University of Toronto

Graduate Enrolment Planning 2005-15

Discussion Paper

12 October, 2005

University of Toronto
Graduate Enrolment Planning 2005-15

Discussion Paper

I. Introduction

The University of Toronto initiated a major enrolment planning process in 1999 in conjunction with the *Raising Our Sights* academic planning process. This was prompted by the anticipated increases in applications due to the double cohort and the projected long-term increases in demand resulting from demographic changes and the growing participation rate. Around that time, the Government announced new funding to encourage capacity increases that would accommodate the double cohort.

A discussion paper was issued in 1999 followed by university-wide consultation, leading to the development of a Framework for Enrolment Expansion that would guide growth at the University's three campuses. The Framework was approved by Governing Council in 2000. (see *www.provost.utoronto.ca/English/Reports.html*).

The anticipated increase in the applicant pool was seen as an opportunity to realize the University's aspiration to strengthen the east and west campuses. Hence, our response to the Government's call was framed around a significant expansion at these two campuses, accompanied by a modest and temporary increase at the St. George campus to accommodate the double cohort.

The Framework stated that implementation of the expansion plans must be conditional on the University receiving full Operating Grant funding for the increase in enrolment and on the availability of capital funding to build the necessary facilities. The first of these conditions was fully met by the Government, as they committed to fund all increases in undergraduate enrolment beyond the enrolment levels in 2000-01. The Government also introduced the Superbuild program, which provided most, but not all, of the capital funds for additional space and laboratories. None the less, the University decided to proceed with the expansion plans as it became possible to obtain capital funds from other sources.

In addition to increasing undergraduate enrolment, the Framework recognized that the percentage of graduate students among the total student population is an important indicator of the level of research and scholarship in a university. Hence, consistent with the research-intensive nature of the University of Toronto, the Framework called for a concomitant increase in graduate enrolment to maintain the student mix.

The Government funding available during the double cohort years allowed for some increase in graduate enrolment, but was ultimately insufficient to maintain the student mix at the levels that existed prior to the enrolment expansion. To meet academic needs, graduate student numbers at the University of Toronto increased beyond available funding, leading to what has come to be known as "unfunded graduate BIUs[1]."

[1] BIU stands for Basic Income Unit, the unit used in calculating the government grant for different programs.

In November 2003, a Council of Ontario Universities' task force chaired by President Paul Davenport recommended the doubling of graduate enrolment in Ontario over a ten-year period, partly in response to the double cohort, but also, and more importantly, because of the projected long-term increases in demographics and participation rates. At about the same time the report of the Task Force on Competitiveness, Productivity and Economic Progress Chaired by Dean Roger Martin recommended a significant increase in graduate education in Ontario, as a driver for innovation and economic growth — a recommendation that was strongly endorsed by the Rae review of post-secondary education.

These factors culminated in a major announcement of significant new funding for graduate enrolment expansion, which was one of the highlights of the Ontario budget of May, 2005. The present discussion paper examines in some detail the issues that should guide the discussion within the University of Toronto regarding our participation in the proposed expansion of graduate enrolment in Ontario.

The availability of funding for graduate expansion at the scale envisioned in the May budget is almost unprecedented. It presents a unique opportunity for the University of Toronto to rebalance the student mix and to expand graduate enrolment to better support our research enterprise. Appendix A provides an assessment of the changes in enrolment that have taken place as a result of the adoption of the 2000 Framework for Enrolment Expansion. This is the backdrop against which we should formulate our response to the May budget and the Government's call for increasing graduate enrolment in the Province.

II. Graduate Enrolment Planning

In assessing how the University of Toronto might respond to the call for expansion, we must make sure that the quality of graduate activities is protected and indeed enhanced. Many issues need to be examined, and this paper is intended to start the discussion and provide some of the relevant data.

Unlike undergraduate enrolment, graduate planning requires a high degree of involvement of individual divisions and departments. Admission decisions are made by the departments or centres to which students apply; the number admitted has to be closely coordinated with available faculty; the selection process often involves personal contact between applicants and potential supervisors; and so on. Hence, the answers for many of the questions raised in this paper are likely to vary significantly from one department to another. Ultimately, the university-wide plan will be an aggregation of divisional and departmental plans.

Current graduate enrolment in the University, which represents the starting point, is summarized in Table 1. More detailed tables showing recent enrolment history in each Division will be sent separately to individual divisions.

Increasing graduate enrolment at the rate proposed by the Ministry is a challenging task. There are many considerations that will need to be examined before firm numbers can be established, including the availability of supervisory capacity, research funding, graduate student funding, and space, as well as implications for the University's budget. We will examine these issues under two headings: the academic case and the business case.

III. The Academic Case

The most important consideration from the academic point of view is fit with the academic mission and vision of the University. As a premier research-intensive educational institution, the University of Toronto must maintain a sizable, strong, high-quality graduate presence.

The importance of graduate studies and their centrality to the goals of discovery and research at the University have been highlighted in *Stepping Up*, which states:

> *We will recruit undergraduate, professional and graduate student cohorts with varied interests, experiences and abilities as well as the strongest academic records. We will continue to guarantee that no undergraduate admitted to our university is unable to enter or continue as a consequence of financial need. We will improve our graduate funding guarantee over the next years. …*
>
> *Our discovery and knowledge will provide important leadership nationally and internationally. We will provide leadership in research that defines emerging intellectual landscapes. …*
>
> *We will ensure a high quality of student experience at the University of Toronto, both in the classroom and beyond the classroom, and we will ensure a high quality of graduate supervision.*

These themes will continue to guide our planning process as we examine the desirability of increasing graduate enrolment.

Graduate students are the life-blood of university research. Sustaining and expanding the current research effort is dependent on the availability of excellent graduate students. Furthermore, as teaching assistants, graduate students make a valuable contribution to teaching. A larger number of graduate students increases our ability to match their skills and background to the needs of individual courses and student groups.

Stepping Up has focused our attention on the need for new initiatives to enhance the student experience. Prominent among these initiatives is to increase the exposure of undergraduate students to research. Students need to experience the excitement of participating in research projects that explore the frontiers of knowledge, and such projects abound at the University of Toronto. Graduate students can play an important role in providing this experience, as mentors, teachers and supervisors.

Graduate enrolment is now a well-established and integral component of overall enrolment planning and management at the University of Toronto. It was a relatively new concept when introduced in the *Raising Our Sights* academic planning cycle, leading to the Orchard Committee and the subsequent introduction of the Graduate Funding Guarantee. As a result of these initiatives, the University is now well-placed to undertake a new round of graduate enrolment planning in response to the opportunities presented by the May budget.

In addition to the fit with the University's academic vision, there are practical constraints that must be taken into account to ensure that program quality is maintained and enhanced as the number of graduate students increases. The following discussion examines some of these issues, giving comparisons to our AAU (American Association of Universities) peers where possible.

Student-to-Faculty Ratio

What is a desirable size for the graduate enterprise?

A possible approach to answering this question is to compare our enrolment to other universities that we consider to be our peers. As part of the *Stepping Up* academic planning process, we identified ten public universities in North America that have a similar profile to the University of Toronto in terms of size and program mix. Figures 1 and 2 show the most recently available comparative data at these universities for student mix and the number of degrees awarded per professor.

Comparisons with AAU institutions should be done with care, because of some inconsistencies in the reported data. For example, the number of graduate students used to derive the ratios in Figures 1 and 2 includes the Faculty of Medicine, but the number of professors does not. Also, many graduate students at the University of Toronto do their research in affiliated teaching hospitals, supervised by professors who hold clinical or status-only appointments and who are not included in our faculty count. These factors tend to inflate the graduate student-to-faculty ratio at the University of Toronto, particularly because of the large size of our Faculty of Medicine.

Although the data in Figures 1 & 2 may provide helpful comparisons, planning will need to be based on our own experience and the circumstances in each graduate unit. Targets will need to take into account the unit's objectives in research and scholarship, the need for teaching assistants, etc. Current graduate student-to-faculty ratio by division is shown in Table 2.

Student Mix

The student mix at the University of Toronto has changed substantially during the past eight to ten years. Table 3 compares student enrolments at the University of Toronto in 1997-98 and 2004-05. Graduate students constituted 19.3% of the student population in 1997-98. This ratio dropped to 18.1% in 2004-05. The corresponding figures for doctoral stream enrolments are 14.6% and 12.3%, respectively. Among our AAU peers, the percentage of graduate students ranges from 17.1% to 29.1%, as shown in Figure 1.

These ratios clearly show the effect of the rapid expansion in undergraduate enrolment that has taken place in recent years, while increases in graduate enrolment were constrained by the limited funding available from the Government. As a result, the objective of maintaining student mix as expressed in the 2000 Framework for Enrolment Expansion remains to be realized. Restoring that mix is highly desirable to provide teaching resources and support for the University's research programs, as well as to enable us to launch the new initiatives envisioned in *Stepping Up* to enhance the student experience.

The percentage of graduate students in the student population is a rough indicator of the intensity of the research effort in the institution. To be in the middle of the range of our AAU peers in Figure 1, we would need to increase the percentage of graduate students by about 6 points. This would require graduate student numbers to increase by 30%.

