

5. Graduate Students

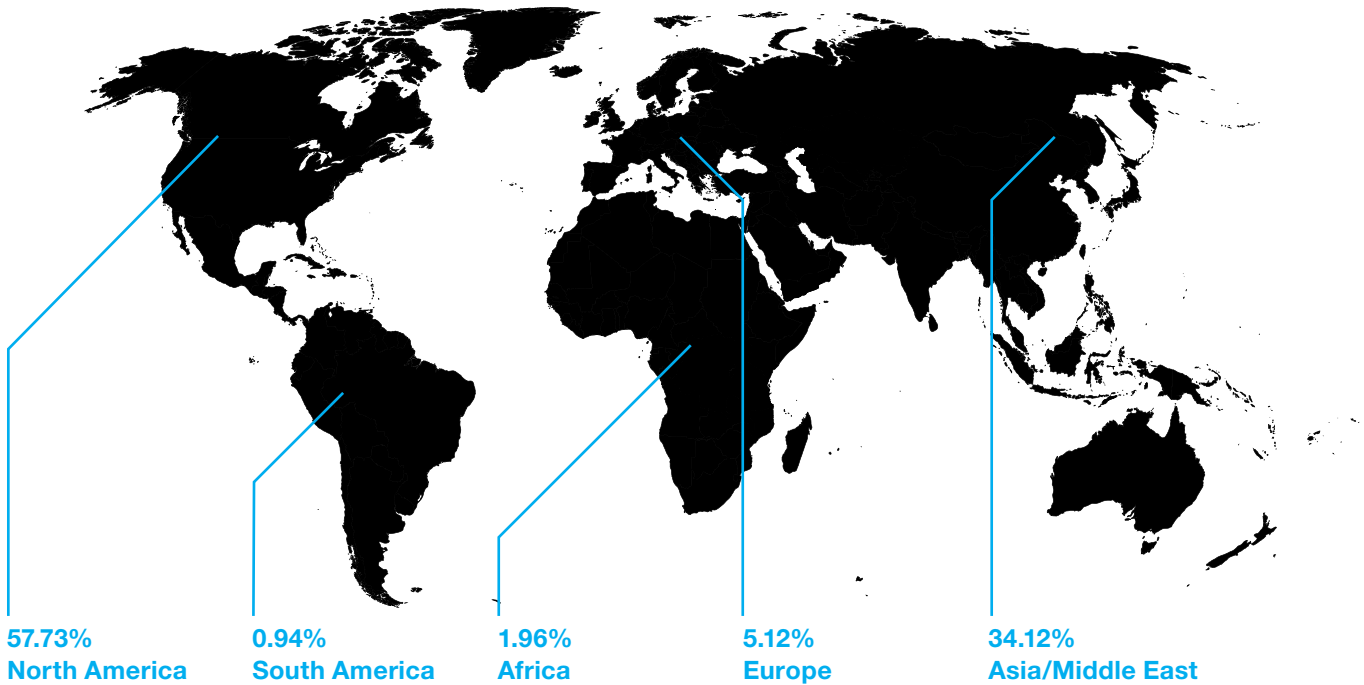
Over the past two years, the Faculty has increased graduate student enrolment and further expanded its innovative graduate programming. These initiatives will foster the next generation of leaders in engineering research and technical innovation, who will help ensure the future economic prosperity of our province and nation.

The Faculty's MEng professional master's program has received considerable attention and both its enrolment and its curriculum have grown quickly. In 2007, the Faculty launched a graduate certificate, as part of the MEng, for engineers interested in pursuing higher-level leadership roles in their profession. The first of its kind in Canada, this certificate in Entrepreneurship, Leadership, Innovation and Technology in Engineering (MEng/ELITE) grew in enrolment by 140% in the past year.

In addition to the MEng/ELITE, the Faculty created a MEng graduate certificate in Engineering and Public Policy (EPP) in 2009, in collaboration with the U of T School of Public Policy and Governance.

The Prospective Professors in Training (PPIT) program, offered by the Faculty since 2006, prepares future faculty for the rigors of academia, deepens the academic environment, and enriches the experience of our graduate students.

