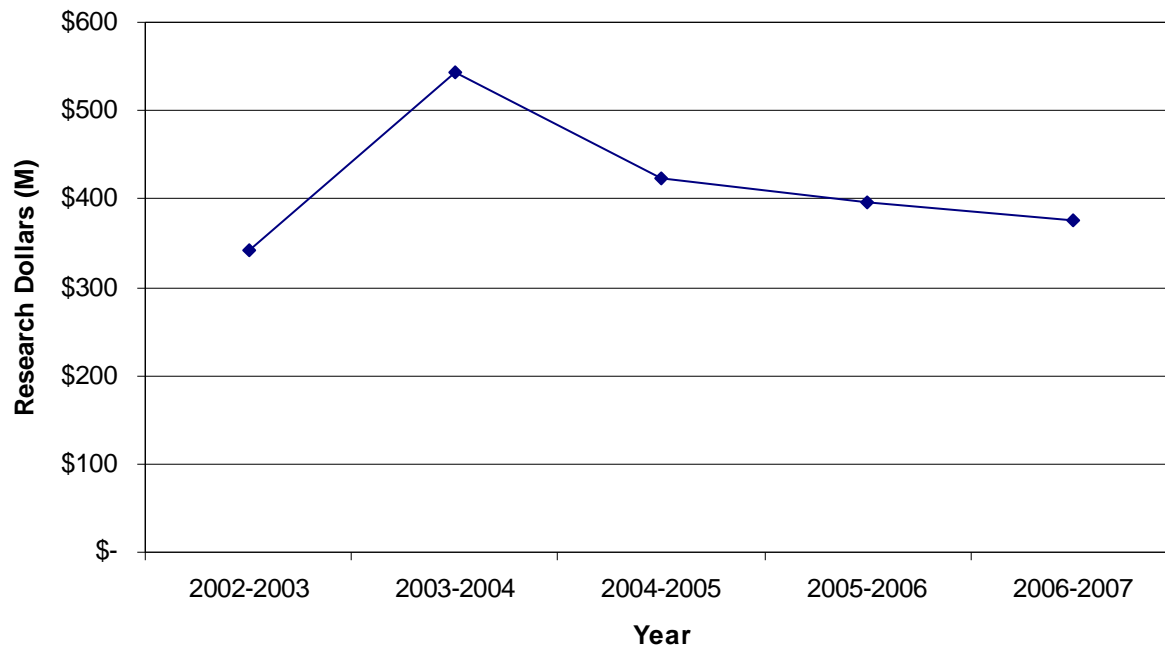


# Industrial Engagement

- McGill continues to strengthen its relationships with:
  - The Canadian Space Agency (CSA)
    - OVP-RIR coordinated two visits
    - goal: to develop a multi-disciplinary entity at McGill with CSA
    - possible domains: Medicine/Bio, Engineering, etc.
  - The Consortium for Research and Innovation in Aerospace in Quebec (CRIAQ)
    - McGill, MDEIE and CRIAQ collaborated on two international missions
    - aim: to foster linkages between the research community and the aerospace industry
    - McGill is currently involved in three major CRIAQ projects, two of which have McGill PIs
  - The National Research Council Canada (NRC)
    - Engagement of two main NRC laboratories in the Montreal area: IMI and BRI
- The Ville de Montreal has approved \$125K of seed funding for the **Excellerator Project** (MUHC-McGill entity to facilitate technology transfer and valorization)
- \$10M gift from Hydro-Québec to support research in Engineering, Science and Law



# Year-Over-Year Sponsored Research at McGill University



# Natural Sciences and Engineering Research Council (NSERC) Funding

## NSERC 2002-2003

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	24,859	5.7
<b>G4</b>	125,512	19.8
<b>G13</b>	282,664	8.8

## NSERC 2006-2007

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	33,111	5.7
<b>G4</b>	158,335	20.9
<b>G13</b>	360,950	9.2