Supervisory Capacity

Doctoral-stream cohort size must be closely linked to supervisory capacity. Possibly the most relevant parameter in this regard is the number of Ph.D. degrees awarded per professor. Figure 2 shows that the University of Toronto's performance in this regard is about average among our AAU peers. Our goal of ranking among the top research-intensive universities internationally requires that we examine data such as these in Figure 2 and Table 2 in the local context of each graduate unit.

For planning purposes, an assessment of supervisory capacity should include any anticipated changes in faculty complement to the end of the decade. Although some increase is likely, it is too early to estimate numbers with any accuracy. There are many unknown factors, ranging from salary levels to how much new funding the University will receive. Preliminary estimates suggest that the impact of the new funding on faculty numbers will be modest.

Applicant Quality and Pool Size

The University of Toronto attracts a large pool of excellent applications for graduate studies, and as Figure 3 shows, the yield rate on our offers is consistently high. It is important as we consider the possibility of expanding the number of students admitted that we take into account potential changes in the applicant pool. International admissions are, of course, part of overall enrolment. However, only domestic students are eligible for Government funding.

Graduate enrolment in Ontario universities has been growing steadily during the past 15 years, partly due to the increasing number of university graduates and partly as a result of a steadily increasing participation rate. Intake rate at the Master's level increased from 19.1% of the undergraduate class of 1993 to 23.5% of the class of 2001. Ph.D. intake increased from 4.8% to 5.8% during the same period.

Based on the assumption that these trends will continue and given the expected increases in the undergraduate population, the Ministry projects an increase in the applicant pool in the range 70-100% over a 10-year period. This suggests that the size of the pool should continue to allow the selectivity needed in the admissions process to maintain the high quality of our students. However, the applicant pool is discipline dependent, and the number of qualified applicants will not necessarily increase at the same rate in all subject areas.

The double cohort students entered university over a three-year period, from 2002-03 to 2004-05, with admissions reaching a peak in 2003-04. These additional students will begin applying to graduate school in 2006-07. Figure 4 shows the Ministry's projections, including the effect of the double cohort, with and without an increase in the participation rate.

The chart in Figure 4 assumes that double cohort students will move in lock-step to graduate school. A more realistic assessment suggests that applications from this group are likely to spread over a period longer than three years. Students complete their undergraduate degrees in four or five years, because of co-op programs and because many students do not take a full course load each year. Also, students who want to

continue their studies do not necessarily apply to graduate school immediately after graduation.

Another factor that will soften the peak of the double cohort applicant pool is that not all students choose to stay in Ontario for their graduate education. The percentage of students leaving the Province can be expected to increase if the number of places or the support for such places, for example through scholarships, does not increase in proportion to the applicant pool.

In summary, the applicant pool is projected to increase steadily, reaching double its current size in about ten years. Superimposed on this growth will be a soft peak due to the double cohort, starting in the 2006-07 admission cycle. Thus, based on applicant pool considerations alone, an expansion of our graduate programs would appear to be well justified, particularly because the increase in the size of the pool is expected to be sustained in the long term.

IV. The Business Case

A strong academic program must be properly supported. The resource implications of the proposed expansion of the graduate program need to be carefully examined, including

- Research funding
- Financial student support
- Space
- University budget

Research Funding

Increased graduate enrolment in the doctoral stream amounts to an expansion of the University's research enterprise. This means that research funding needs to be increased, both to provide financial support to students and to support their research and scholarship.

The level of available research funding does not influence the size of the graduate student population in the same way in all disciplines. In engineering and the sciences, there is a very strong link between the research funding available and the number of students that can be supported. Additional research funds are needed for each new student for the purchase of equipment, materials, etc. The needs in other areas may not be as critical. Hence, the extent to which research funding is likely to be an important factor in the planning process is expected to vary among Faculties and SGS Divisions.

What increases can we expect in research funding? The University of Toronto enjoys a high success rate in attracting research funds from the Federal Tri-councils, from the Province and from the private sector. An increase in faculty complement would undoubtedly bring some new research funding. However, unless the total expenditures on research by the two levels of government are increased, we cannot realistically anticipate a significant increase in research funding in the university.

Planning for graduate enrolment expansion should be accompanied by an aggressive campaign to increase research funding, both at the Federal and Provincial levels. The recently announced Ministry of Research and Innovation in Ontario may bode well in this

regard. It would be helpful to link the development of priorities for the new ministry to the support of graduate expansion, as graduate students will be an important vehicle for carrying out the initiatives the new Ministry will undertake.

Student Support

Introducing the funding guarantee for doctoral students at the University of Toronto was a bold and highly beneficial initiative, and other universities are following suit. In fact, the Ministry is likely to require some form of institutional assurance of funding in the proposed bilateral Accountability and Funding Agreements to be signed with each university. However, the funding guarantee comes at a considerable cost, and may well turn out to be a key limiting factor in planning for graduate expansion.

Our current commitment is to provide, as a minimum, funding equal to tuition plus $12,000 for each student during five years of a doctoral study. This level of funding was established in 2001 and will soon need to be revised upwards. For planning purposes, it should be assumed that the minimum funding guarantee could be raised to tuition plus $15,000 for all eligible doctoral-stream students by 2009-10 at the latest.

Sources of graduate student funding include:

- External scholarships
- Research Assistantships
- University scholarships
- University's operating budget, including TA funding

Except for the Provincial Operating Grant, no information is available at this time about the potential increases, if any, in other funding sources. A few observations about these sources are given below.

External Scholarships ─ Currently, students at the University of Toronto earn about $36M annually in external scholarships and awards. If the total number of scholarships remains constant nationally and provincially, success rates will drop as the number of applicants rises. Our objective is to continue to attract the best students. Hence, we can expect a modest increase in external scholarship based on a larger share of a fixed pool[2].

Research Funding ─ Research funding is subject to the same constraint of a fixed pool, unless new allocations are made federally or provincially. We are currently spending over $26M from university-based research grants on graduate student support. This level of spending will need to increase.

University Scholarships ─ With the reinstatement of the OSOTF program, now called the Ontario Trust for Student Support, we should see a steady increase in the number of internal scholarships. Assuming a share of $10M per year in new endowments, OTSS can be expected to yield $3.2M annually by the end of the decade. An additional $2.2M is expected from the year-end grant received last April.

[2] The Provincial Government has not signaled any plans to increase the budget of the Ontario Graduate Scholarship program.

Operating Funds ─ The sources above are not likely to be sufficient to meet the University's needs for student support. Therefore, it will be necessary to allocate a significant portion of operating revenues to graduate student funding. Much of this could be provided to students in the form of employment income, either as teaching assistantships or under new initiatives aimed at enhancing undergraduate experience at the University. As more external funding becomes available, spending from the operating budget on student support can be reduced.

Students in professional Master's programs are not included in the graduate funding guarantee. Instead, they are eligible for support from the University's student-aid program, which is funded from tuition revenue. The University sets aside 30% of increases in tuition revenue for this purpose.

Research funding and student support are two crucial components of our expansion plans. Increasing the available funding must be given high priority in our advocacy with both the Provincial and Federal Governments.

Space

Over the past ten years the amount of space per student on the University's three campuses has decreased, and the gap between what exists and the amount of space recommended by the COU space standards has widened, despite the significant amount of construction that has taken place. Graduate student space on the St. George campus stands at 40% of the recommended value. Some additional space is available in laboratories and in the library. Space is much less of a constraint at the Scarborough and Mississauga campuses.

The Province will provide $550M to support capital programs that will create new space for graduate students. Universities will receive the equivalent of principal and interest payments on a loan equal to their shares of this amount amortized over 20 years. Funding will be provided so long as we create the space, which can be either new or renovated. We don't actually have to take a loan. On average, the capitalized value is expected to be about $39,000 for each new graduate student. The methodology for distributing these funds has not been finalized.

The Ministry has estimated that the sum of $39,000 would create an average space allocation of 7.8 nasm per graduate student, assuming that the mix of humanities and science students remains at current ratios, with an estimated cost of $5,000 per nasm. Based on recent experience, the Capital Projects Office of the University of Toronto has recommended a rate of $6,500 per nasm for new construction.

Graduate student housing is another critical space issue that will need to be addressed. Graduate House, Charles Street, the Chestnut and Massey College provide accommodation for some of our graduate students. Future needs will have to be considered as we undertake graduate expansion.

Budgetary Implications

Ontario's May 2005 Budget includes $21.5M for graduate expansion in 2005-06, rising to $170M in 2007-08 and $220M in 2009-10. This is new funding above that provided in 2004-05. It is intended to increase graduate enrolment in the Province by 14,000 students over 2002-03, according to the schedule shown in Table 4. Note that the base years for

funding increase and enrolment increase are not the same. The increases that have taken place from 2002-03 to 2004-05 are counted as part of the expansion. However, either they have already been funded or will be added to the pool of unfunded BIUs.

Discussions are currently in progress regarding the allocation of the available funding to universities. Allocations of graduate expansion funding during the past four years were based on a scheme known as the Consensus Proposal of 2002. According to this proposal funding is distributed among universities based on a weighted sum of a number of measures, including research funding and current graduate enrolment. Other alternatives are being discussed. For example, universities may be asked to submit proposals describing capacity for expansion based on measures such as those discussed in this paper.