Figure 5.1
Cultural Heritage of Graduate Students
Fall 2008



Note: Not Shown – 0.13% from Oceania, which includes Australia, New Zealand, and other countries in the Pacific Ocean. Cultural Heritage is derived from a combination of citizenship, location(s) of previous studies (e.g. high school, etc.) and permanent address. This information does not indicate current Canadian immigration status, which is used to determine domestic/international student status for tuition and funding purposes.

Figure 5.2
Graduate Student Headcount by Degree Type
2000–2001 to 2008–2009

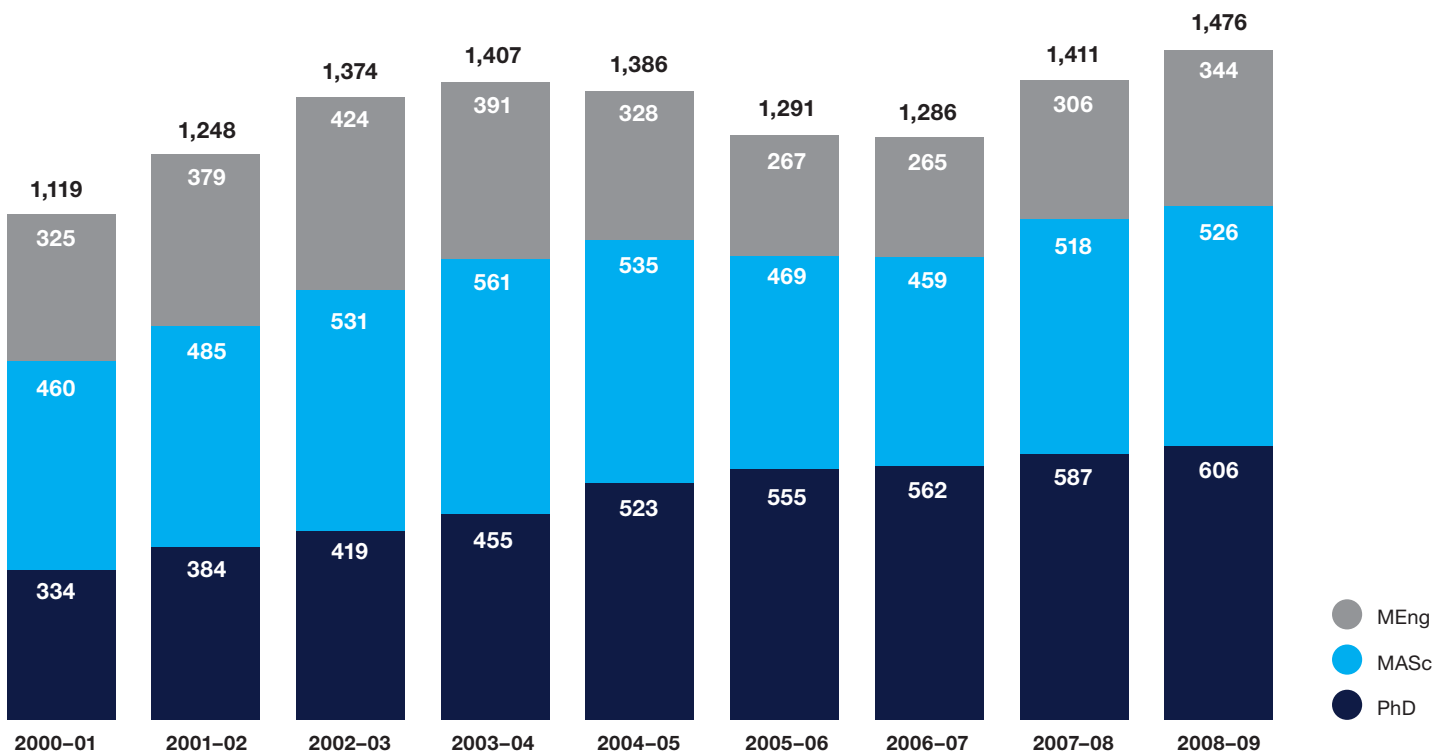


Figure 5.3

Graduate Student Enrolment by Full-Time Equivalent (FTE) and Headcount (HC) by Area of Study 2000–2001 to 2008–2009

