



University of Toronto

OFFICE OF THE VICE-PRESIDENT, RESEARCH AND ASSOCIATE PROVOST

TO: Committee on Academic Policy and Programs

SPONSOR: John Challis

DATE: November 30, 2004 for December 8, 2004

AGENDA ITEM: 7

ITEM IDENTIFICATION:

Annual Report of the Vice-President, Research and Associate Provost, 2003-2004

JURISDICTIONAL INFORMATION:

The Committee has the responsibility to receive the Vice-President's Annual Report on behalf of governance.

PREVIOUS ACTION TAKEN:

The *Annual Report* for 2002-2003 was received by AP&P at its meeting of October 15, 2003

FINANCIAL AND/OR PLANNING IMPLICATIONS:

n/a

RECOMMENDATION:

For information only.

Office of the Vice-President, Research & Associate Provost

*2003-2004 Report
2004-2005 Plans*



University of
Toronto

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*The mandate of Office of the Vice-President,
Research and Associate Provost is to create a
research environment that is supportive of the
highest quality research stature by
maximizing opportunities for funding,
recruiting the highest calibre faculty and
trainees, and providing an infrastructure and
environment conducive to outstanding
individual and interdisciplinary investigation
and to opportunities for broad application.*

Dear Colleagues:

I am delighted to introduce the Annual Research Report, 2003-04 for the University of Toronto.

This truly has been an outstanding year. As a university, we have continued to increase our overall level of external research funding. Our colleagues have been recognized with an increased share of prestigious national and international awards. We have enhanced our advocacy efforts at different levels. We have begun to develop and use performance indicators that show our true international research standing.

Colleagues at the University of Toronto and affiliated institutions, including the teaching hospitals, received about \$600 million direct research support last year. Allowing for contributions to indirect costs of research and the salaries of our researchers, the value of our research enterprise exceeded \$1 billion in 2003-04. Put another way, at U of T, we conduct more than \$3 million worth of research every day. Our research budget exceeds that of each of the federal research councils and of the National Research Council (NRC).

We have a proud tradition that our researchers are also teachers and clinicians. Thus, this extraordinary level of investigative activity has a direct impact on students at the undergraduate and graduate level and in our professional schools. We are developing plans to build on this relationship between world-class research and the enhanced student experience.

During this past year, we created the U of T Research Advisory Board (RAB) to bring together on a regular basis the academic leadership of all three campuses, a cross-section of faculties and partner institutions. The RAB is becoming a forum for information exchange and a vehicle to discuss research and provide me with advice on critical and emerging issues.

Within the portfolio, we established the position of Associate Vice-President, International Research and Development to help build international research partnerships and opportunities. We created a new position of Director of the Ethics Review Office, to emphasize the importance of this activity to all our research endeavours. We also created the joint position of Director, Government Liaison with the Office of the Vice-President, Government and Institutional Relations to facilitate and improve the effectiveness of our relationships with government in Ottawa, Queen's Park and City Hall, and with leading research agencies.

This report provides detailed information about the research enterprise at the U of T. Let me highlight here some other key accomplishments:

- We developed a strategic plan for research, and integrated it with Stepping UP
- Colleagues achieved record levels of research funding from the Tri-Councils, from federal and provincial programs, and from the not-for-profit sector
- Our efforts in commercialization and innovation have been increased through interactions with organizations such as the Toronto Regional Research Alliance, MaRS, and our review of the Innovations Foundation
- We have implemented the indirect costs recovery program

- U of T held successful recognition events for SSHRC, NSERC, CRC and CFI programs
- The University developed a process to provide informed commentary on the SSHRC transformation process
- We are developing performance indicators of research activity. These show us in a leading position among all AAU and G10 universities in terms of numbers of publications and numbers of citations

Our achievements in research and our focus on excellence reflect the standard set by past President Robert Birgeneau, and the drive and enthusiasm of colleagues, students, trainees and staff across our campuses. This success has formed a marvellous platform from which we shall continue to build the research enterprise at the University of Toronto.

Yours sincerely,



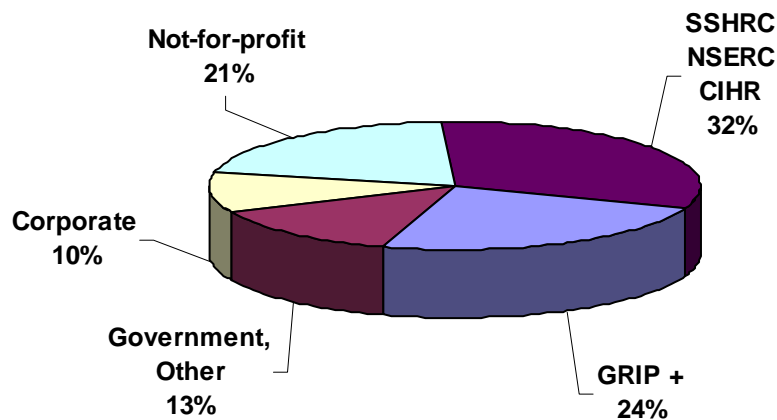
John R. G. Challis, DSc, FRSC
Vice-President, Research and Associate Provost
Professor, Department of Physiology, Obstetrics and Gynaecology and Medicine

RESEARCH PERFORMANCE AT THE UNIVERSITY OF TORONTO

Overall Performance

Research funds awarded to the University of Toronto and affiliated hospitals for use in 2002-03 totalled \$563 million, of which \$288 million was awarded to U of T and \$275 million to the affiliated hospitals. The combined funding amount represents a \$46 million increase over 2001-02. Funding from all governmental agencies makes up 69% of the total.

Research Funds Awarded by Sector
University of Toronto, Including Affiliates, 2002-03
Total: \$563M



"GRIP+" includes the Canada Research Chairs program, the Canada Foundation for Innovation, the Ontario Research and Development Challenge Fund, the Ontario Innovation Trust, the Ontario Genomics Institute, the Premier's Research Excellence Awards, and the Ontario Research Performance Fund.

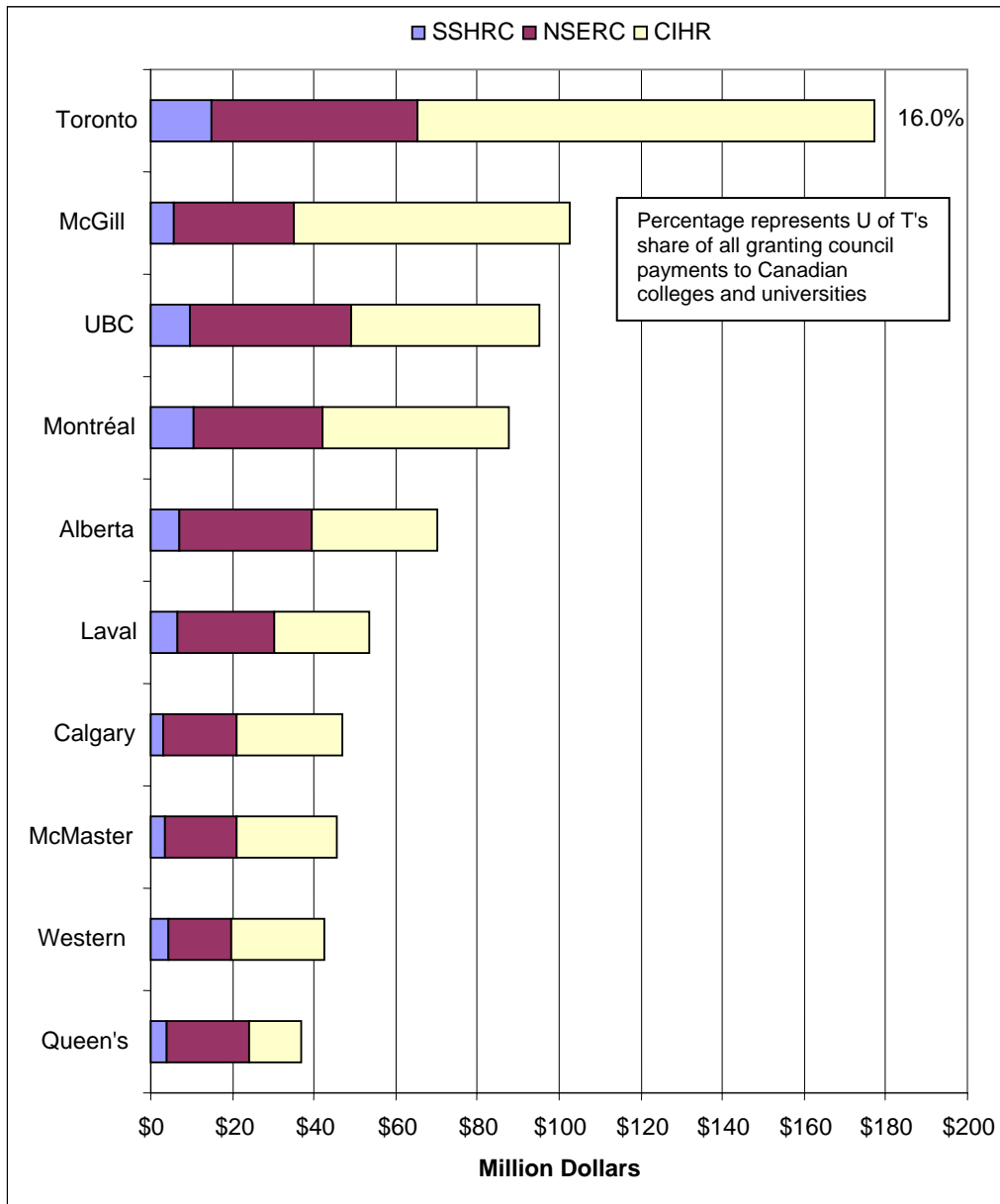
"Government, Other" includes the Networks of Centres of Excellence, the Provincial Centres of Excellence, Health Canada, Public Works & Government Services Canada, the National Institutes of Health, and several other agencies.

"Not-for-profit" includes foundations, societies, associations, and institutions.