In a preliminary submission to the Ministry at the end of July, the University proposed to expand graduate enrolment over 2004-05 levels by approximately 3,300 eligible students. This figure is likely to be revised upwards following the early submissions from the Faculties, which suggest that there is interest and capacity within the University to increase the number of graduate students further.

The information available at this time is not sufficient to estimate the budgetary impact of graduate expansion with any accuracy. For planning purposes, net funding to the divisions may be estimated at $14,000 for a Master's student and $24,000 for a Ph.D. student. These figures represent total divisional funding, including any amounts that may be needed to provide financial support for graduate students.

These tentative budgetary figures underscore the importance of urging both the Provincial and Federal Governments to increase the number and value of the graduate scholarships available. In the absence of new scholarships, most of the increase in operating funds will be needed to meet the funding guarantee. In turn, the opportunities to invest in enhancing the student experience will be much more limited.

V. Divisional Submissions

The University's graduate enrolment plan will be developed based on the plans of all graduate units, which should address the issues discussed above with reference to the local context. In particular, these plans should include:

- Proposed increases in graduate intake from 2006-07 to 2009-10, showing domestic and international student numbers by program.
- Resulting total enrolment after taking account of the flow through of intake increases. Because of the length of the Ph.D. program, total enrolments are not expected to reach a steady state until 2012-13 or beyond.
- An assessment of supervisory capacity.
- Current level of research funding and estimates of the new funding needed.
- A plan to meet the funding guarantee and the needs of professional Master's students.
- An assessment of existing graduate space and any new space needed to support the expansion.

- Any initiatives to enhance the student experience, increase retention rates, reduce completion times, and strengthen the overall quality of our graduate programs.

VI. Concluding Remarks

Graduate education is fundamental to the mission of the University of Toronto. Given recent changes in enrolment and our objective of ranking among the world's top research-intensive universities, a substantial increase in graduate enrolment is highly desirable and would be well-justified. Fortuitously, the recent Ontario budget has created an almost unprecedented opportunity to do so, with full per-student operating grant funding from the Province. The University should take advantage of this opportunity to rebalance the student mix between graduate and undergraduate programs.

Graduate expansion brings with it significant challenges that must be examined carefully. Because of the nature of the graduate operation and the graduate admissions process, planning must begin at the level of individual graduate units. The University's overall plan will be an integration of departmental and divisional plans.

Table 1, Actual Enrolment Growth, 2000-01 to 2004-05

GRADUATE	2000-01	2001-02	2002-03	2003-04	2004-05
Professional Masters**					
APSE	185	226	264	226	169
ARCH	109	174	231	254	292
A&S-All Campuses	85	110	162	186	194
Dentistry	61	57	65	63	70
Forestry	33	23	32	35	25
FIS	148	155	170	246	236
Management	451	485	619	712	769
Medicine	256	364	495	525	584
Music	67	71	63	57	59
Nursing	139	136	151	164	185
OISE	505	484	514	548	522
SGS Centres & Institutes	66	69	67	74	79
Social Work	220	233	229	221	231
Other Professional Masters***	-	4	-	2	5
TST	4	7	7	5	4
Total Prof Masters	**2,329**	**2,597**	**3,068**	**3,317**	**3,425**
Doctoral-stream Masters					
APSE	459	485	531	561	535
A&S-Humanties	269	286	240	228	279
A&S-Social Science	167	168	153	165	170
A&S-Physical Sciences	257	224	241	256	221
A&S-Life Sciences	115	112	100	93	112
A&S-All Campuses	**809**	**792**	**734**	**743**	**781**
Dentistry	11	17	15	13	13
Forestry	17	18	23	27	20
Law	27	40	39	62	51
Medicine	689	708	707	762	793
Music	23	25	33	23	16
Nursing	4	2	1	0	-
OISE	186	218	247	197	158
Pharmacy	26	20	27	35	39
Phys-Ed	16	21	20	20	15
SGS Centres & Institutes	90	90	80	72	85
TST	59	41	59	73	80
Total Doc-stream Masters	**2,415**	**2,476**	**2,515**	**2,589**	**2,586**
Doctoral-stream PhD					
APSE	334	384	419	454	522
A&S-Humanties	716	687	705	693	736
A&S-Social Science	325	310	333	330	354
A&S-Physical Sciences	388	442	499	534	567
A&S-Life Sciences	183	209	213	209	188
A&S-All Campuses	**1,612**	**1,648**	**1,750**	**1,766**	**1,845**
Dentistry	16	18	21	25	26
Forestry	37	47	42	40	38
FIS	28	31	33	39	32
Law	36	36	40	52	49
Management	52	58	65	68	73
Medicine	725	763	791	819	866
Music	30	37	37	36	40
Nursing	29	34	37	47	51
OISE	762	808	849	838	780
Pharmacy	35	36	46	58	64
Phys-Ed	17	20	18	20	22
SGS Centres & Institutes	107	109	106	91	101
Social Work	55	53	52	48	50
TST	194	192	192	212	212
Total Doc-stream PhD	**4,069**	**4,275**	**4,498**	**4,615**	**4,771**
TOTAL GRADUATE	**8,814**	**9,347**	**10,082**	**10,520**	**10,782**

** Including Specials & Diplomas

*** Other Professional Masters includes: Law, Pharmacy and PE&H

Table 2. Faculty Counts and SGS Membership -- 2004-05

Faculty	Dctrl. Strm. Masters	Ph.D.	Enrolment Fall FTEs	Prof Ranks - Tenured/ Tenure Strm	Prof Ranks - Non Tenure Strm	Total Prof Ranks	Enrolment per Professor	Faculty Members of SGS*
APPLIED SCIENCE AND ENGINEERING	535	522	1,057	192	5	197	**5.4**	358
ARTS AND SCIENCE - ALL CAMPUSES	782	1,845	2,627	964	63	1027	**2.6**	1,572
Division 1: Humanities	279	736	1,015	357	38	395	**2.6**	680
Division 2: Social Sciences	170	354	524	256	10	266	**2.0**	336
Division 3: Physical Sciences	221	567	788	215	12	227	**3.5**	332
Division 4: Life Sciences	112	188	300	136	3	139	**2.2**	224
DENTISTRY	13	26	40	37	8	45	**0.9**	69
FORESTRY	20	38	58	13	0	13	**4.5**	34
INFORMATION STUDIES	0	32	32	12	0	12	**2.7**	28
LAW	51	49	100	47	0	47	**2.1**	55
ROTMAN MANAGEMENT	0	73	73	69	5	74	**1.0**	96
MEDICINE	793	866	1,658	176	410	586	**2.8**	1,713
MUSIC	16	40	56	25	2	27	**2.1**	40
NURSING	0	51	51	18	1	19	**2.7**	79
OISE/UT	158	780	938	121	2	123	**7.6**	484
PHARMACY	39	64	103	23	2	25	**4.1**	45
PHYSICAL EDUCATION AND HEALTH	15	22	39	11	0	11	**3.5**	30
SGS CENTRES AND INSTITUTES	85	101	186	16	0	16	**11.6**	171
SOCIAL WORK	0	50	50	20	0	20	**2.5**	68
TOTAL	2,507	4,559	7,068	1,744	498	2,242	**3.2**	4,842

* Only Associate and Full Faculty members included in Supervisory count.

Table 3. FTE Enrolment by Level of Study, 1997-98 vs 2004-05

Level of Study	FTE's 1997-98	% of Total 1997-98	FTEs 2004-05	% of Total 2004-05
Undergraduate - First Entry	28,517	67.7%	40,710	70.3%
Undergraduate-Second Entry Professional			6,691	11.6%
Total Undergraduate			47,402	81.9%
Graduate - Professional Masters/Diplomas			3,377	5.8%
Graduate - Doctoral Stream	6,143	14.6%	7,109	12.3%
Total Second-Entry Professional (Ug & Grad	7,440	17.7%	10,068	17.4%
Total Graduate		19.3%	10,485	18.1%
Total	42,100	100.0%	57,887	100.0%

Table 4. MTCU Proposed Plan for Graduate Enrolment

Graduate Enrolment	2003-04	2004-05	2005-06	2009-10
Actual/Estimated MA Headcount (Full-Time)	16,307	16,559	17,577	24,974
Actual/Estimated PhD Headcount (Full-Time)	7,690	8,134	8,416	11,958
Actual/Estimated Total Headcount (Full-Time)	23,997	24,693	25,993	36,932
Increase over 2002-03 Headcount (Full-Time)	1,644	2,340	3,640	14,579
Actual/Estimated MA FTE (Full-Time and Part-Time)	19,219	19,490	20,872	30,849
Actual/Estimated PhD FTE (Full-Time and Part-Time)	7,907	8,353	8,438	10,796
Actual/Estimated Total FTE (Full-Time and Part-Time)	27,126	27,843	29,310	41,645

Figure 1. Graduate Student FTE as % of Total Enrolment, Fall 2003
UofT vs AAU Peers