		UTIAS	IBBME	ChemE	CivE	ECE	MIE	MSE	Total
2000–01	FTE	68.6	8.0	156.2	154.4	287.0	230.4	56.2	960.7
	HC	68.6	8	166	188	350	278	59	1,119
2001–02	FTE	68.2	15.0	153.3	175.9	310.4	293.7	57.2	1,073.7
	HC	71	15	161	213	372	356	60	1,248
2002–03	FTE	84.2	22.0	148.3	196.1	358.0	313.2	68.8	1,190.6
	HC	87	22	156	236	421	379	73	1,374
2003–04	FTE	89.9	48.0	159.4	184.2	383.6	228.5	77.0	1,230.6
	HC	92	48	165	222	441	355	84	1,407
2004–05	FTE	97.0	57.0	164.7	157.5	381.7	287.3	77.0	1,222.2
	HC	97	57	171	189	430	358	84	1,386
2005–06	FTE	85.3	52.0	142.1	150.4	380.5	278.8	71.1	1,160.2
	HC	86	52	147	170	428	332	76	1,291
2006–07	FTE	79.6	75.0	138.5	160.3	407.3	238.8	67.5	1,167.0
	HC	81	75	142	182	457	278	71	1,286
2007–08	FTE	105.0	115.0	150.0	183.3	438.1	227.3	71.2	1,289.9
	HC	105	115	157	212	478	270	74	1,411
2008–09	FTE	122.9	140.0	167.8	184.0	415.4	237.1	82.8	1,350.0
	HC	125	140	179	219	442	284	87	1,476

Figure 5.4
Graduate Degrees Awarded by Degree Type and Gender
2000–2001 to 2008–2009