FUNDING FROM THE FEDERAL RESEARCH COUNCILS

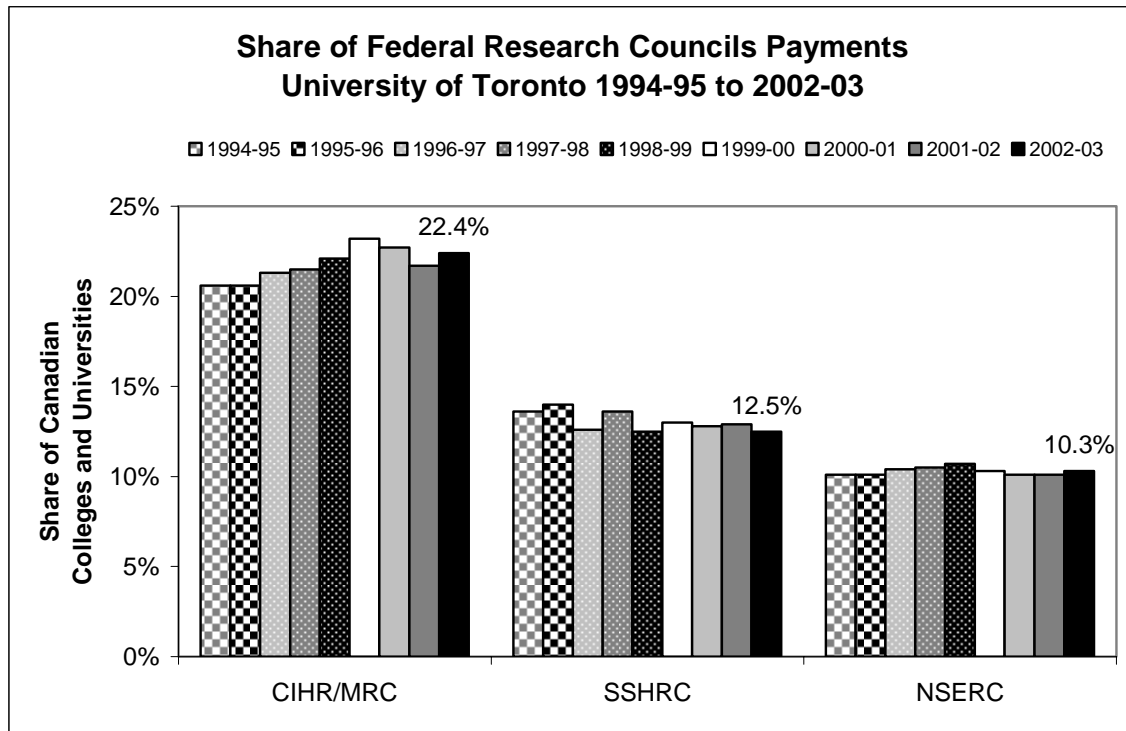
The University of Toronto continued to perform well in the major competitions of the three federal granting councils. The university maintained its #1 ranking in overall funding from all three councils and from each individual council for the 10th consecutive year. By contrast, second ranks went to three different universities: the Université de Montréal for SSHRC, UBC for NSERC, and McGill for CIHR, highlighting the consistently strong presence of U of T in all areas of research in Canada.

Federal Research Council Payments
Top Ten Canadian Universities, 2002-2003



Top ten universities determined by total funding from the three councils in 2002-03 (SSHRC: Social Sciences and Humanities Research Council; NSERC: Natural Sciences and Engineering Research Council; CIHR: Canadian Institutes of Health Research). Figures include funding from affiliated and federated institutions. Figures exclude funding for the Networks of Centres of Excellence, and the Canada Research Chairs program.
Source: Councils' annual reports.

Although the University of Toronto's funding from the federal granting councils has continued to increase for the past number of years, it is important to examine these increases in the context of the councils' total funding of Canadian colleges and universities. In 2002-03, U of T's share increased to 22.4% for CIHR and 10.3% for NSERC, while it decreased to 12.5% for SSHRC. More importantly, however, the pattern for each council since 1994-95 illustrates that the increases merely represent making up for lost ground, in the case of CIHR and NSERC, while the SSHRC decrease appears to be part of a slow progressive decline.



Funding for the Networks of Centres of Excellence and the Canada Research Chairs program are excluded.
Source: Councils' annual reports

Government Research Infrastructure Programs (GRIP)

In 2003-04, the University of Toronto and its affiliated institutions exceeded the \$1 billion mark in cumulative research funding obtained through the Canada Foundation for Innovation (CFI), Canada Research Chairs (CRC), Genome Canada/Ontario Genomics Institute (GC/OGI), Ontario Innovation Trust (OIT), Ontario Research and Development Challenge Fund (ORDCF) and Premier's Research Excellence Awards (PREA) programs.

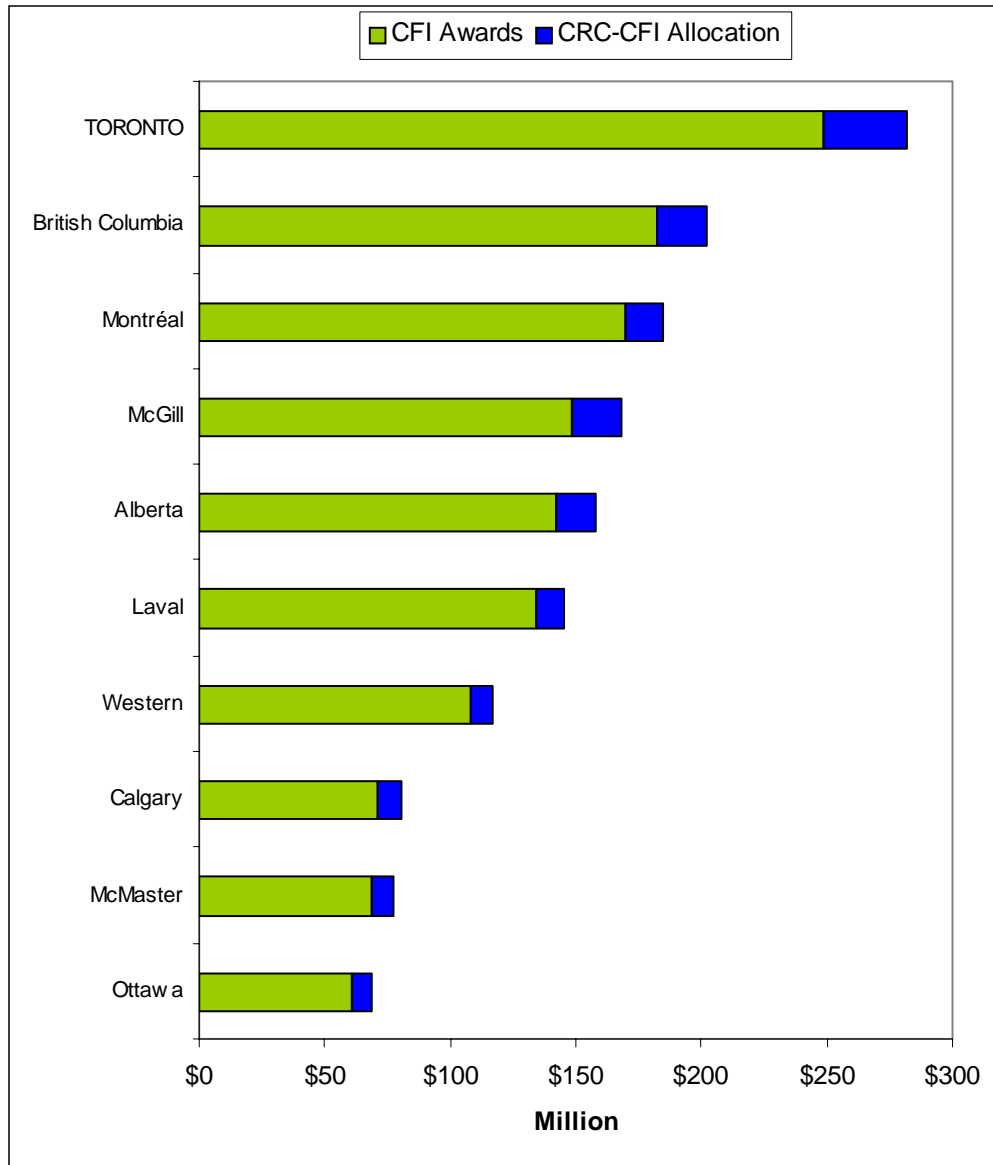
These programs provide research funding for both established and newer faculty and their graduate students.

GRIP Awards May 1, 2003 – April 30, 2004 in millions

CRC	\$ 41.80	M ¹
CFI	\$ 57.26	M ²
GC/OGI	\$ 3.04	M ³
ORDCF	\$ 15.00	M ³
OIT	\$ 40.57	M ^{3,4}
PREA	\$ 1.20	M ⁵
TOTAL Funding	\$ 158.88	M

- 1 Awards from April, September, December 2003 submission dates. Assumes \$200K/year for seven years for Tier I and \$100K/year for five years for Tier II awards. Does not include expected renewals of these awards. To date 172 awards have been granted out of the allocation of 267, based on University of Toronto granting council performance.
- 2 Includes New Opportunities awards (\$5.39M) from June, September, December 2003, February 2004 submission dates and infrastructure awards to CRC holders (\$3.83M) from April, September and December 2003 submission dates, three Career awards (\$0.97M), Innovation Fund awards (\$31.64M), Exceptional Opportunities award (\$7.20M) and Infrastructure Operating Funds (\$8.23M)
- 3 Funding listed above includes ORDCF award for the Structural Genomics Consortium
- 4 Includes CFI matching awards for Innovation Fund (\$32.70M), Career Awards (\$0.97M), New Opportunities (\$3.46M) from June, September & December 2003, and Ontario Distinguished Researcher Awards from April & September 2003 competitions (\$3.44M)
- 5 Includes awards from Round 10 (October 2003)