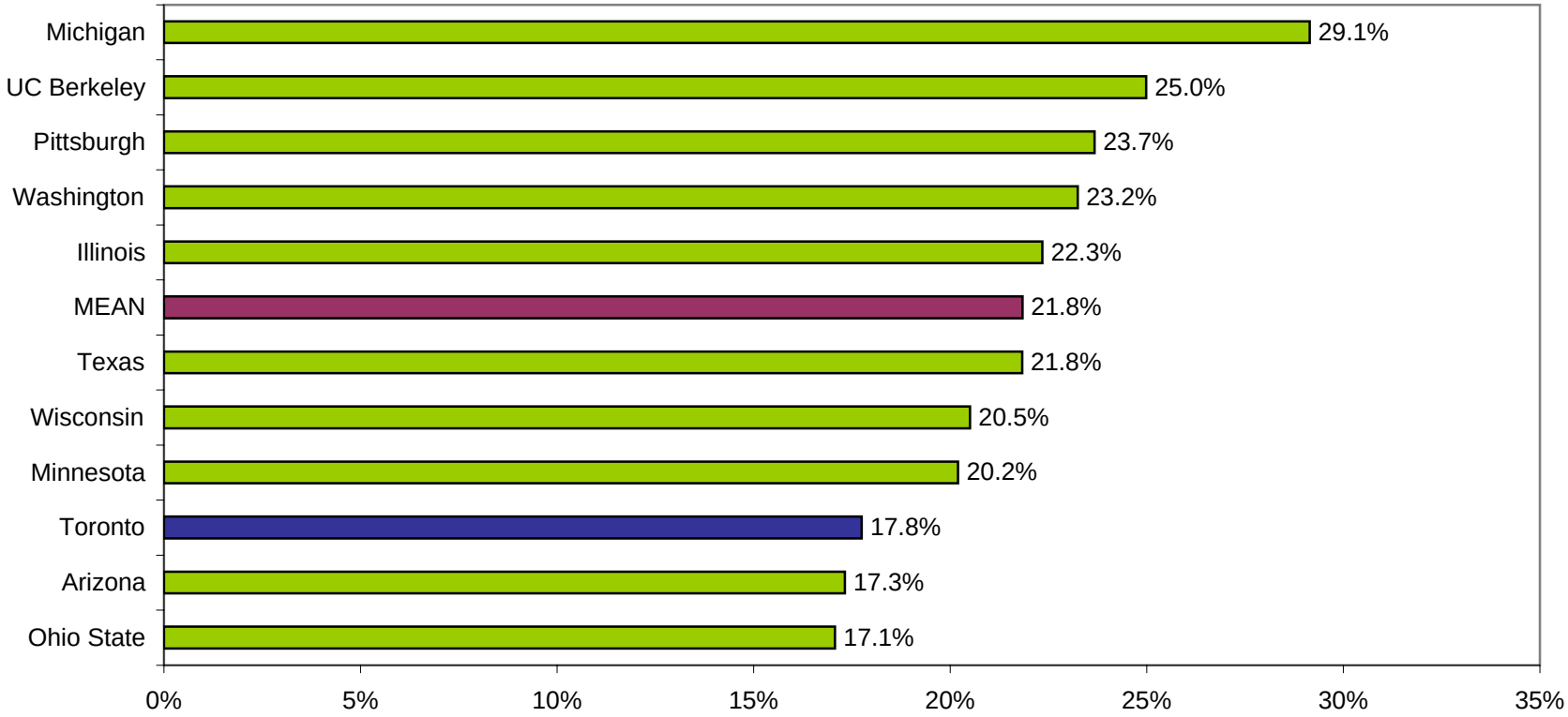


Figure 2. Ratio of Graduate Degrees Awarded To Faculty FTEs, 2002/03
UofT vs AAU Peers

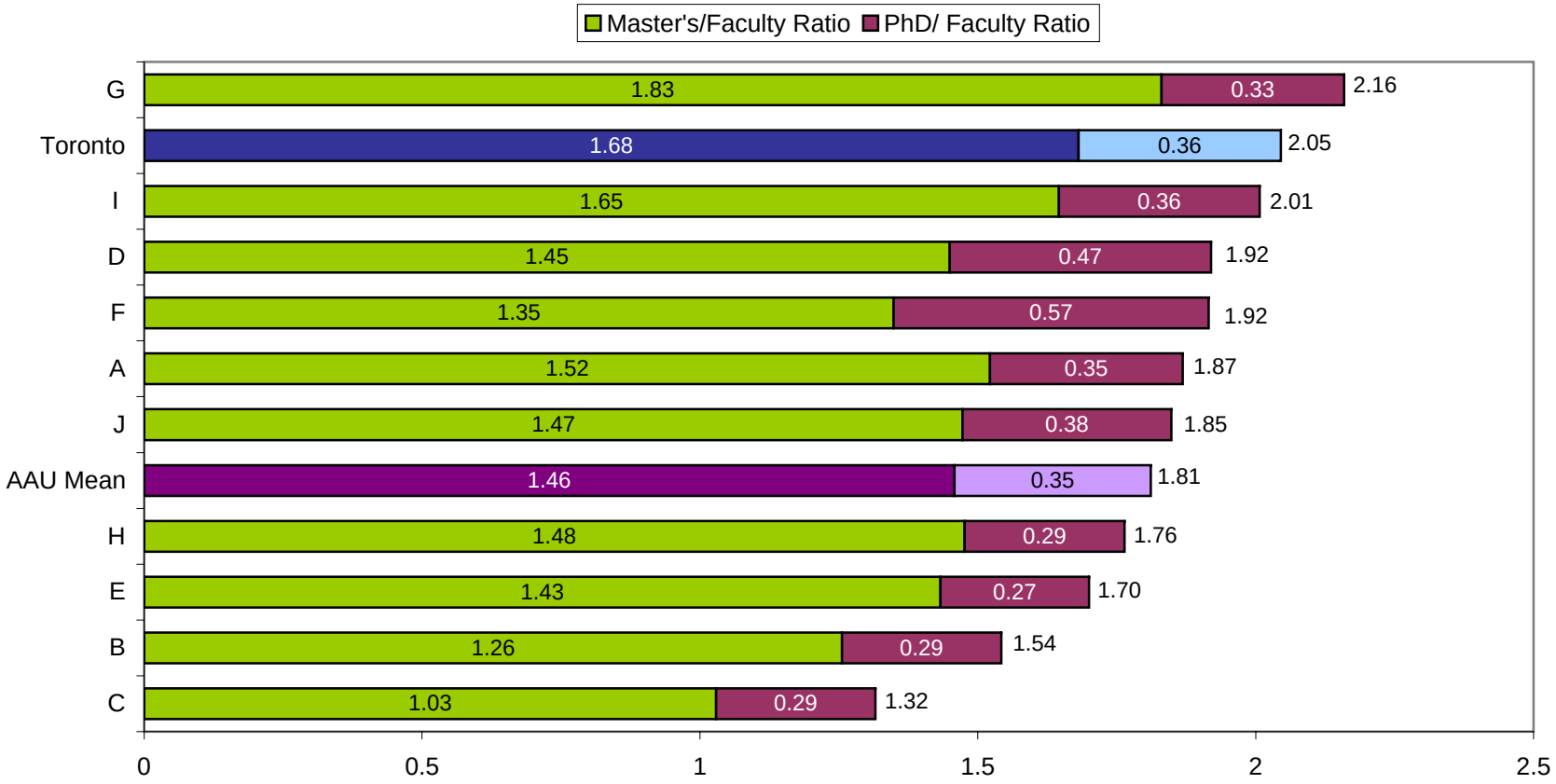
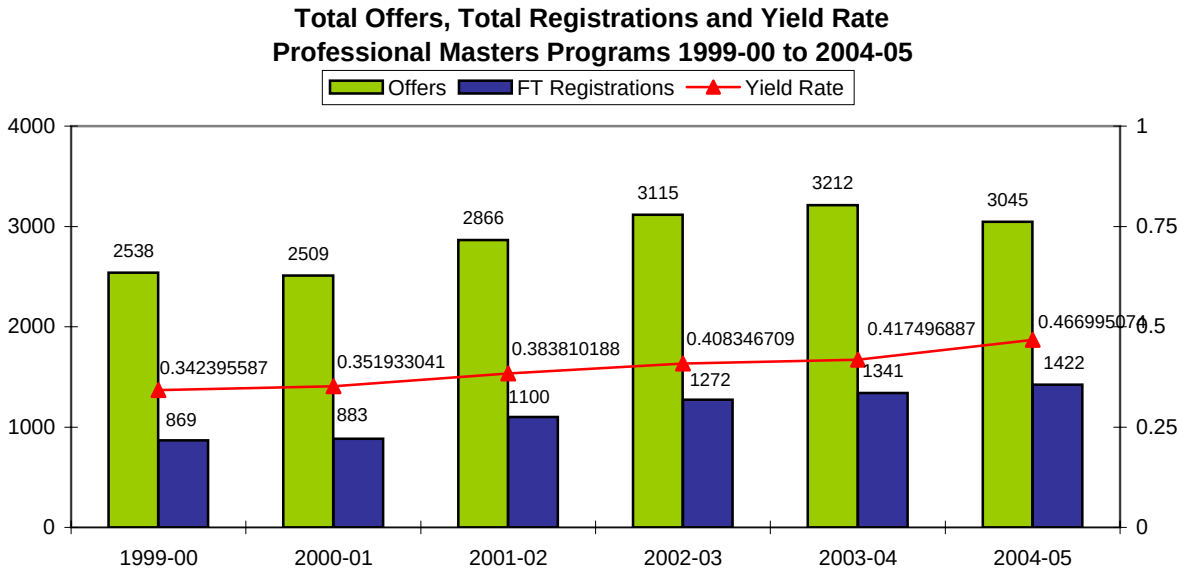