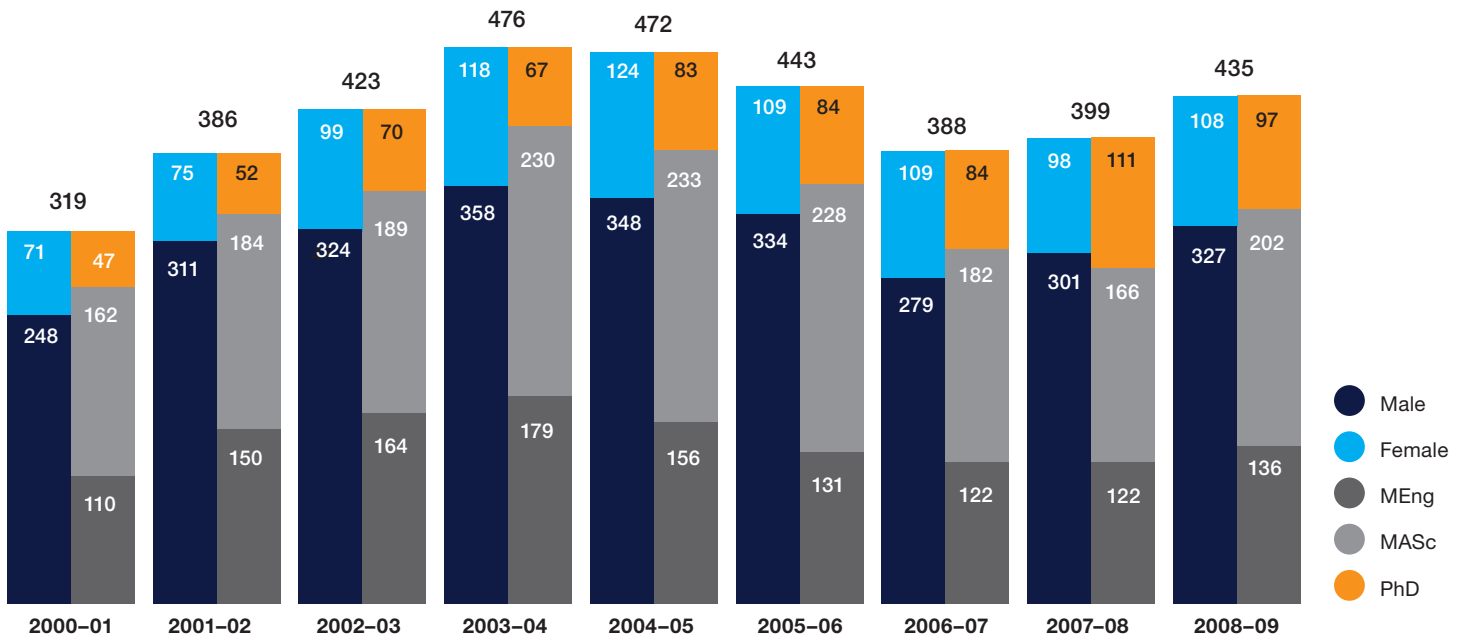
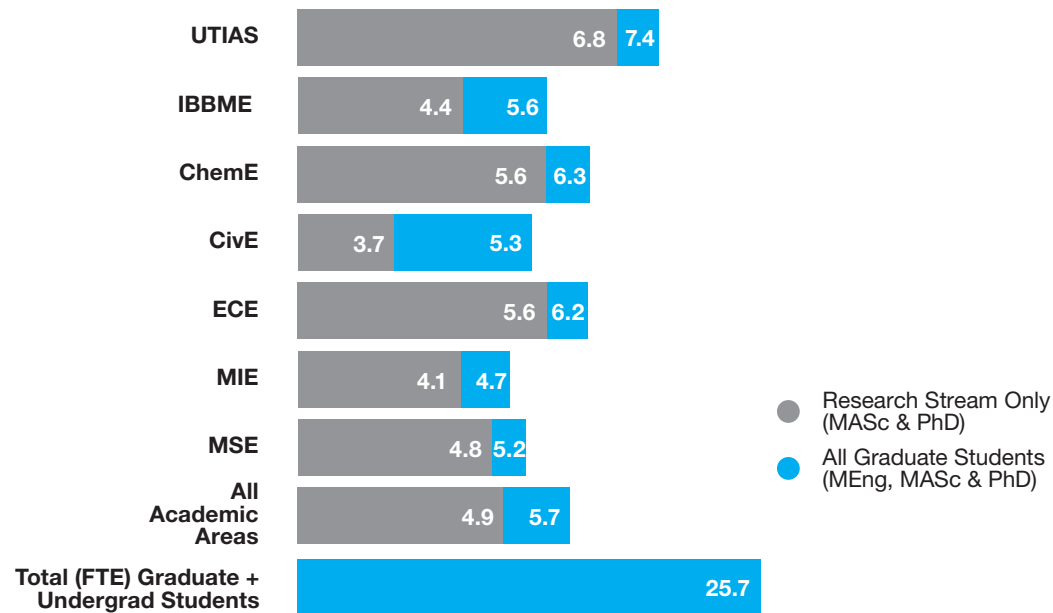


Figure 5.5
Full-Time Equivalent Graduate Student-Faculty Ratios by Academic Area
2008–2009



Note: The calculation includes Assistant Professors, Associate Professors and Professors. It should be noted that graduate student-faculty ratios can be difficult to derive precisely. For instance, 22 IBBME academic staff were included to represent the interdisciplinary nature of the interaction graduate students have with faculty from other Departments and Faculties. However, graduate students who conduct research at affiliated research hospitals who are supervised by professors who hold clinical or status-only appointments are not included in our faculty count. Total (FTE) Graduate (MASC, MEng and PhD) and Undergraduate ratio of 25.7 uses FTE faculty including 1 EngSci Lecturer and 4 Lecturers from ECP.

MEng/ELITE certificate: Entrepreneurship, Leadership, Innovation and Technology in Engineering

In January 2007, the Faculty launched a series of courses in Entrepreneurship, Leadership, Innovation and Technology in Engineering (ELITE). The first of its kind in Canada, the ELITE certificate is specifically designed for engineers who wish to take on more of a leadership role in their work environments – whether by learning to better motivate teams, foster and manage innovation, or by embracing global opportunities.