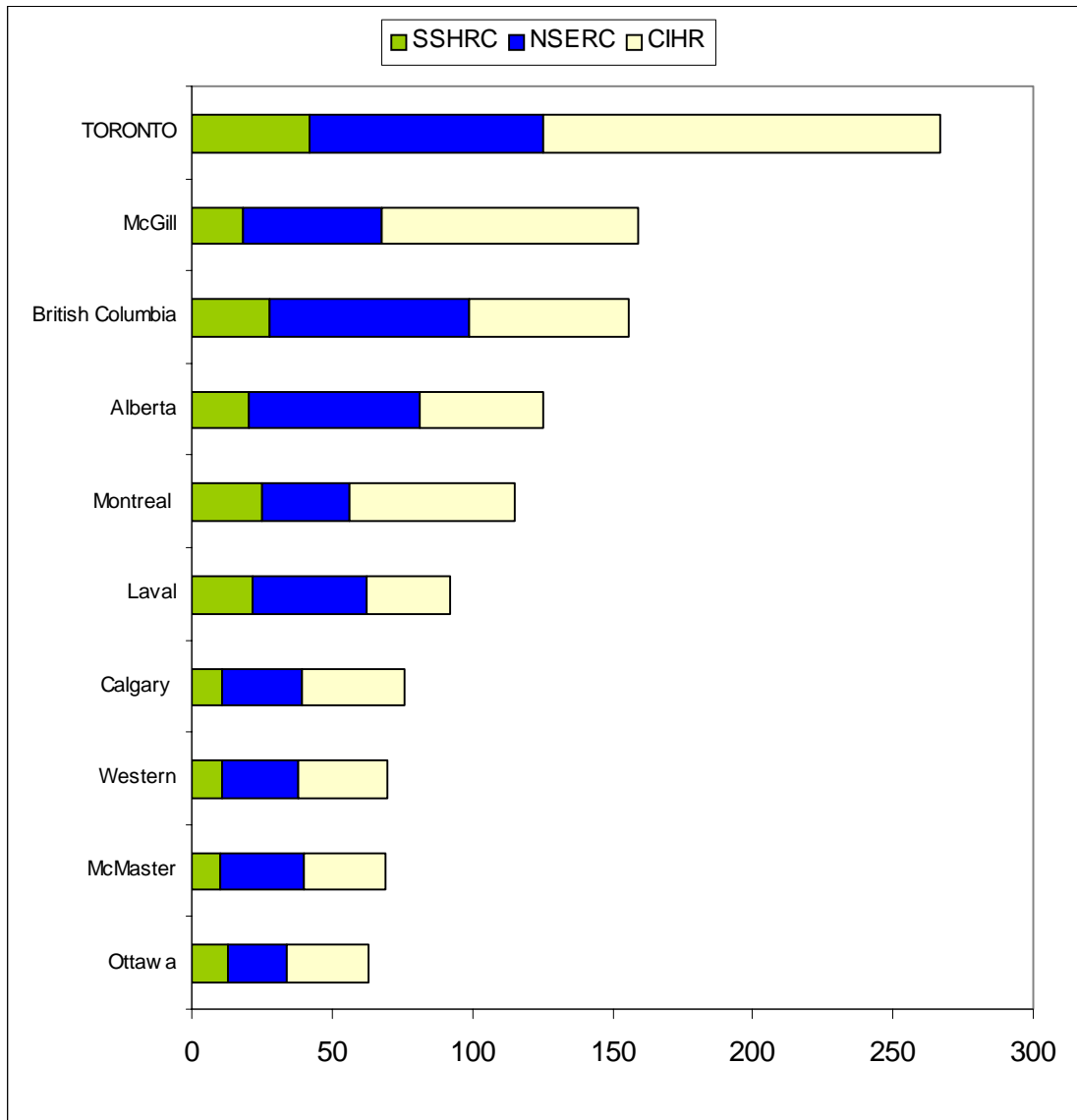
Canada Foundation for Innovation
 Awards from Inception (1998) to March 2004 and Funds Allocated
 Top 10 Institutions



Sources:
 For awards to March 8, 2004: CFI website
 For CRC-CFI allocation: CRC website

Notes:
 National Strategy Awards are excluded
 Affiliates are counted with parent institution

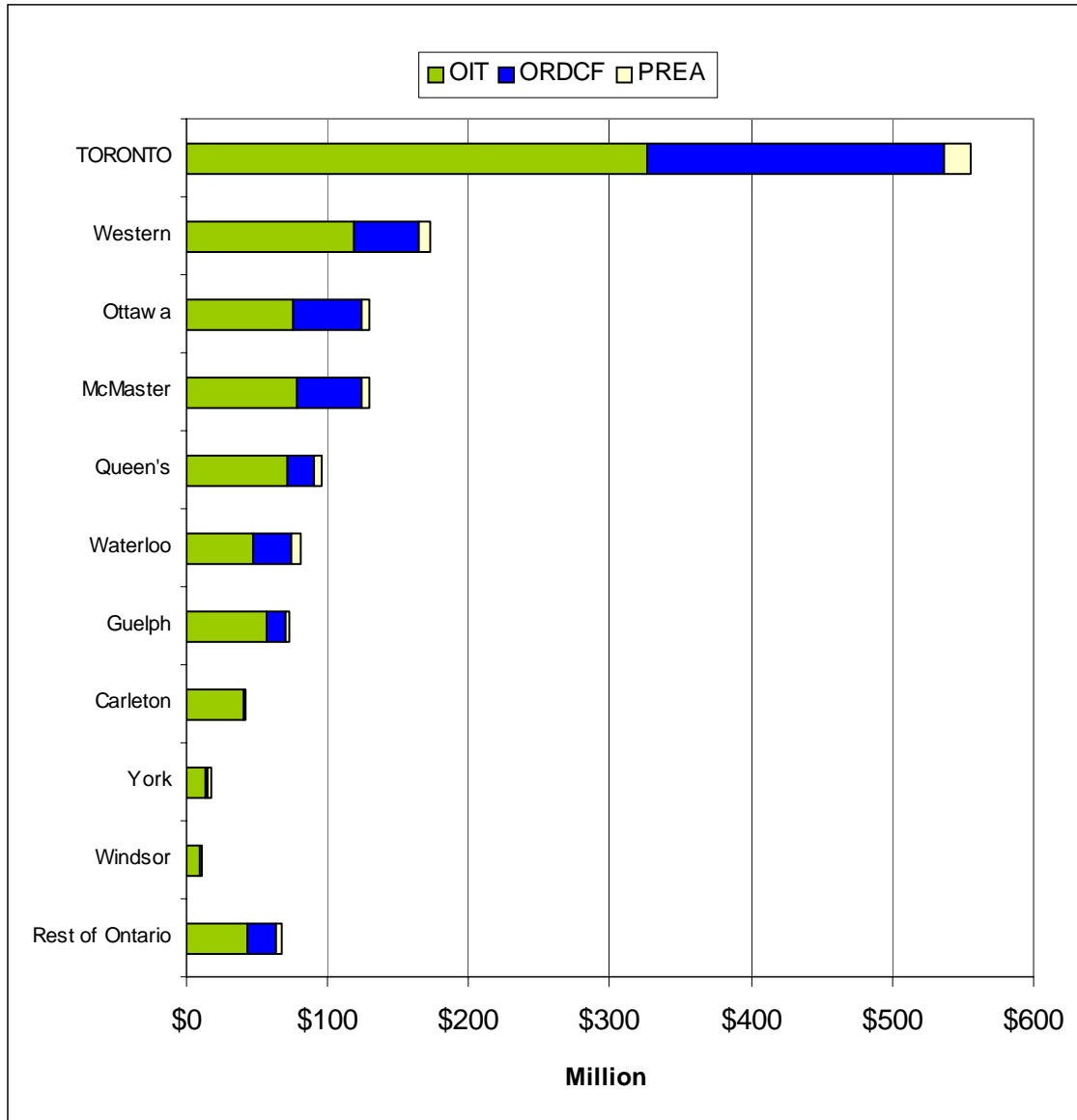
Canada Research Chairs Allocation to Top 10 Universities Years 1 to 5 (2000-2005)



Source: CRC website
Affiliates are counted with parent institution

Ontario Government Research Infrastructure Programs

Awards to Date - Top 10 Universities



Sources: OIT, ORDCF, PREA websites, ORDCF annual reports 1998, 1999, 2000, 2001
 PREA Round 1-9, estimating awards of \$100,000 each
 ORDCF awards from inception to Dec 31, 2001
 OIT awards from inception to July 6, 2004
 Data limited to colleges, universities and their affiliates (excludes Perimeter Institute for Theoretical Physics and Explorer Research Institute)

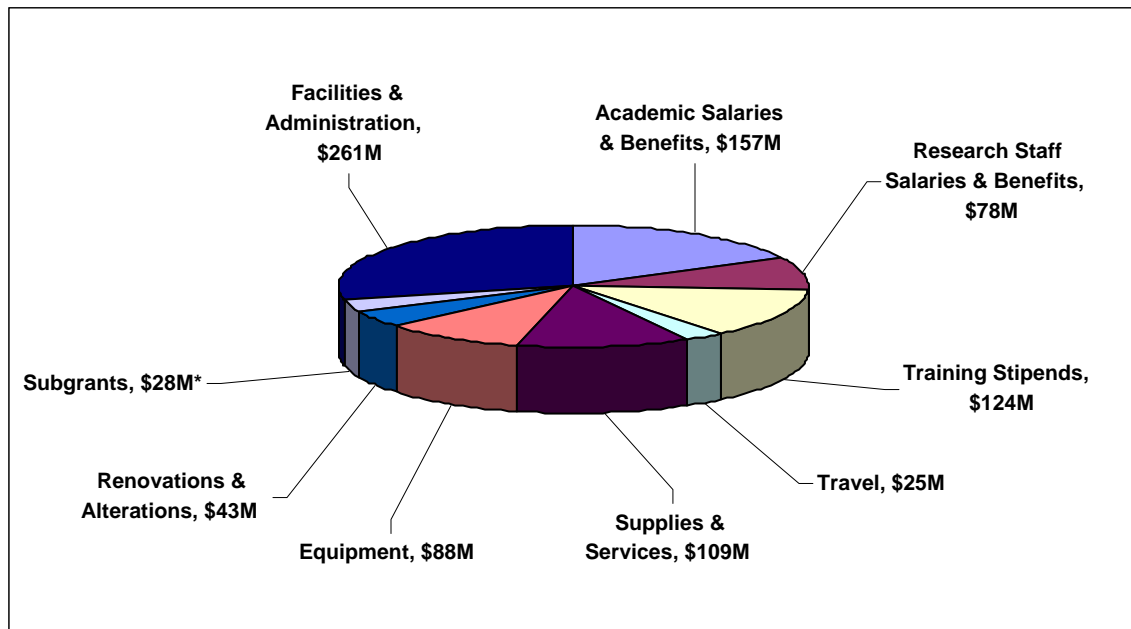
Economic Impact of Research

Economic impact studies done in California and Massachusetts have demonstrated that university research is a key contributor to fuelling local economic engines. Expenditures on research activities at the University of Toronto and affiliated institutions totalled nearly \$1 billion in 2002-03.