Figure 3. Yield rates in the graduate applications pool



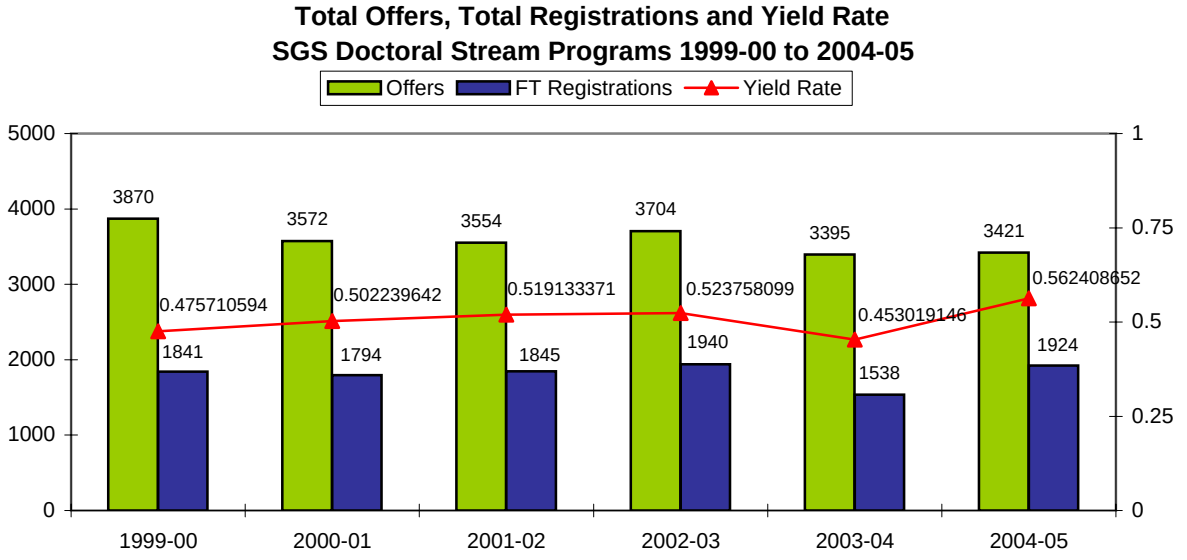
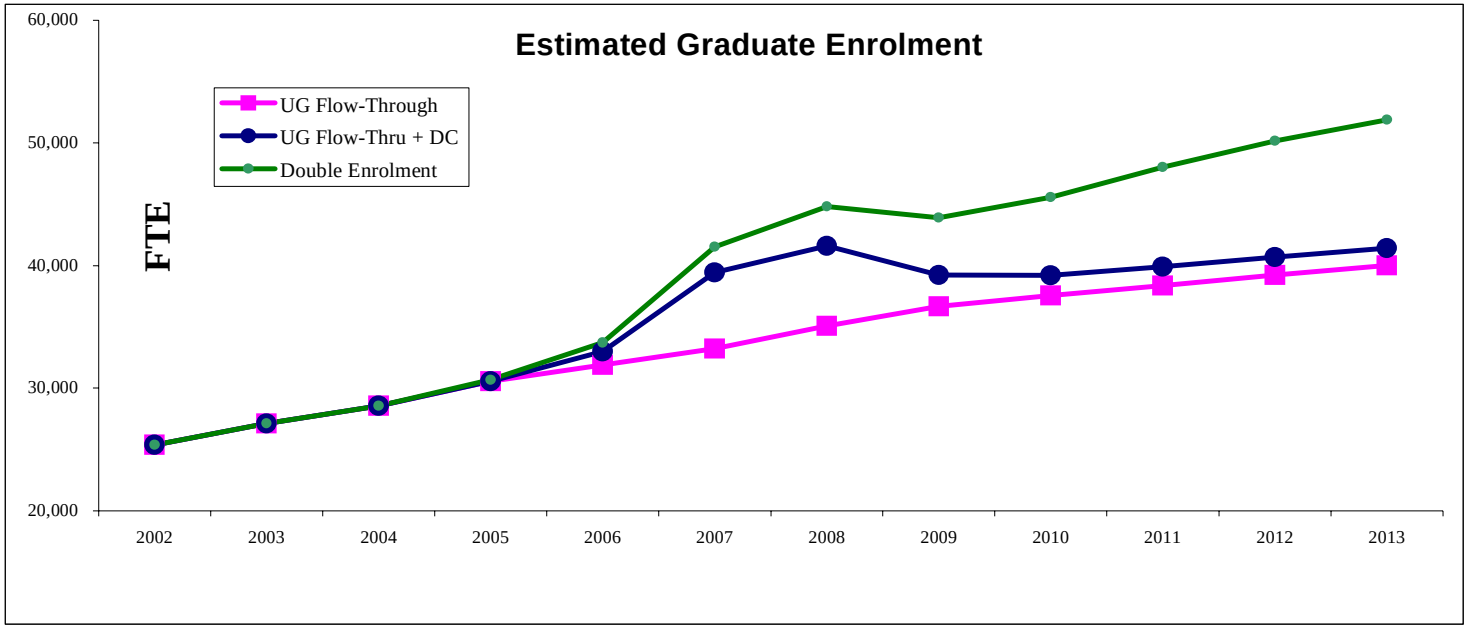


Figure 4. MTCU's Graduate Enrolment Projections



UG Flow-through: Projected enrolment increase excluding double-cohort and with no change in participation rate
UG Flow-through + DC: Projected enrolment increase including double-cohort with no change in participation rate
Double Enrolment: Projected enrolment increase including double-cohort and increase in participation rate

Appendix A

Assessment of Enrolment Expansion: 1998-99 to 2004-05

A. Background

The *Discussion Paper on Expanding Enrolment at the University of Toronto* was issued in 1999 to frame the issues and guide the development of an enrolment plan for the University. Subsequently, *A Framework for Expansion at the University of Toronto* was approved by Governance in 2000, providing the policy structure for the University's response to the opportunities for enrolment expansion.

This appendix summarizes the changes in enrolment that have taken place over the period 1998-99 to 2004-05.

B. Elements of 2000 Framework for Enrolment Expansion

- The *2000 Framework* set-out the following principals to guide the enrolment expansion:

    i. Funding must be made available to allow expansion on terms that do not jeopardize but rather improve the University's capacity to advance its mission. It must allow for maintenance or improvement of student-faculty ratios and research intensity.

    ii. Enrolment expansion will occur only to the extent that the level of minimum entering averages is maintained or increased.

    iii. The time for phasing out of the 15-credit degree may vary across campuses, taking into account their respective levels and rates of enrolment growth as well as curricular development.

    iv. The University's response to different opportunities over time should not yield unintended distortions in the overall balance across levels and areas of study, even on a transitional basis (with the possible exception of first-entry undergraduate vs second-entry and doctoral stream programs during the double-cohort years).

    v. The University's response to different opportunities over time should not compromise, even on a transitional basis, the quality of the campus-based experience.

    vi. Given the critical importance of what is done during periods of transition and expansion, the structure of academic leadership and administrative support must be strengthened to ensure that there is neither dilution of quality nor weakening of the University's capacity to advance its mission.

- The *2000 Framework* provided broad targets for undergraduate expansion at all three campuses. In addition, targets for enrolment expansion in both undergraduate and graduate second-entry programs and doctoral-stream programs were incorporated into the *Framework.*

- Under the direction of the Provost, a process was established to propose specific targets in each of these areas. In 2001, the Working Grouping on Enrolment Expansion was established to "develop the implementation plan for enrolment growth".