To graduate with the ELITE certificate, students must complete at least four courses. Students in the MEng program can also take ELITE courses as part of their MEng requirement to enhance their education.

Enrolment in ELITE courses by graduate students has drastically increased over the last three years. Similarly, the number of courses offered has also expanded in the last two years to prepare our students for leadership positions in Engineering.

Figure 5.6
Enrolment in MEng/ELITE
2006–2007 to 2008–2009

	2006–07	2007–08	2008–09
APS 501: Leadership and Leading in Groups and Organizations (ChemE)	N/O	7	15
APS 1001: Project Management (CivE)	53	N/O	105
APS 1002: Financial Engineering (MIE)	10	54	99
APS 1003: Professional Education and Instruction (MIE)	N/O	23	47
APS 1004: Human Resources Management: An Engineering Perspective (CivE)	28	33	88
APS 1005: Operations Research for Engineering Management (MIE)	10	25	55
APS 1088: Entrepreneurship and Business for Engineers (ChemE)	N/O	18	24
APS 1201: Topics in Engineering and Public Policy (CivE)	N/O	19	16
APS 510/CIV 1099: Innovative Technologies & Organizations in Global Energy (CivE)	N/O	8	21
JEI 1901: Technology, Society, and the Environment I (CivE)	N/O	15	19
JEI 1902: Technology, Society, and the Environment II (CivE)	N/O	3	1
Total Enrolment	101	205	490

Note: N/O = Not Offered

MEng/EPP certificate: Engineering and Public Policy

Starting September 2009, the Faculty will introduce a series of courses in Engineering and Public Policy.

Engineers have much to contribute to the creation and implementation of public policy and the work of engineers is heavily impacted by public policy in areas such as energy, water use, sustainable design, sustainable building materials, health and safety, transportation and urban renewal.

In collaboration with the School of Public Policy and Governance, the Faculty identified a series of courses that will provide students with foundations in the field of public policy and the opportunity to pursue specific aspects of the discipline, including transportation, environmental decision making technology, global energy systems, infrastructure economics, and strategic policy implementation. Students will receive a certificate to acknowledge successful completion of four Engineering and Public Policy courses as part of the MEng program.

As of Fall 2009, the following EPP courses will be offered:

PPG1004	Quantitative Methods for Policy Analysis
CIV531	Transport III – Planning
ENV1001	Environmental Decision Making
PPG1001	The Policy Process
APS510	Innovative Technologies and Organizations in Global Energy Systems
APS1201	Topics in Engineering and Public Policy
CIV1310	Infrastructure Economics
PPG1007	Putting Policy into Action: Strategic Implementation
MIE561	Healthcare Systems

Prospective Professors in Training Program

Initiated as a pilot in 2006–2007, Prospective Professors in Training (PPIT) was officially launched in 2007–2008.