# Social Sciences and Humanities Research Council (SSHRC) Funding

## SSHRC 2002-2003

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	4,068	4.0
<b>G4</b>	32,903	12.4
<b>G13</b>	61,892	6.6

## SSHRC 2006-2007

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	8,791	6.0
<b>G4</b>	42,673	20.6
<b>G13</b>	80,497	10.9

# Canadian Institutes of Health Research (CIHR) Funding

## CIHR 2002-2003

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	57,177	12.8
<b>G4</b>	233,747	24.5
<b>G13</b>	388,597	14.7

## CIHR 2007-2008

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	84,207	12.8
<b>G4</b>	354,741	23.7
<b>G13</b>	568,181	14.8



# Cumulative G13 Canada Foundation for Innovation (CFI) Awards 1998-2006

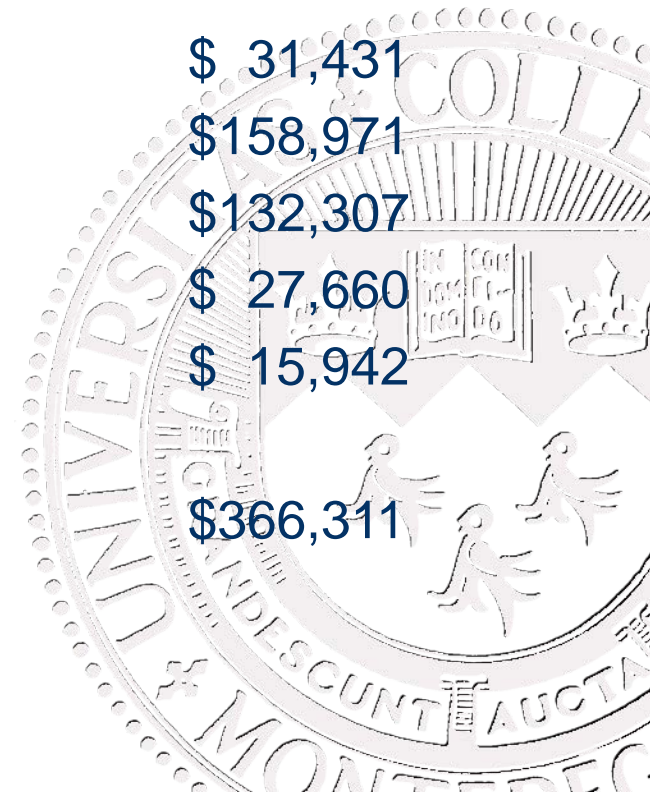
University ( <i>includes affiliated hospitals and schools</i> )	CFI Cumulative Award	% Total
U of T	\$803,392,105	15.5%
UBC	\$673,164,658	13.0%
UdeM	\$652,700,150	12.6%
<b>McGill</b>	<b>\$467,950,453</b>	<b>9.0%</b>
Alberta	\$449,664,845	8.7%
Laval	\$399,612,385	7.7%
Western Ontario	\$349,414,077	6.7%
McMaster	\$287,477,757	5.5%
Calgary	\$265,516,980	5.1%
Ottawa	\$262,496,890	5.1%
Waterloo	\$252,894,870	4.9%
Queen's	\$232,077,955	4.5%
Dalhousie	\$94,573,280	1.8%
<b>G13 Total</b>	<b>\$5,190,936,405</b>	

## Canada Foundation for Innovation (CFI) Infrastructure Funding (thousands \$)

78% of cumulative total (\$366,311) has been awarded via five distinct competitive “rounds” on infrastructure funding:

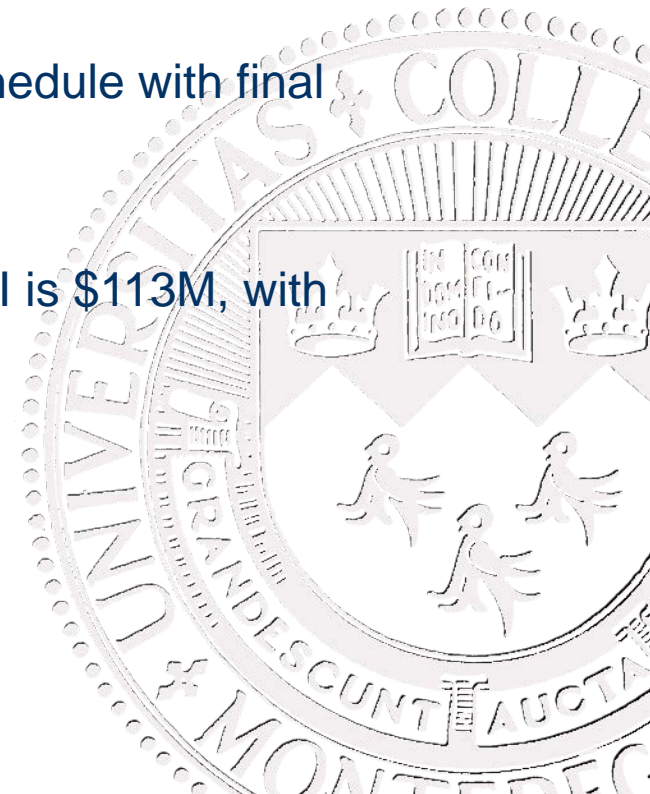
- *Round 1* - 15 projects approved: \$ 31,431
- *Round 2* - 22 projects approved: \$158,971
- *Round 3* - 9 projects approved: \$132,307
- *Round 4* - 2 projects approved: \$ 27,660
- *Round 5* - 2 projects approved: \$ 15,942
  
- Overall: 50 projects approved: \$366,311

22% (\$101,639) awarded via other CFI programs



## CFI Round VI Proposal Development Steps

- OVP-RIR demonstrated leadership in implementing a strengthened process for Round VI proposal development
- The office is closely monitoring a rigorous schedule with final submission to CFI in October 08
- McGill's envelope for applications in Round VI is \$113M, with a potential total project value of \$282.5M



# Fonds de la recherche en santé du Québec (FRSQ) Funding

## FRSQ 2004-2005

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	18,529	
<b>QG4</b>	68,725	27.0
<b>Total</b>	82,888	22.4

## FRSQ 2006-2007

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	17,346	
<b>QG4</b>	68,232	25.4
<b>Total</b>	82,317	21.1

# Fonds québécois de la recherche sur la société et la culture (FQRSC) Funding

## FQRSC 2004-2005

	Funding (in thousands \$)	
	Total \$	McGill % of Total
McGill	1,583	
QG4	12,315	12.9
<b>Total</b>	<b>22,845</b>	<b>6.9</b>

## FQRSC 2007-2008

	Funding (in thousands \$)	
	Total \$	McGill % of Total
McGill	1,993	
QG4	14,177	14.1
<b>Total</b>	<b>25,708</b>	<b>7.8</b>

# Fonds québécois de la recherche sur la nature et les technologies (FQRNT) Funding

## FQRNT 2004-2005

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	4,836	
<b>QG4</b>	18,096	26.7
<b>Total</b>	22,888	21.1

## FQRNT 2007-2008

	Funding (in thousands \$)	
	Total \$	McGill % of Total
<b>McGill</b>	5,561	
<b>QG4</b>	18,338	30.3
<b>Total</b>	22,812	24.4

# OVP-RIR Goals for 2008-09

## 1. Research Performance

- Policy review as it intersects with research
- Data integration and improved analytics with our decanal colleagues
- Continued promotion of leading edge research in concert with provincial and federal S&T strategies and priorities
- Celebration of excellence (prizes, impact articles, etc.)

## 2. Research Services

- Finalize design and timeline of research services restructuring plan

## 3. Industrial Strategy

- Revise IP policy
- Continue efforts to brand McGill as an excellent industry partner

## 4. International Strategy

- Coordinate forthcoming missions to the Middle East and Asia
- Host CCSIP summit
- Continue to pursue opportunities that would enhance the impact of the university