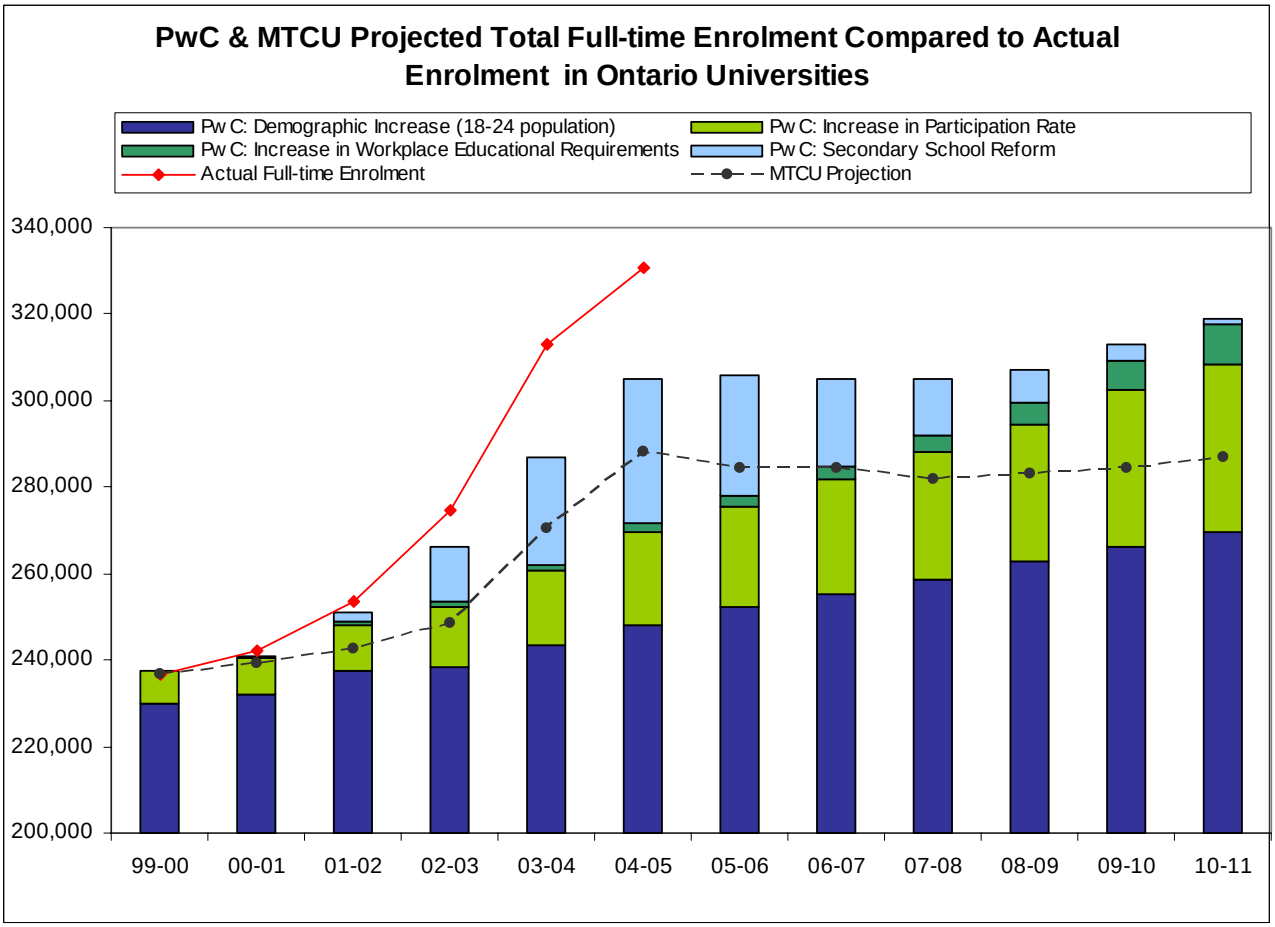
- Enrolment targets were subsequently developed, reviewed each year and reported to Governance through the Planning and Budget Committee on an annual basis.

C. Recent Enrolment Expansion History: 1998-99 to 2004-05

C.1. Ontario University System Expansion

- In 1998-99, PricewaterhouseCoopers (PwC) was contracted by the Council of Ontario Universities (COU) to analyze enrolment projections for Ontario universities. The study's findings reported that, due to a combination of factors, including secondary school reform, a substantial growth in the 18-24 year old population, increasing rates of participation in university education and changing workplace requirements that demand higher educational attainment, enrolments were likely to swell by an additional 88,900 (40%) full-time students over the next decade. The MTCU/COU Working Group on University Capacity used the PwC projection as a starting point for determining the resources required to accommodate the increase. A revised projection, including a lower participation rate assumption was later developed by MTCU and used as the basis for the initial funding committed in the 2001 Ontario Budget.

- Between 2000-01 and 2004-05, the actual enrolment in Ontario universities exceeded both PwC's and MTCU's original projections. In 2004-05, 26,000 more full-time students were enrolled in Ontario universities than had been originally projected by PwC. Higher retention rates, particularly between third and fourth years, and stronger participation rates explain most of the variance.



The stacked bars represent the enrolment demand projected by PwC due to the combined factors. The dotted line represents MTCU's projection based on a reduced participation rate assumption. The solid line represents the actual total full-time Ontario system enrolment.

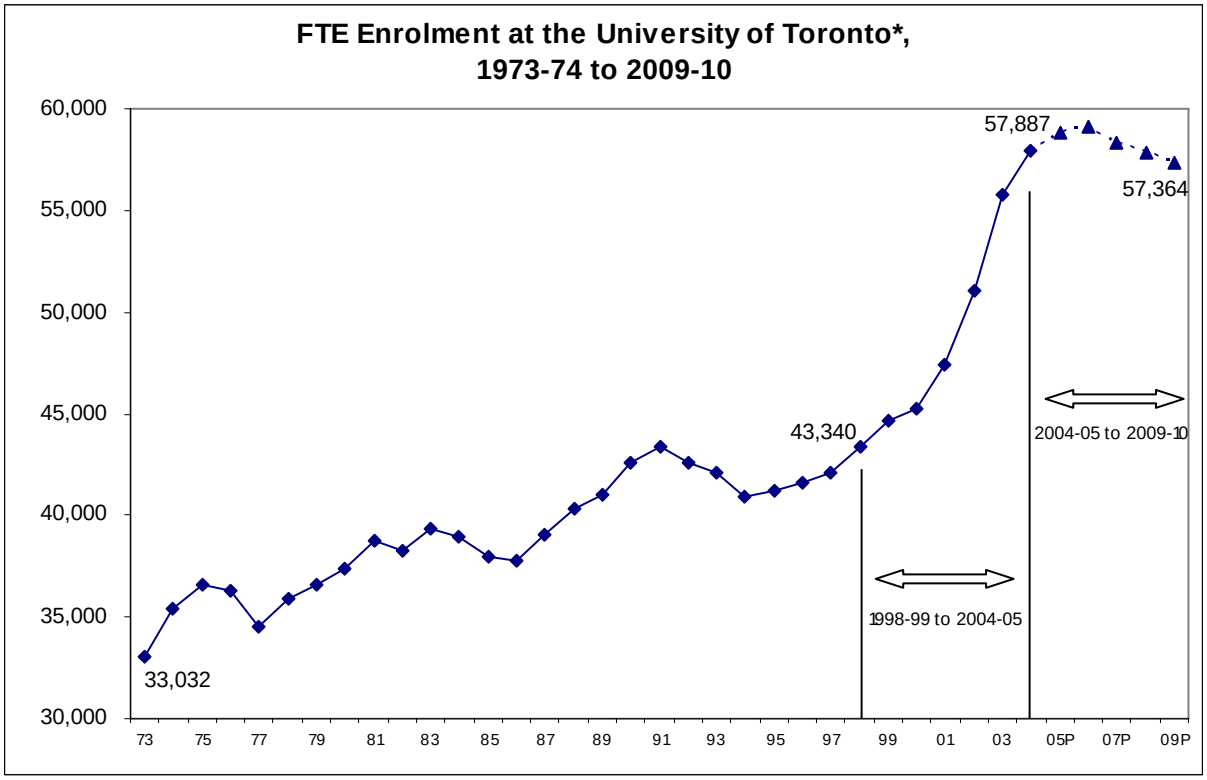
C.2. University of Toronto's Expansion: 1998-99 to 2004-05

- In response to the projected growth, the University of Toronto engaged in a process to consider its a plan for enrolment expansion. The key features of the actual enrolment expansion that occurred include:

  i) Overall Growth
  ii) Change in Mix by Level
  iii) Change in Mix by Discipline Category
  iv) Comparison to Original 2000 Framework Plan Targets
  v) Other Plan Considerations:
  a. Academic Preparation of Students
  b. Registrations and Yield Rates
  c. Student Experience: Student-Faculty Ratios

C.2i. Overall Growth:

- The chart below illustrates that since 1973-74, the University of Toronto's FTE enrolment has grown 75%. Over the last planning period, from 1998-99 and 2004-05, the University's enrolment has grown 34%. Planned growth between 2004-05 and 2009-10, excluding the graduate growth that is currently under discussion, is -0.9%.



- Includes OISE graduate FTEs throughout for purposes of comparability; Excludes TST. P = projected.

- The table below indicates that as of Fall 2003, the University of Toronto's St. George campus enrolment was the fifth largest in North America.