Close to 60 % of these expenditures went to payroll. Assuming that half of salaries represents disposable income spent locally, \$400 million was injected into the local economy (once the multiplier effect is taken into account). Another 40 % was used to purchase supplies and services. Assuming that 65 % of these were obtained locally, purchases of research supplies and services injected another \$400 million (with multiplier) into the local economy, for a grand total of \$800 million.

Research Expenditures 2002-03

University of Toronto and Affiliates
Total \$914 Million



Academic salaries include those funded directly from research grants plus 40% of the academic salaries expenditures for U of T.

Facilities and administration costs were calculated as 40% of all direct research expenditures.

*Subgrants represent funding transferred elsewhere in Canada

International Comparison of Research Performance

The University of Toronto aims to be among the world's best public research and teaching universities. Its current presence and impact can be assessed based on numbers of scholarly publications and citations in the most recent five-year period for which data are available (1998-2002), compared to the top research universities in the United States and Canada (those belonging to the American Association of Universities and the Canadian G10 group).

The two large graphs on pages 13 and 14 show all the public institutions belonging to these groups, while the inset charts show the top 10 when including the private institutions. The table below summarizes U of T's rankings in a larger study where 85 fields of research were aggregated into four disciplinary groupings.

Summary of Rankings for the University of Toronto, 1998-2002 Among Public and All AAU and G10 Universities

	Publications		Citations	
	Public (n=44)	All (n=70)	Public (n=44)	All (n=70)
All Fields	1	2	2	5
Health Sciences	1	2	1	3
Other Life Sciences	3	5	3	9
Computer Science & Engineering	15	18	13	22
Other Physical Sciences	15	20	17	28

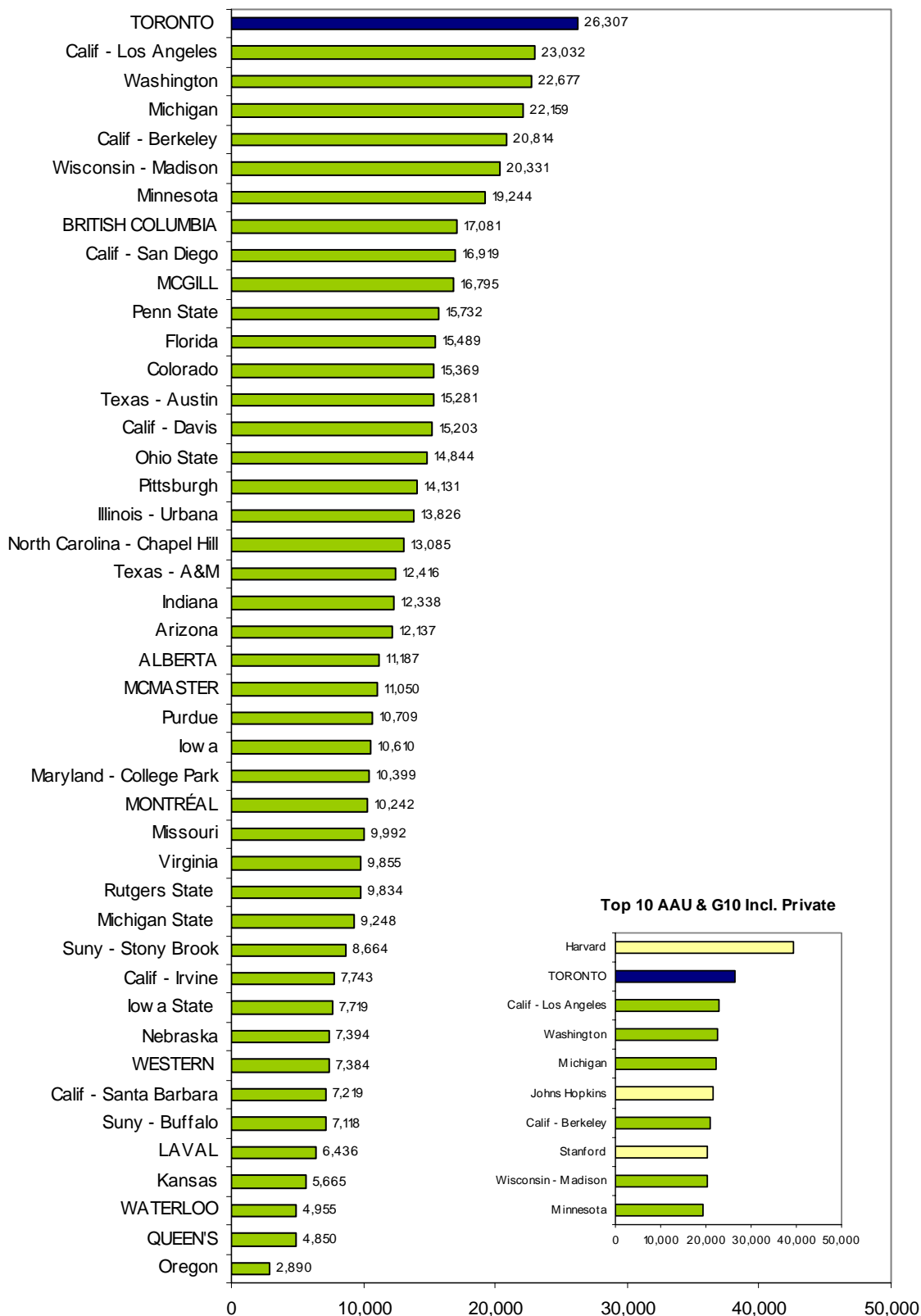
Sources:

Institute for Scientific Information (Thompson Scientific) Canadian University Science Indicators for 1981 to 2002

Institute for Scientific Information (Thompson Scientific) U.S. University Science Indicators for 1981 to 2002

"n" refers to number of institutions

Number of Publications Indexed by ISI AAU and G10 Public Institutions, 1998-2002 All Fields



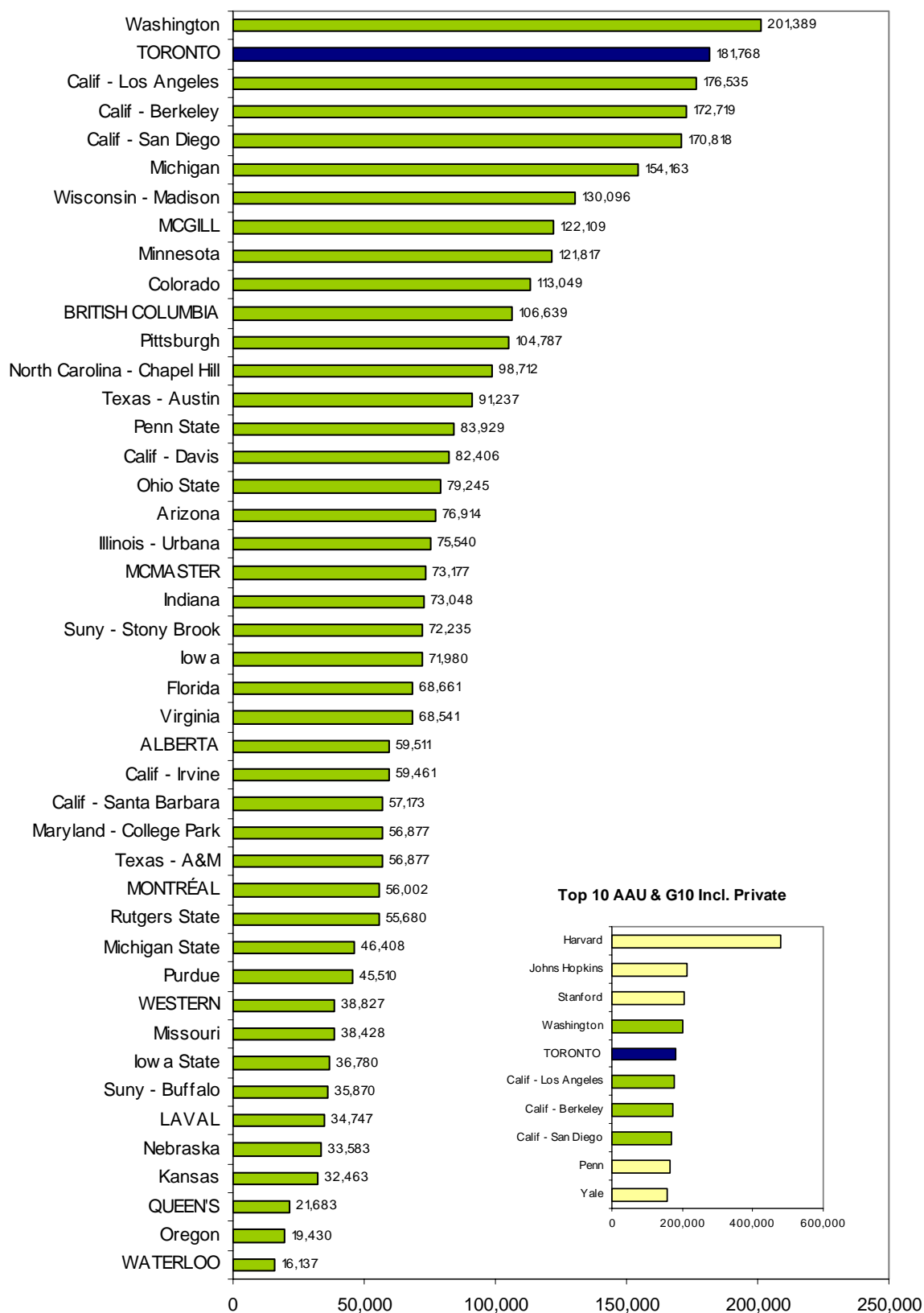
Canadian G10 universities listed in capital letters

Sources:

Institute for Scientific Information (Thompson Scientific) Canadian University Science Indicators for 1981 to 2002

Institute for Scientific Information (Thompson Scientific) U.S. University Science Indicators for 1981 to 2002

Number of Citations Indexed by ISI AAU and G10 Public Institutions, 1998-2002 All Fields



Canadian G10 universities listed in capital letters

Sources:

Institute for Scientific Information (Thompson Scientific) Canadian University Science Indicators for 1981 to 2002

Institute for Scientific Information (Thompson Scientific) U.S. University Science Indicators for 1981 to 2002

Selected Scholarly Awards, Prizes & Honours 2003-2004

American Academy of Arts & Sciences

Membership in the American Academy – which includes more than 150 Nobel laureates and 50 Pulitzer Prize winners – recognizes outstanding intellectual achievement, leadership and creativity in all fields. The following U of T faculty member is a 2004 honorary member:

Anthony Pawson – Medical Genetics and Microbiology; Samuel Lunenfeld Research Institute at Mount Sinai Hospital

American Institute of Chemical Engineers Fellow

Founded in 1908, this non-profit organization represents 57,000 members in industry, academia and government and provides leadership in advancing the chemical engineering profession.