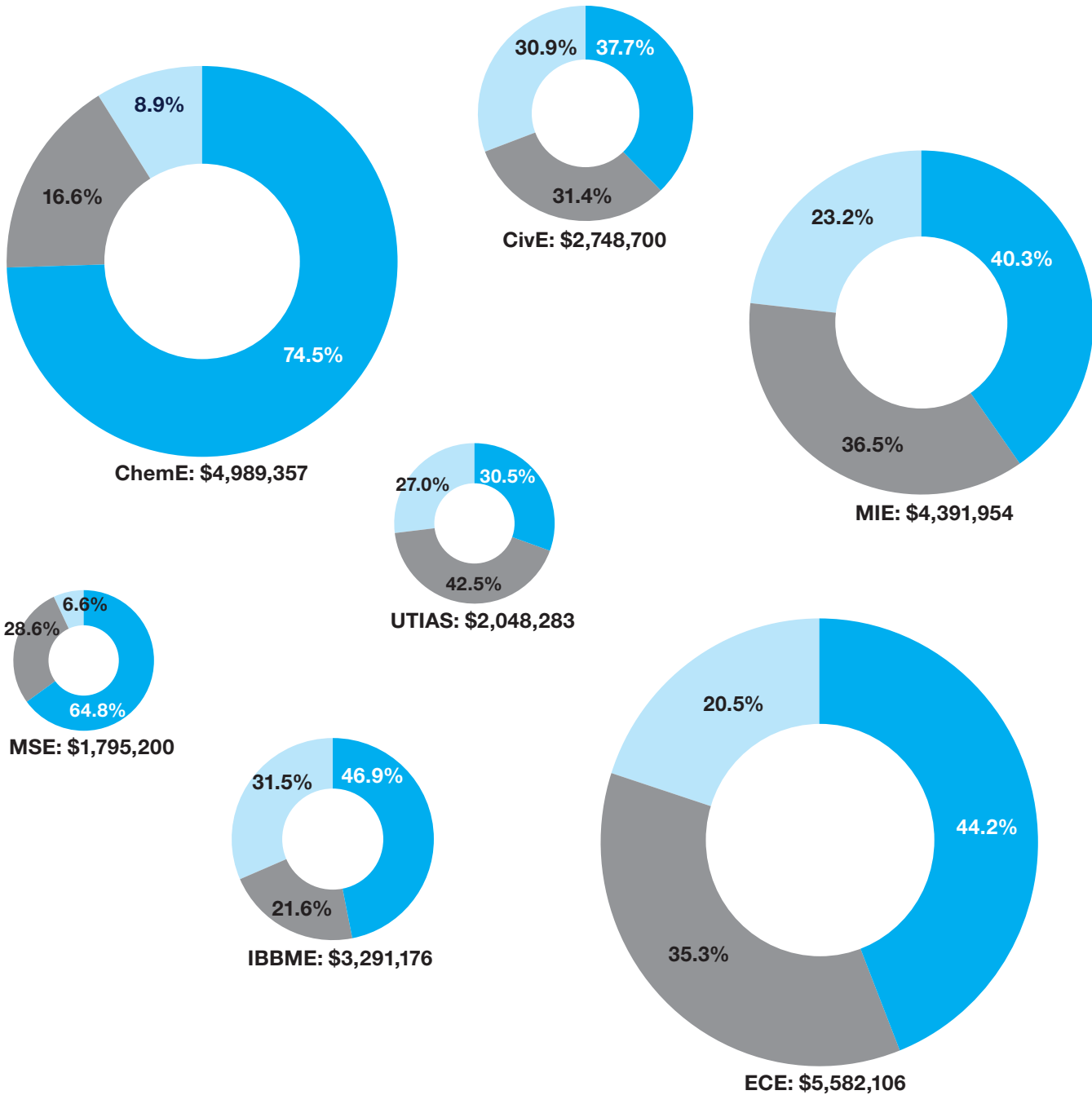
The PPIT program prepares soon-to-be faculty for the rigors of an academic position. The program includes seminars that teach students how to apply for academic positions and grants, how to manage a classroom, how to start research programs, and topics in teaching and learning. Elective seminars are also offered by the Office of Teaching Advancement and the Teaching Assistants Training Program.

Figure 5.7
Enrolment in PPIT
2006–2007 to 2008–2009

	2006–07	2007–08	2008–09
UTIAS	1	2	0
IBBME	1	1	3
ChemE	5	5	2
CivE	5	7	4
ECE	6	11	7
MIE	4	7	4
Total	22	33	20

Note: In 2006–2007, 22 students enrolled, 19 graduated, 3 withdrew. In 2007–2008, 33 students enrolled, 26 graduated, 3 withdrew, and 4 received extensions. In 2008–2009, these 20 students include 4 extensions; graduation and withdrawal numbers will be available in Fall 2009.

Figure 5.8
Graduate Student Funding by Academic Area
2008–2009



- Research Funds
- Faculty and Departmental Funds (including UTF, TAship)
- Scholarships (including NSERC, OGSST, OGS, CIHR, endowed scholarships)

Note: IBBME Faculty and Departmental Funds include internships.