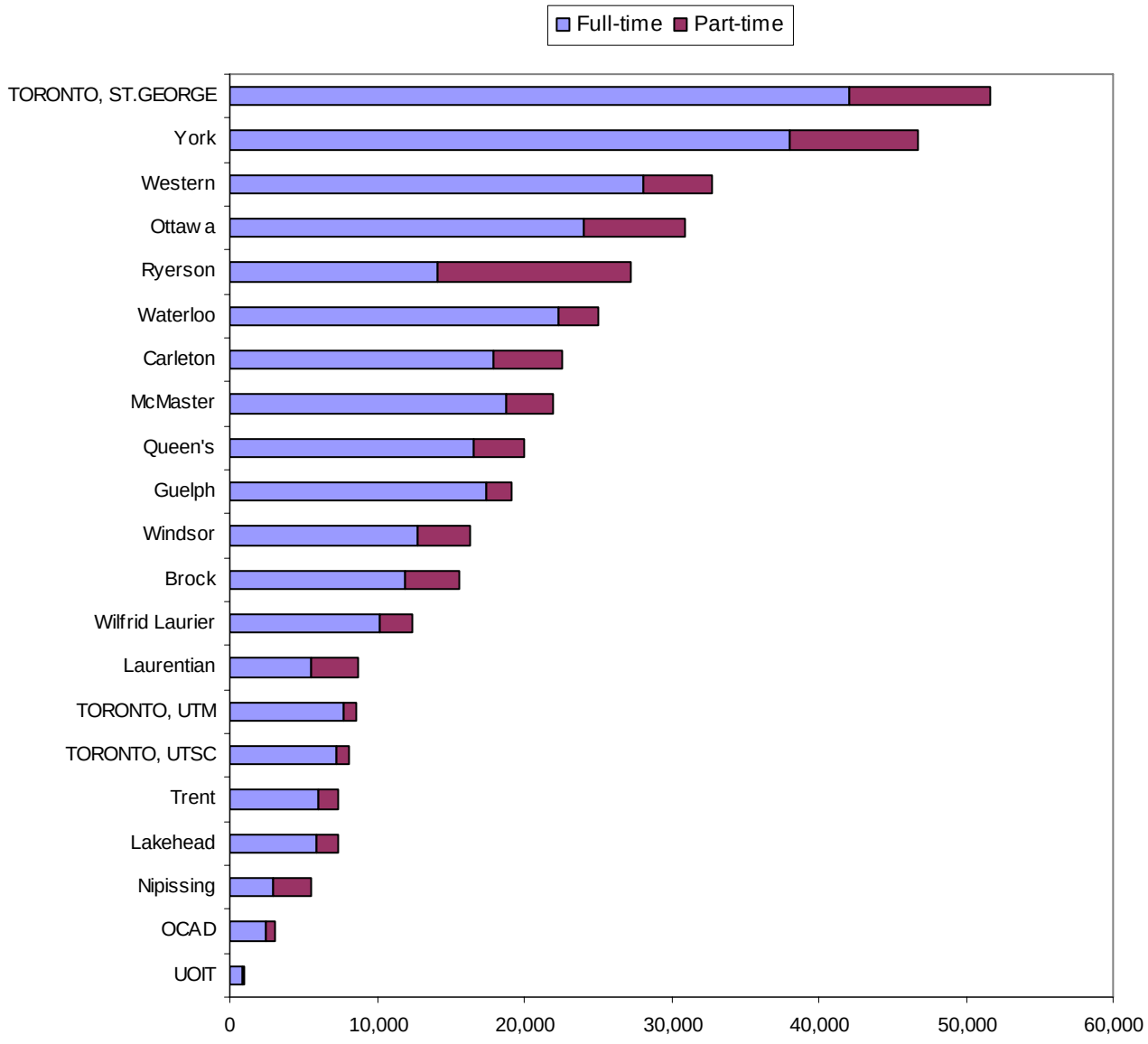
Ten Largest University Campuses by Enrolment, Fall 2003

Campus	Enrolment (Headcount)
University of Texas – Austin	51,426
Ohio State University – main campus	50,731
University of Minnesota – Twin Cities	49,474
Arizona State University – main Campus	48,901
University of Toronto – St. George campus	**48,586**
University of Florida	47,858
Texas A&M University	44,813
Michigan State University	44,542
Pennsylvania State University – main campus	41,795
University of South Florida	40,945

Source: Integrated Post-secondary Education Data System (IPEDS) Fall Enrollment, 2003.
Note: The list above is limited to institutions classified as Carnegie Doctoral/Research Extensive, i.e. which award 50 or more PhDs a year across at least 15 disciplines.

- Compared to other universities in Ontario, the St.George campus alone has the largest number of students enrolled. Furthermore as chart below illustrates, both of our suburban campuses have enrolment levels greater than the five smallest universities in Ontario.

Full-time and Part-time Student Enrolment by Institution, Fall 2003



C.2ii. Change in Mix by level:

- The expansion that occurred since 1997-98 has resulted in a shift in enrolment by degree level and type. The table below indicates that the proportion of undergraduate students, particularly in first-entry programs, has grown significantly since the late 1990's. In contrast, the proportion of second-entry program enrolment has remained relatively constant while the proportion of doctoral-stream enrolment has declined.

FTE Enrolment by Level of Study, 1997-98 vs 2004-05

Level of Study	**FTE's 1997-98**	**% of Total 1997-98**	**FTEs 2004-05**	**% of Total 2004-05**
Undergraduate - First Entry	28,517	67.7%	40,710	70.3%
Undergraduate - Second Entry Professional			6,691	11.6%
Total Undergraduate			**47,402**	**81.9%**
Graduate - Professional Masters/Diplomas			3,377	5.8%
Graduate - Doctoral Stream	6,143	14.6%	7,109	12.3%
Total Second – Entry Professional (Ug & Grad)	7,440	17.7%	10,068	17.4%
Total Graduate		**19.3%**	**10,485**	**18.1%**
Total	**42,100**	**100.0%**	**57,887**	**100.0%**

- As indicated in the table below, fewer than 5% of the University of Toronto's graduate degrees conferred in 2002-03 were PhDs. This represents a decline from 6% in 1997-98.

Graduate Degrees Conferred, 2002/03
University of Toronto and AAU Peer Universities

University	Degrees Conferred		
	Total Graduate & Undergrad Degrees	Master's Degrees	Ph.D. Degrees
Toronto	**12,447**	**2,746 (22.1%)**	**595 (4.8%)**
Texas – Austin	12,303	2,637 (21.4%)	674 (5.5%)
Ohio State – Columbus	11,732	2,515 (21.4%)	575 (4.9%)
Michigan – Ann Arbor	10,630	3,431 (32.3%)	616 (5.8%)
Illinois – Urbana/Champaign	10,594	2,703 (25.5%)	617 (5.8%)
Washington – Seattle	10,320	2,526 (24.5%)	493 (4.8%)
Wisconsin – Madison	9,432	2,019 (21.4%)	656 (7.0%)
California – Berkeley	9,391	1,834 (19.5%)	772 (8.2%)
Minnesota – Twin Cities	9,389	2,546 (27.1%)	560 (6.0%)
Arizona – Tucson	7,378	1,353 (18.3%)	378 (5.1%)
Pittsburgh	6,415	1,861 (29.0%)	539 (5.4%)

Source: Integrated Post-secondary Education Data System (IPEDS) Completions, 2002/03.

C.2iii. Change in Mix by discipline Category:

- The tables below indicate the enrolment shift that has occurred in both undergraduate and graduate discipline categories during the 1998-99 to 2004-05 period. The University of Toronto's discipline mix in both undergraduate and graduate program enrolments has shifted more to the physical and life sciences.

- The overall enrolment growth at the graduate level that occurred during the 1998-99 to 2004-05 period was largely due to growth in the professional masters programs. The change of the Occupational Therapy, Physical Therapy, Architecture, and Landscape Architecture programs to masters level programs, the addition of four sections of the MBA program, and the development of a few new professional masters programs, including the Master of Biotechnology and the Master of Financial Economics, are examples of the growth that occurred during this period.

FTE Undergrad Enrolment by Disciplinary Group and by Campus
University of Toronto, 2004-05

	1997-98				2004-05			
Disciplinary Group	**UofT Total**	**St. George**	**UTM**	**UTSC**	**UofT Total**	**St. George**	**UTM**	**UTSC**
Humanities and Social Sciences	**17,644**	12,148	2,519	2,977	**24,488**	15,547	4,808	4,134
	(55%)	(53%)	(59%)	(63%)	**(52%)**	(47%)	(66%)	(57%)
Physical and Life Sciences	**14,463**	10,964	1,751	1,748	**22,913**	17,332	2,487	3,094
	(45%)	(47%)	(41%)	(37%)	**(48%)**	(53%)	(34%)	(43%)
Total	**32,107**	23,112	4,270	4,725	**47,402**	32,879	7,295	7,228
	(100%)	(100%)	(100%)	(100%)	**(100%)**	(100%)	(100%)	(100%)

FTE Graduate Enrolment by Disciplinary Group
University of Toronto, 2004-05

Disciplinary Group	**1998-99**	**1998-99**	**2004-05**	**2004-05**
	FTE	**%**	**FTE**	**%**
Humanities	1,278	**16%**	1,274	**12%**
Social Science	3,019	**38%**	3,983	**38%**
Physical Sciences	1,454	**18%**	2,055	**20%**
Life Sciences	2,211	**28%**	3,145	**30%**
Total	7962	**100%**	10,485	**100%**

C.2iv. Comparison to Original *2000 Framework Plan* Targets

- Compared to the original *2000 Framework Plan*, the actual enrolment levels achieved as of 2004-05 approximates the overall planned expansion. The Working Group on Enrolment Expansion developed initial targets in 2001 and made adjustments to the plan based on evolving realities, such as increases in undergraduate applicant demand and funding parameters set by the Ontario Government. These revised targets were then reviewed and approved by Planning and Budget Committee on an annual basis. Differences indicated in the table below between the 2004-05 actual enrolment levels and the original scenario targets, within such categories as doctoral- stream enrolment, are a reflection of these adjustments made during the 2001 to 2004 enrolment planning process.

- While full average funding was provided to support actual undergraduate enrolment growth between 2001 and 2004, graduate enrolment funding was capped at levels significantly less than actual growth. These funding realities resulted in the University setting higher undergraduate targets and lower doctoral-stream targets each year than were notionally planned in 1999-00.