Michael Sefton, Institute of Biomaterials and Biomedical Engineering

Canadian Association of Geographers Award for Scholarly Distinction in Geography

This award recognizes a member of the CAG for outstanding scholarly work in geography either in the form of sustained contributions over a number of years or as a single major research contribution.

Edward Relph, Geography (University of Toronto at Scarborough)

Canadian Women's Studies Book Award

Given by the Canadian Women's Studies Association, this annual award acknowledges the important contributions scholars of women's studies have made to the field.

Aysan Sev'er, Social Sciences (University of Toronto at Scarborough)
Fleeing the House of Horrors: Women Who Have Left Abusive Partners, University of Toronto Press, 2002

C.B. MacPherson Prize

Awarded by the Canadian Political Science Association, this prize recognizes what is deemed the best book of the past two years in the field of political theory.

Duncan Ivison, Political Science (University of Toronto at Scarborough)
Postcolonial Liberalism, Cambridge University Press, 2002

Clara Benson Award

Given by the Canadian Society for Chemistry, this award is presented annually to a woman who has made a distinguished contribution to chemistry while working in Canada.

Eugenia Kumacheva, Chemistry

Chemical Institute of Canada Medal

Given by the Chemical Institute of Canada, this medal is a mark of distinction and recognition for an outstanding contribution to the science of chemistry or chemical engineering in Canada.

Mitchell Winnick, Chemistry

E.W.R. Steacie Award in Chemistry

Given by the Canadian Society for Chemistry, this award is presented annually to a scientist who has made a distinguished contribution to chemistry while working in Canada.

Michael Thompson, Chemistry

Guggenheim Fellowship

The U.S.-based John Simon Guggenheim Memorial Foundation provides fellowships across the disciplines for advanced professionals who have demonstrated exceptional accomplishment in their fields.

David Zingg, Aerospace Studies

Gunther Laukien Prize

Presented at the annual Experimental Nuclear Magnetic Resonance Conference, this award recognizes outstanding achievements in the development of techniques for studying the structure and dynamics of proteins and nuclear magnetic resonance research with a high probability of enabling beneficial new applications.

Lewis Kay, Biochemistry and Medical Genetics & Microbiology

International Agency for Research on Cancer Medal of Honour

Part of the World Health Organization, IARC awards its medal of honour annually in recognition of long-term contributions to the agency.

Anthony Miller, Public Health Sciences

ISI Highly Cited

This list represents 250 of the most highly cited researchers over the last 20 years in the articles indexed by the Institute for Scientific Information (ISI) in each of 21 broad subject categories in life sciences, medicine, physical sciences, engineering and social sciences. These individuals comprise less than one-half of one per cent of all publishing researchers – truly an extraordinary accomplishment. The following U of T researchers were added to the list in 2004:

Sergio Grinstein, Biochemistry; Hospital for Sick Children
 David MacLennan, Banting and Best Department of Medical Research
 Nancy Reid, Statistics
 Johanna Rommens, Molecular and Medical Genetics; Hospital for Sick Children
 Janet Rossant, Molecular and Medical Genetics; Mount Sinai Hospital
 Edward Sellers, Pharmacology; Medicine; Psychiatry
 Stephen Tobe, Zoology

Killam Prize

Awarded by the Canada Council for the Arts, these prizes honour eminent Canadian scholars in engineering, health sciences and natural sciences.

Janet Rossant, Molecular and Medical Genetics; Mount Sinai Hospital
 James Arthur, Mathematics

Killam Research Fellowship

Awarded by the Canada Council for the Arts, these fellowships recognize and support distinguished Canadian scholars, normally full professors at Canadian universities and research institutes, who have established outstanding reputations in their areas of research.

Ian Lancashire, English

National Academy of Sciences

Considered one of the highest honours accorded to a scientist or engineer, membership in the National Academy of Sciences (or, for those outside of the U.S., being elected a “foreign associate”) recognizes distinguished and continuing achievements in original research. The following U of T faculty members were elected foreign associates:

Lap-Chee Tsui, Medical Genetics and Microbiology
 Anthony Pawson, Medical Genetics and Microbiology; Samuel Lunenfeld Research
 Institute at Mount Sinai Hospital
 Robert Birgeneau, Physics

National Business Book Award

Co-sponsored by PricewaterhouseCoopers LLP and BMO Financial Group, this award is presented annually to recognize outstanding business books published in Canada and is considered one of the country's most prestigious and respected literary awards.

Kim Vicente, Mechanical and Industrial Engineering

The Human Factor: Revolutionizing the Way People Live with Technology, Knopf
Canada, 2004

NSERC Award of Excellence

Given annually by the Natural Sciences and Engineering Research Council of Canada, the Award of Excellence is given to the three finalists of the Gerhard Herzberg Canada Gold Medal for Science and Engineering, which recognizes sustained excellence and the overall influence of research conducted in Canada in the natural sciences or engineering.

J. Richard Bond, Canadian Institute for Theoretical Astrophysics

NSERC Synergy Award for Innovation

These awards are given annually to recognize outstanding, long-lasting university-industry research and development partnerships.

Douglas Reeve of Chemical Engineering and Applied Chemistry, along with a team of U of T researchers, was recognized for the 50-year partnership U of T has had with ERCO Worldwide – a collaboration which has had enormous environmental and economic benefits for the pulp and paper and water treatment industries.

Premier's Platinum Medal for Research Excellence

Established in 2001 by the Ontario government, these \$1 million prizes are awarded annually to two outstanding researchers in the middle stages of their careers.

Peter St. George-Hyslop, Centre for Research in Neurodegenerative Disease

R. U. Lemieux Award for Organic Chemistry

Given by the Canadian Society for Chemistry, this annual award is presented to an organic chemist who has made a distinguished contribution to any area of organic chemistry while working in Canada.

Mark Lautens, Chemistry

Royal Society of Canada Fellows

Fellowship in the Royal Society is a prestigious honour recognizing outstanding contributions to the arts and sciences.

Gregory Brown, Psychiatry; Physiology (Emeritus)
Rosemary Sullivan, English
John Dick, Medical Genetics and Microbiology
David Naylor, Medicine
Barbara Sherwood Lollar, Geology
Donald Stuss, Psychology; Medicine
Daniel Brooks, Zoology
Alison Fleming, Psychology (University of Toronto at Mississauga)
Stephen Clarkson, Political Science (Emeritus)
Richard Simeon, Political Science; Law
John Myles, Sociology

Royal Society of London Fellows

Internationally recognized as one of the highest honours in science, fellowship in the U.K.-based Royal Society – which admits only six foreign members each year – is offered to scientists who have made a distinguished achievement in their fields.

Spencer Barrett, Botany
Peter St. George-Hyslop, Centre for Research in Neurodegenerative Diseases

Rutherford Memorial Medal

Given by the Royal Society of Canada, this medal is awarded for outstanding research in any branch of physics and chemistry.

Andrew Woolley, Chemistry
Sajeev John, Physics

Sloan Research Fellowships

These U.S.-based awards are intended to enhance the careers of the very best young faculty members in specified fields of science.

Balint Virag, Computer and Mathematical Sciences (University of Toronto at Scarborough)
Gregory Scholes, Chemistry

Steacie Memorial Fellowships

Awarded by the Natural Sciences and Engineering Research Council, these fellowships are given annually to university researchers who are capturing international attention for outstanding scientific or engineering achievement.

Lisa Jeffrey, Mathematics
George Eleftheriades, Electrical and Computer Engineering

Steacie Prize

Administered by the E.W.R. Steacie Memorial Fund, this prize is Canada's most prestigious research award for young scientists and engineers.

Stephen Scherer, Molecular and Medical Genetics

Top 40 Under 40

This national program is managed by The Caldwell Partners to celebrate leaders of today and tomorrow, and to honour Canadians who have reached a significant level of success before their 40th birthday.

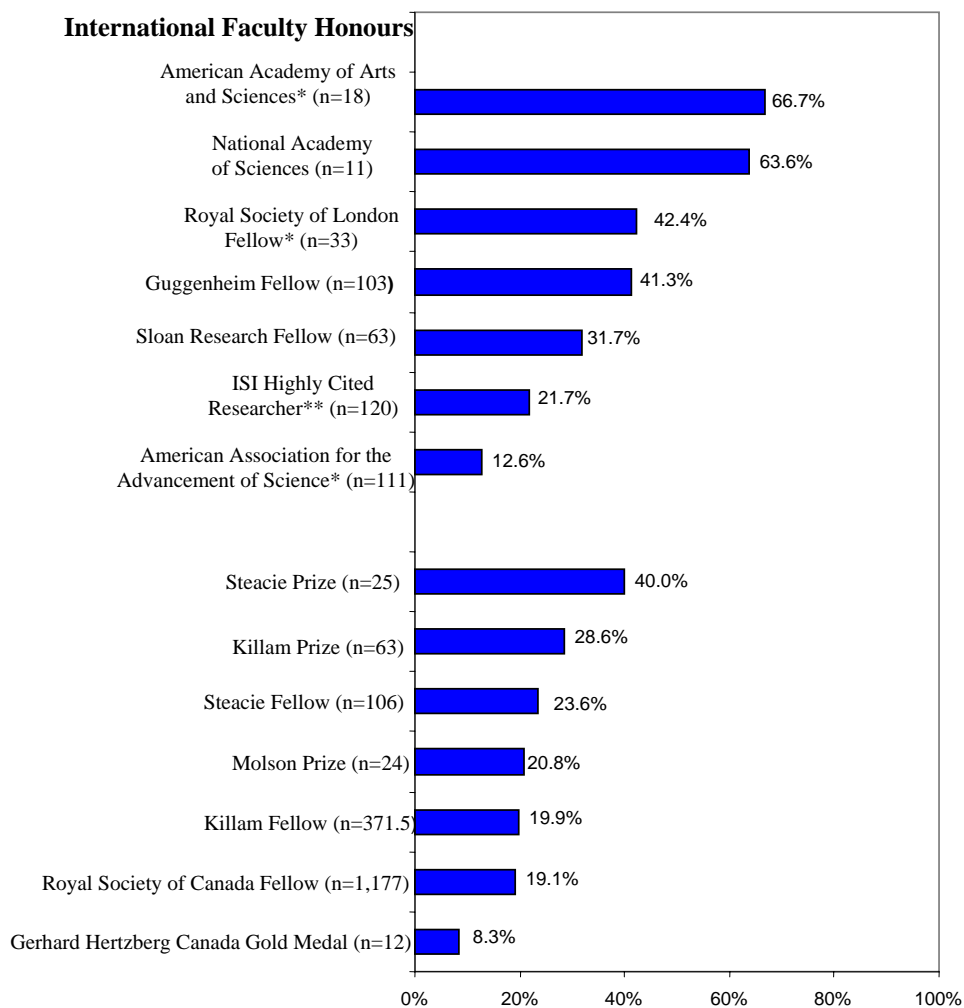
Peter Dirks, Surgery
David Jaffray, Medical Biophysics
Prabhat Jha, Public Health Sciences
Edward Sargent, Electrical and Computer Engineering

Faculty Honours

University of Toronto faculty members continued to receive various honours in proportions far exceeding the University's share of faculty members in Canada (7%).

Particularly encouraging is that our faculty members are receiving an overwhelming proportion of international honours bestowed on few researchers in Canada, such as membership in the American Academy of Arts and Sciences and the National Academy of Science, fellowship in the Royal Society of London and research fellowships from the Alfred P. Sloan Foundation, where U of T currently ranks 13th overall in numbers received over the past four years.

Faculty Honours, 1980-2004 University of Toronto compared to awards held at Canadian Universities

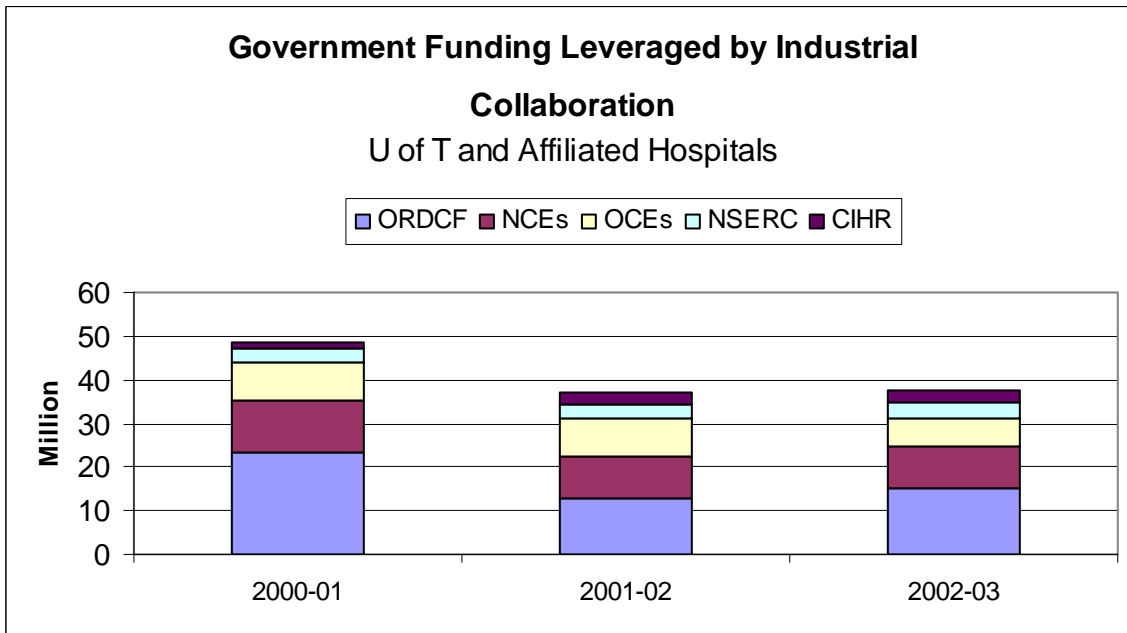
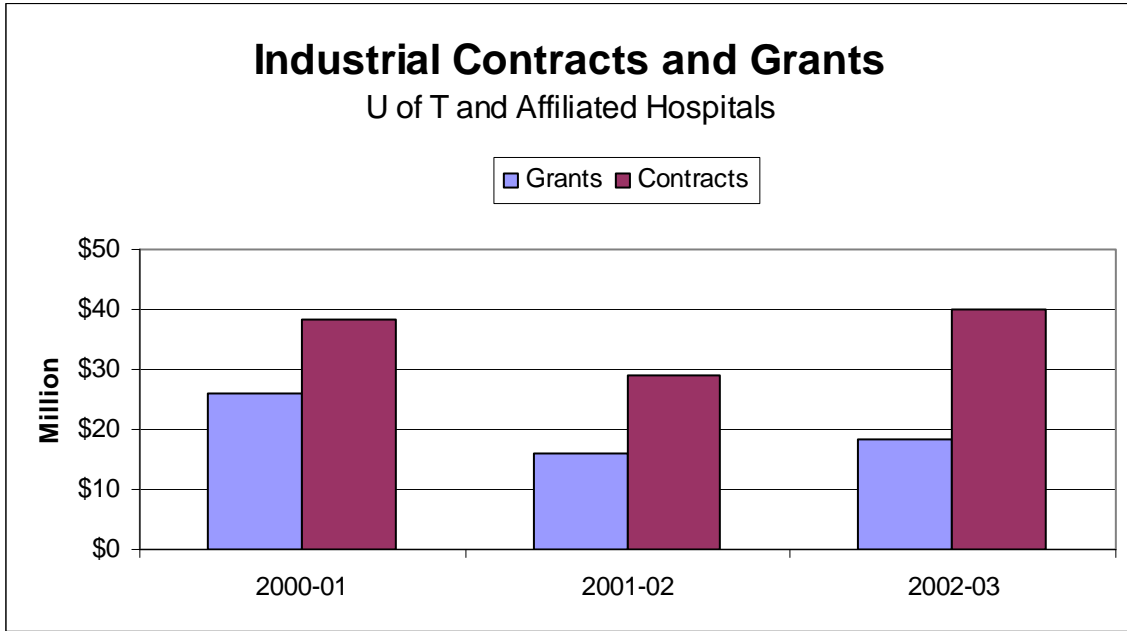


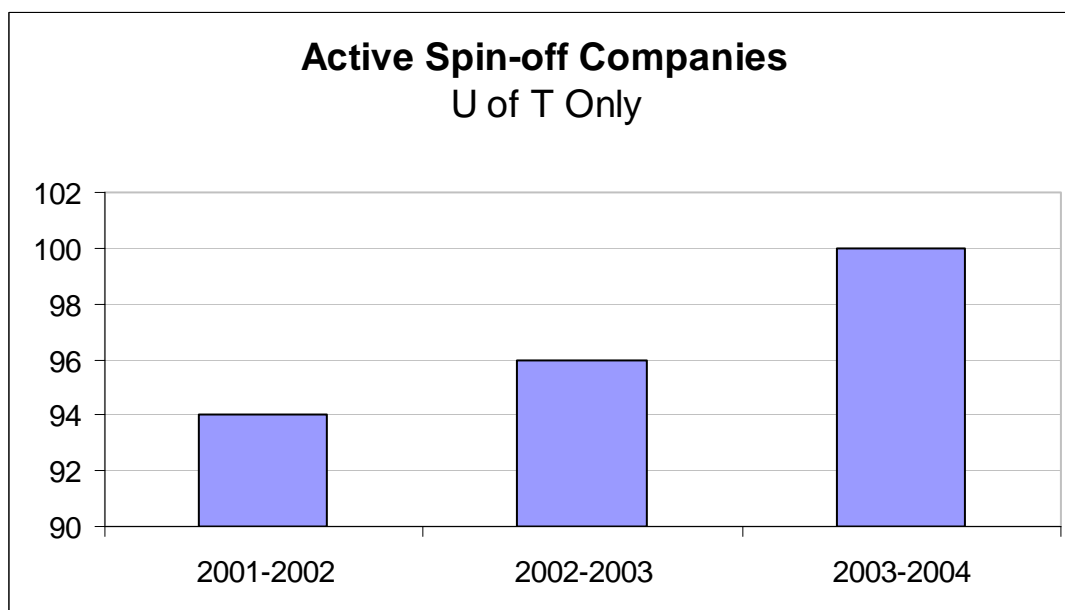
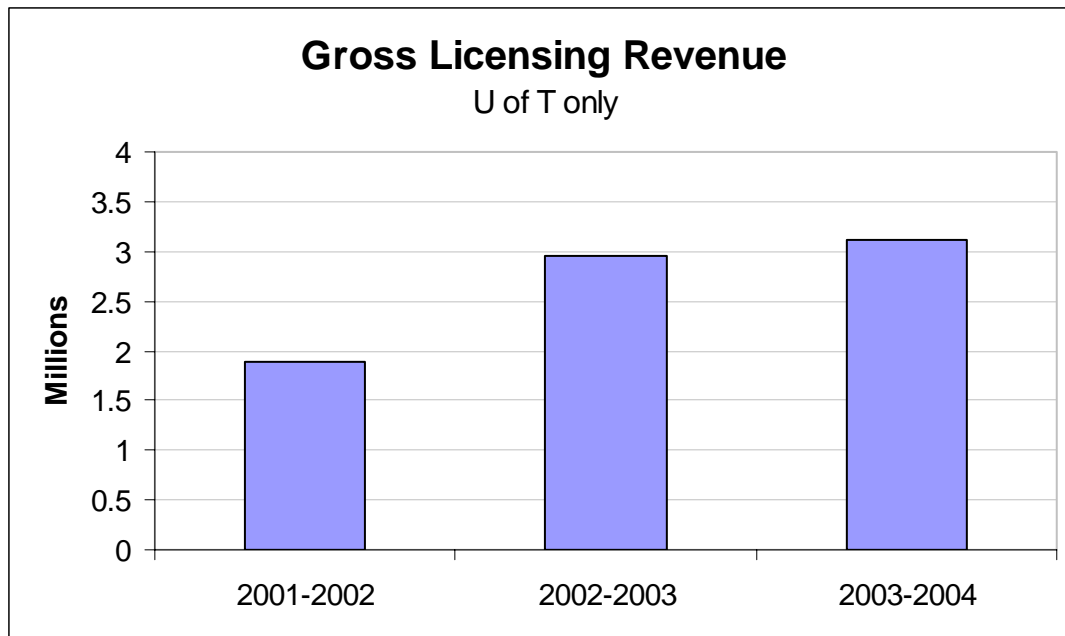
*For current members only

** As of 2004 Source: Award announcements for each program
For description of selected faculty honours, see pages 15-20

"n" refers to number of honours held at all Canadian universities

Technology Transfer





SELECTED ACCOMPLISHMENTS

1. Vice-President's Office

- Developed new strategic research plan for the University of Toronto, 2003-2008
- Established a new U of T Research Advisory Board
- Established working groups on indirect costs and on collections
- Established (with the Provost's Office) a task force on Institutes, Centres, Groups and Programs
- Extensively reorganized portfolio; new positions include Associate VP, International Research & Development (Prof. Patricia McCarney); Director, Research Ethics Review Office (Dr. Rachel Zand); Director, Government Liaison (Liz Finney); and Manager, Research Information Analysis (José Sigouin). New appointments include GRIP Director (Judith Chadwick) and Director of Operations (Linda Vranic).
- Established processes to critique and comment on the SSHRC transformation process
- Worked with Provost's Office to develop performance indicators to characterize better the international standing of the university's research enterprise
- Initiated review of the Innovations Foundation
- Facilitated appointment of a new director for the Bell University Laboratories
- Membership on boards of Toronto Biotech Cluster Consortium and Toronto Regional Research Alliance

2. Advocacy

- Hosted events to celebrate 25th anniversaries of NSERC and SSHRC; hosted events, receptions and roundtables for Lord Robert May, Sir David King, Dr. Kiyoshi Kurokawa; hosted various government events and announcements, including CRC celebratory event in November 2003, and the announcement of new CRC recipients in April 2004 with the Honourable Joseph Volpe
- Created a joint new position of Director, Government Liaison with the Office of the Vice-President, Government and Institutional Relations

- VP participated actively in activities of OCUR; G10 group of Vice-Presidents, Research; HURCC; TAHSC and at the Annual AAU Meeting
- VP met with heads of SSHRC, CIHR, NSERC as well as Ministers and senior bureaucrats in Ottawa
- Continued to lobby government aggressively in support of Canada Foundation for Innovation, Canada Research Chairs, Ontario Innovation Trust and the Ontario Research and Development Fund and to work with these organizations in stabilizing and augmenting government support

3. Research Support and Investment

- Maintained number one ranking in federal granting council (CIHR, NSERC, SSHRC) grants for the 10th consecutive year
- In conjunction with our affiliated hospitals, surpassed the \$1 billion mark in attracting research investment through government research infrastructure programs
- Submitted 47 applications to the CFI Innovation Fund competition, more than twice as many as had been submitted in the previous round
 - Results included nine awards worth \$39 million (9% of the national allocation), more than three times the amount secured through the previous round
 - With matching, this represents \$89 million for laboratories and equipment
- Across the GRIP programs, an additional \$158.8 million was secured through University of Toronto - led projects, including:
 - \$39M from the CFI Innovation Fund program, noted above
 - \$41.8M through Canada Research Chairs (CRC)
 - \$3.83M through CRC-CFI
 - \$6.63M through CFI New Opportunities and Career Awards
 - \$8.23M through CFI Infrastructure Operating Funds
 - \$40.57M in CFI matching from the Ontario Innovation Trust
 - \$3.04M from Genome Canada/Ontario Genomics Institute
 - \$15M from ORDCE (for Structural Genomics Consortium)
 - \$1.2M from the Premier's Research Excellence Awards program
- Through the Connaught Fund program, reviewed and distributed more than \$3 million in graduate student scholarships, start-up grants and New Staff Matching grants for new faculty members, Research Fellowships, International Symposia grants, the McLean Award

4. Services to the University

- Implemented the new Federal Granting Council indirect cost program at the university and affiliated institutions
- With Provost's Office, launched the first annual university-wide New Faculty Orientation Sessions for more than 150 new early- and mid-career faculty
- With Provost's Office, launched the first annual Academic Administrator Workshop to address research strategies and issues
- Expanded Research Services staff to provide additional grants administration services to new and mid-career researchers
- Supported NSERC faculty in submitting more than 150 web-based applications (50% participation rate)

5. Ethics Review

- Commenced with mandatory Annual Renewals of protocols (the first step of Continuing Review), putting U of T in compliance with the Tri-Council Policy Statement
- Registered the five University Research Ethics Boards with the Office of Human Research Protection in the United States, and received federal-wide assurance, enabling researchers to apply for and receive NIH-funded grants from the U.S.
- Held inaugural meeting (May, 2003) of the newly-formed Committee on Human Subjects in Research, chaired by Marion Bogo (Social Work); this committee serves as the advisory board to the Vice-President, Research and Associate Provost, and is made up of U of T experts in various fields of human subject research and bioethics
- Expanded ethics education with use of the web course by the Clinical Investigators Program; the Research Ethics 101 lecture was given to five graduate and professional departments and is currently offered to all departments that conduct human subject research
- Realized a 20% increase in volume of submissions over last year (1,600 to 1,900) as a result of a new requirement for annual renewals, greater awareness by researchers of their responsibilities to submit, and an increasing focus on research project/experimental learning at all levels of university education

6. University Veterinarian

- Coordinated reviews of animal care protocols across three campuses through local and university animal care committees
- Completed successful accreditation review by the Canadian Council on Animal Care (CCAC)
- Promoted knowledge about the use of animals in medical research through organizations such as Partners in Research

7. Technology Transfer

- Renegotiated agreement with Ontario Centres of Excellence, simplifying intellectual property provisions and generating additional overhead revenue
- Increased gross licensing revenue by 56% to \$3 million (figures for 2002-2003 based on available data from AUTM)
- Expanded technology transfer cooperation with MaRS, affiliated hospitals and other universities

8. Internationalization

- Established the Office of the Associate Vice-President, International Research and Development and managed transition to a more research-oriented international portfolio
- Developed the Canadian Universities' Centre in Berlin (including hiring a new Director, appointing a management committee and developing a new agreement with the Université du Québec à Montréal)
- Established new strategic partnerships with University of Tokyo, Sorbonne, ETH Zurich and others
- Restructured the Memorandum of Understanding with the University of Siena as a model for U of T international partnerships
- Worked to advance multi-divisional interests and networking during strategic visits from the Japan Society for the Promotion of Science, University of Tokyo, Nankai University (China), Kaohsiung Medical University (Taiwan), Seoul National University (South Korea) and others

9. Communications

- Embarked on redevelopment of the RAP website to provide greater ability to announce news and to provide easier navigation throughout site
- *Edge* Magazine won a Gold Award from the Canadian Council for the Advancement of Education (CCAЕ) and a Silver Award from the U.S.-based Council for the Advancement and Support of Education (CASE District 2)

PRIORITY PLANS

1. Advocacy

- Establish NRC Institute in Toronto
- Support advocacy efforts aimed at renewed and enhanced funding for major institutional research grants programs, through opportunities presented as a result of changes in government and sponsor leadership, and develop a U of T-specific advocacy plan for the evolution of GRIP programs in a manner that recognizes our special role as Canada's largest research-intensive university
- Lobby for improved federal granting council indirect costs program
- In collaboration with the Division of University Advancement and the Office of the Vice-President, Government and Institutional Relations embark on major external communications initiatives to promote U of T research across Canada
- Advance the profile of Connaught Fund programs through the creation of a website and divisional information sessions
- Work with federal granting councils on:
 - SSHRC and NSERC transformations
 - Granting council budgets to meet the immediate needs of increased numbers of new faculty entering the system (pressure on operating grant success rate and average grant), and senior faculty who will not exit the system as a result of the elimination of mandatory retirement
 - Identifying other grant sponsors and programs – such as the NIH (health and social sciences focus), foundations, IDRC and HRDC – that will be the focus of promotional and proactive service activities

2. Research Support and Investment

- Enhance U of T's leadership position in attracting resources from GRIP programs, provincially and nationally, through continuously improved support and communication mechanisms for faculty and academic administrators (targeted workshops, website enhancements, individualized service, etc.).
- Lay the groundwork for the anticipated fifth-round CFI Innovation Fund competition, building on analysis of results in previous rounds, and with specific focus on advancing the university's academic and capital priorities

- Define and advance GRIP/CRC Executive goals with respect to U of T participation in GRIP programs through regular communication with program leadership and through special opportunities such as the five-year review of the CRC program
- Enhance the capability of the GRIP office to generate accurate and timely data and analysis of GRIP activity through consultation with the new Manager, Research Information Analysis
- Maintain U of T's number one standing in GRIP programs, granting council funding and in *Maclean's* rankings

3. Services to the University

- Expand the offering of workshops to focus on new sponsors or programs, and to address under-participation for targeted sponsors, programs, divisions, and other research applicant segments
- Ensure a successful outcome to the winter 2004 audits for the federal granting councils, federal indirect cost and CRC programs, and the CFI; this includes preparing researchers, business officers and other central administrative departments for audit by holding information sessions and pre-auditing transactions in advance of audits
- Explore the feasibility of strengthening divisional capability in research administration, with formal communication and perhaps budgetary links to RAP
- Continue to work with RAP Strategic Communications Office to revamp the RAP website to make it more useful and accessible to the university research community
- Implement federal granting council electronic year-end financial reports by June, 2005
- Overhaul and simplify the administrative procedures for Canada Research Chairs, providing greater flexibility for academic divisions

4. Ethics Review

- Develop a Policy and Practices Manual that covers all areas of ethics review and research ethics at the university, in compliance with federal and provincial legislation on privacy and personal health information
- Increase education initiatives by creating new modules for the Ethics web course, and complete the pilot phase of first edition of the course with feedback from users;

create workshops and lectures for researchers in all disciplines and at various stages of their research career; and provide education opportunities to REB members and administrators

- Continue to develop methods of recruiting, retaining and recognizing members for their important contributions to maintaining high ethical standards in research at the university
- Develop an audit and monitoring system that will be workable for researchers and administrators alike and begin pilot-testing this system on a voluntary basis
- Firmly establish ethics review jurisdiction at the university and in the broader research community and create a higher profile at the university and beyond

5. University Veterinarian

- Make more use of continuing education
- Ensure continued compliance with provincial requirements under the Animals for Research Act
- Establish in-house training course on the use of exotic animals in research
- Expand and develop new animal facilities (e.g., CCBR, UTM expansion, new Centre for Biological Timing and Cognition)
- Coordinate response to February 2004 CCAC assessment report

6. Technology Transfer

- Attract new government funding to support technology transfer programs
- Increase overhead and licensing revenue
- Negotiate renewal agreements with several major industrial research sponsors
- Secure renewal of Dictionary of Canadian Biography license
- Assist with implementation of Innovations Foundation review recommendations
- Secure renewal of IPM grant
- Implement new overhead rate schedule

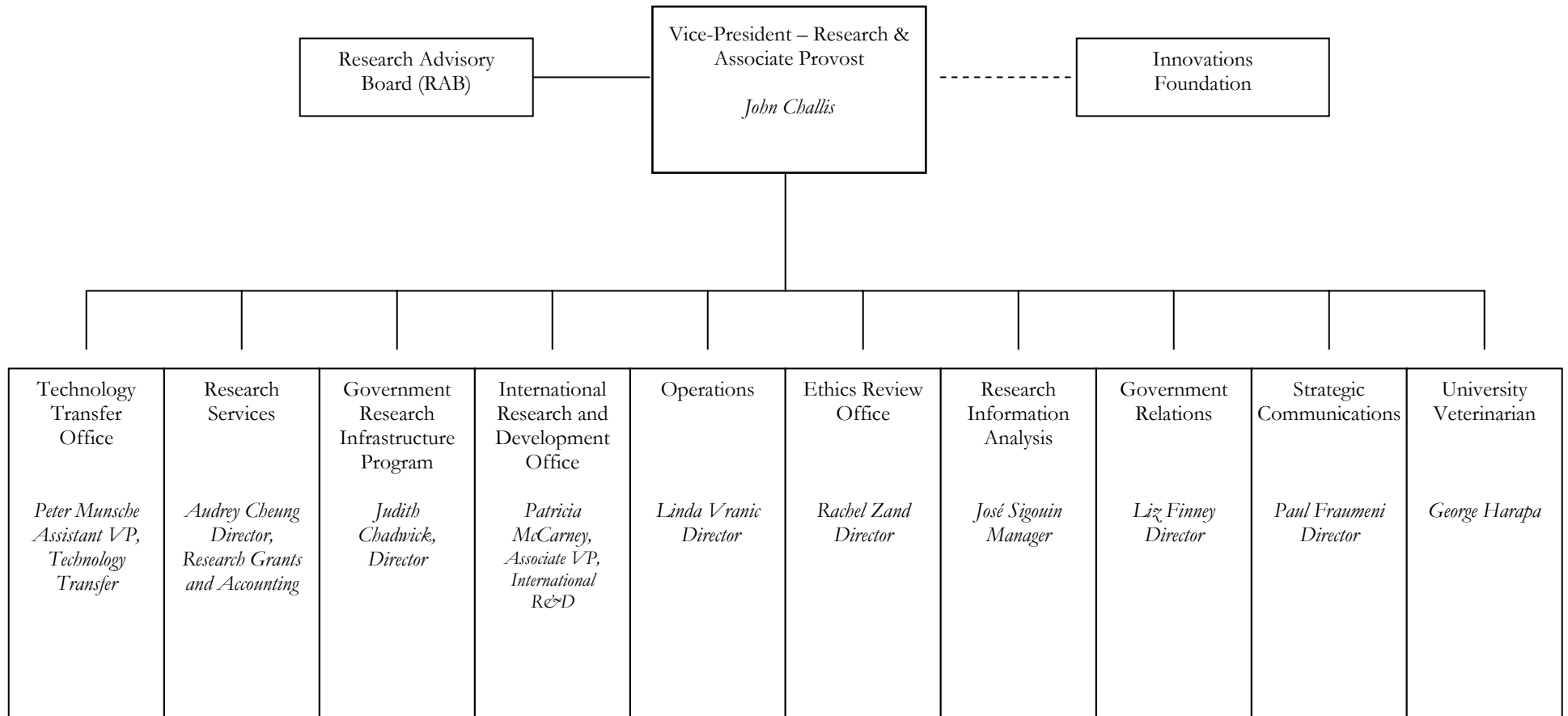
7. Internationalization

- Use Berlin Canadian Universities' Centre model to replicate in other regions
- Advance internationalization goals regarding large, collaborative research partnerships and graduate student exchange with leading research-intensive universities abroad
- Use the new IRD Office to drive achievement of the university's international goals and vision, building alliances on international initiatives with the President, DUA, the Provost, the VP-RAP and with faculties and students of different departments and disciplines
- Review and rationalize all U of T international memoranda and create a new policy on partnership agreements to govern future international partnerships

8. Communications

- Fall 2004 – launch first phase of new RAP website
- Fall 2004 – Publish new RAP external research brochure and information package
- Increase publication of *Edge* Magazine from twice annually to three times annually
- Work with communications and government relations staff in the Office of the Vice-President, Government and Institutional Relations in planning major government communications initiatives

APPENDIX A
Office of the Vice-President, Research & Associate Provost
September 2004



APPENDIX B

RAP Service Units

RESEARCH SERVICES & RESEARCH ACCOUNTING

University of Toronto Research Services (UTRS) provides faculty members with information about funding sources; processes applications for support; assists in the negotiation of research and intellectual property agreements; establishes successful awards on Administrative Management Systems; supports high standards of ethical conduct and financial accountability in research; and provides financial reports to sponsors. UTRS also administers a number of internal sources of support, notably the Connaught Fund.

OFFICE OF TECHNOLOGY TRANSFER

This office provides faculty with an integrated storefront of services relating to research partnerships with companies, technology transfer and commercialization. The office includes specialists in contracts, agreements and negotiation, a team of Business Development Officers, and provides access to the Innovations Foundation, which specializes in licensing technology and fostering new spin-off companies. This office also supports the university in nominating faculty for major scholarly prizes.

INTERNATIONAL RESEARCH AND DEVELOPMENT OFFICE (IRD)

The IRD office seeks to develop a broader international presence and profile for the university. This is achieved through promoting and supporting international program and project development, enhancing strategic international relations and agreements in support of divisional goals, and combining practical project activities with active identification of research and other academic resource opportunities.

GOVERNMENT RESEARCH INFRASTRUCTURE PROGRAM (GRIP)

The GRIP office promotes, coordinates and facilitates all U of T proposals directed towards the Canada Foundation for Innovation (CFI), the Canada Research Chairs (CRC), Genome Canada/Ontario Genomics Institute (GC/OGI), the Ontario Research & Development Challenge Fund (ORDCF), the Ontario Innovation Trust (OIT), the Premier's Research Excellence Awards (PREA), and the Premier's Platinum Award programs.

ETHICS REVIEW OFFICE

The Ethics Review Office provides the support and resources necessary to uphold the highest ethical and regulatory standards of research involving human or animal subjects at the University of Toronto. This includes assisting faculty members, staff and students through the ethical review process, facilitating the review process conducted by the five University Research Ethics Boards, and helping to develop and enforce university policies and procedures in compliance with national and international guidelines.

APPENDIX B

RAP Service Units cont'd.

UNIVERSITY VETERINARIAN

Reporting directly to the Vice-President, Research and Associate Provost, the University Veterinarian is responsible for the animal care and use program at U of T's three campuses.

STRATEGIC COMMUNICATIONS

The communications office promotes the university's research talent, strengths and opportunities. The team works closely with all RAP service units, and with various offices across the university including the central Public Affairs office, to develop and implement communications and marketing strategies, and to identify opportunities to promote research success stories. Ongoing priority projects include *Edge* magazine (U of T's research publication), *The Better Mousetrap* (technology transfer newsletter) and the RAP website.

GOVERNMENT LIAISON

Reporting jointly to the Vice-President, Research and Associate Provost and the Vice-President, Government and Institutional Relations, the Director of Government Liaison actively engages with all three levels of government to further the university's funding and policy advocacy efforts. The Director of Government Liaison also acts as a resource in an advisory capacity across the university to further ensure consistent messaging and handling of U of T's interactions with government.

RESEARCH INFORMATION ANALYSIS

Reporting directly to the Vice-President, Research and Associate Provost, the Manager of Research Information Analysis produces, analyzes and interprets all aspects of research performance indicators used by the university in strategic institutional planning and public relations. These analyses provide the quantitative and qualitative information that underlies the university's advocacy on research funding policy, particularly at the federal and provincial government levels.

RESEARCH INFORMATION SYSTEM (RIS)

RIS automates all major business functions associated with processing research grants and contracts, and integrates research application information with award information located within U of T's financial system (FIS). Through this system, the university can efficiently monitor and report this information and identify performance indicators.

APPENDIX C

Glossary of Abbreviations

AAU	Association of American Universities
AUCC	Association of Universities and Colleges of Canada
CCAC	Canadian Council on Animal Care
CCBR	Centre for Cellular and Biomolecular Research
CIHR	Canadian Institutes of Health Research
CFI	Canada Foundation for Innovation
CRC	Canada Research Chairs
DUA	Division of University Advancement
GC	Genome Canada
GRIP	Government Research Infrastructure Program
HRDC	Human Resources and Skills Development Canada
HURCC	Hospital/University Research Coordinating Committee
IDRC	International Development Research Centre
IPM	Intellectual Property Management Grant
IRD	International Research and Development Office
NIH	National Institutes of Health
NSERC	Natural Sciences and Engineering Research Council of Canada
OCUR	Ontario Council on University Research
OGI	Ontario Genomics Institute
OIT	Ontario Innovation Trust
ORDCF	Ontario Research & Development Challenge Fund
PREA	Premier's Research Excellence Awards
RAP	Office of the Vice-President, Research & Associate Provost
REB	Research Ethics Board
SSHRC	Social Sciences & Humanities Research Council of Canada
TAHSC	Toronto Academic Health Sciences Council
UTM	University of Toronto at Mississauga
UTSC	University of Toronto at Scarborough