- In addition, the implementation of the student funding guarantee for doctoral-stream students in 2001-02 also imposed limits on divisional plans to expand doctoral-stream enrolment.

Target Scenarios vs Actual Growth for FTE Enrolment Expansion

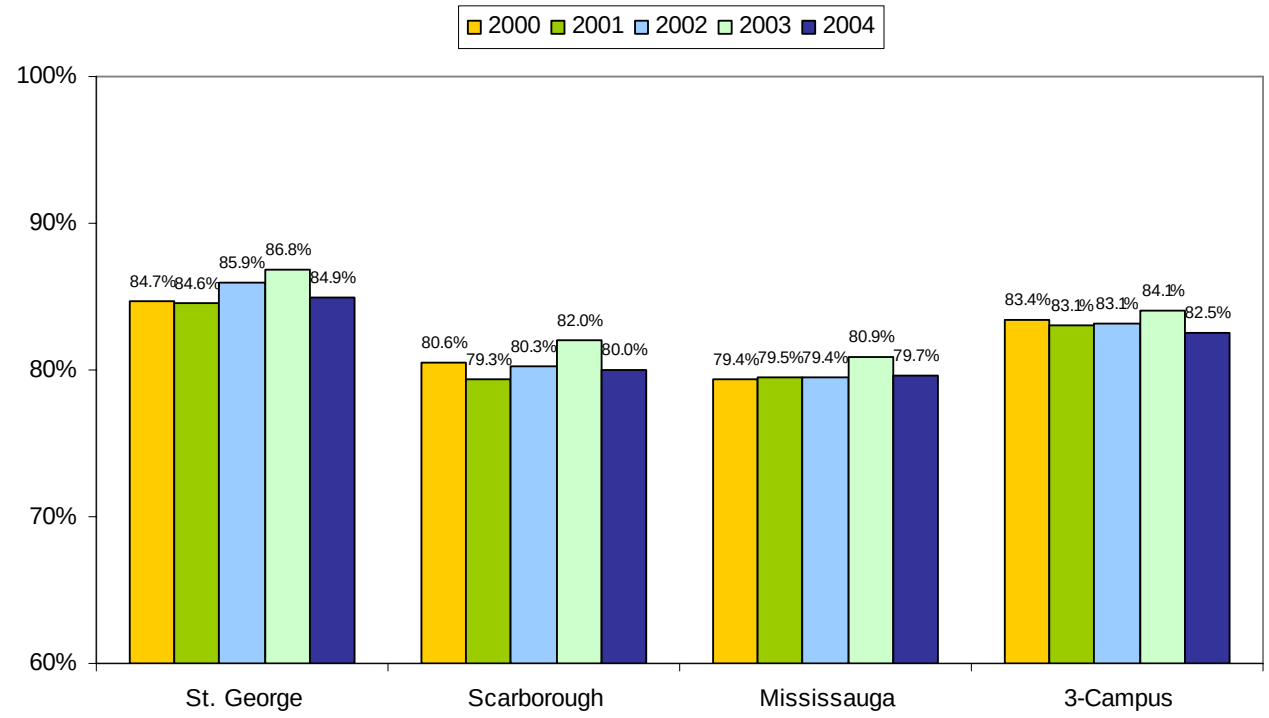
	1997-98 Actuals	Target Scenario	2004-05 Actuals	Enrolment Growth	Percent Increase
First-Entry Undergraduate					
St. George	19,522	25,300	26,187	6,665	**34.1%**
UTM	4,725	6,800	7,295	2,570	**54.4%**
UTSC	4,270	7,500	7,228	2,958	**69.3%**
Second-Entry Professional, Professional Masters, Graduate Diplomas	7,440	10,400	10,068	2,628	**35.3%**
Doctoral Stream	6,143	8,500	7,109	966	**15.7%**
Total	**42,100**	**58,500**	**57,887**	**15,787**	**37.5%**

C.2v. Other Plan Considerations:

a. Academic Preparation of Students

- The *Framework* had originally specified that the enrolment expansion was to occur "to the extent that the level of minimum entering averages is maintained or increased". The chart below indicates that between 2000 and 2004, entering averages for direct-entry students fluctuated very little during this period of significant undergraduate growth.

Entering Grade Averages (Undergraduate Average Mark), All A&S

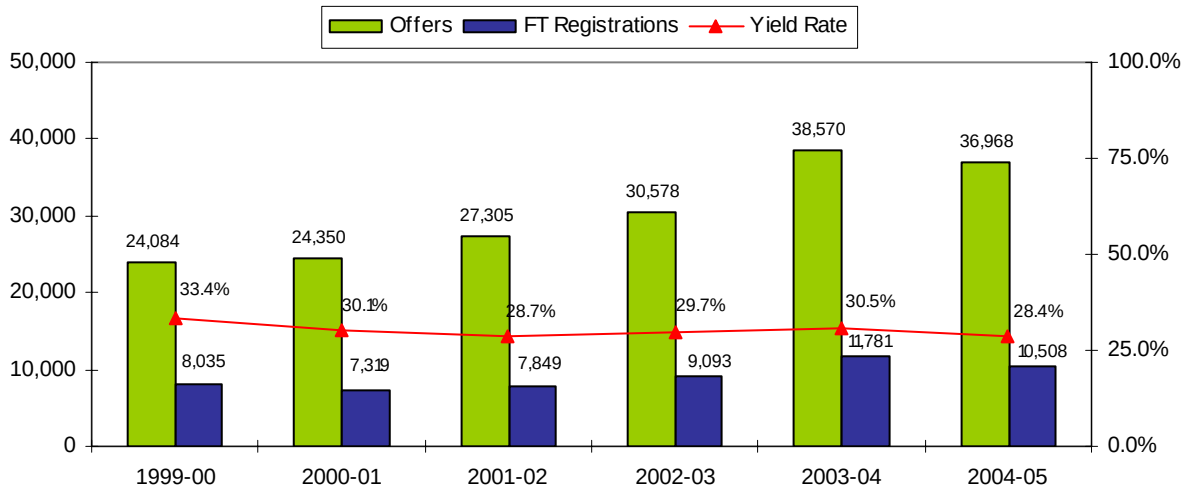


Source: Data provided by Admissions & Awards, UofT.

b. Student Demand: Registrations and Yield Rates

- Student demand is an important factor taken into consideration in making decisions about expansion. Registration statistics and yield rates provide an indication of the success of our recruitment efforts and the general attractiveness of our programs to students. The charts below indicate that our yield rates (registrations as a percentage of offers) remained strong in undergraduate first-entry, undergraduate professional, professional masters and doctoral-stream masters program areas during the 1998-99 to 2004-05 period.

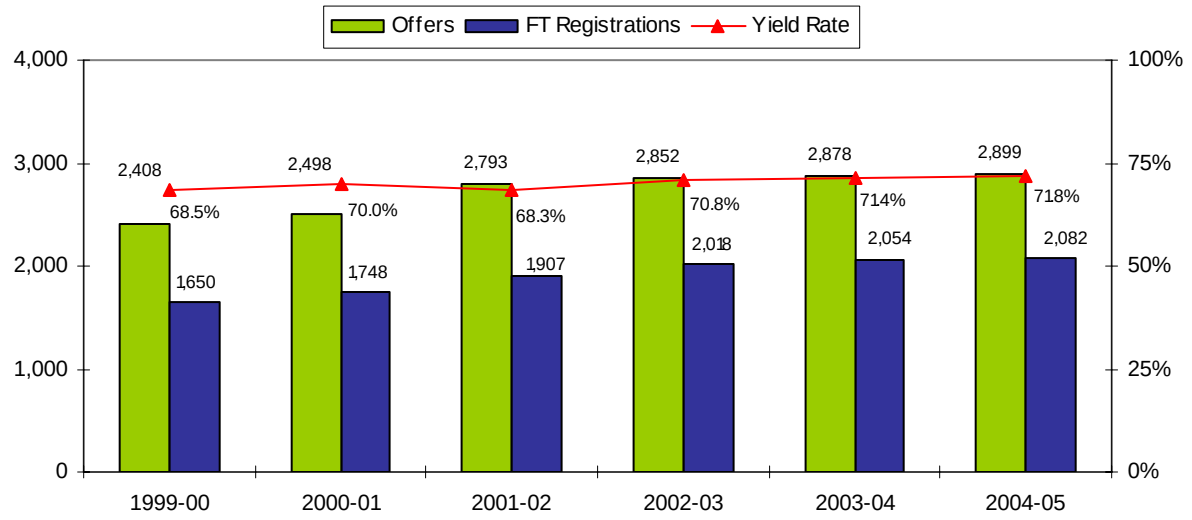
Total Offers, Total Registrations and Yield Rate
Undergraduate First-Entry Programs 1999-00 to 2004-05



Source: Ontario Universities Application Centre (OUAC).
Undergraduate first-entry programs include: Arts & Science St. George campus, UTM, UTSC, APSE, Music, Physical Education and Health. Yield rate is the number of registrations divided by number of offers.

The line above indicates the change over time in the number of students who registered in first-entry programs as a percentage of the number of offers that were made each year.

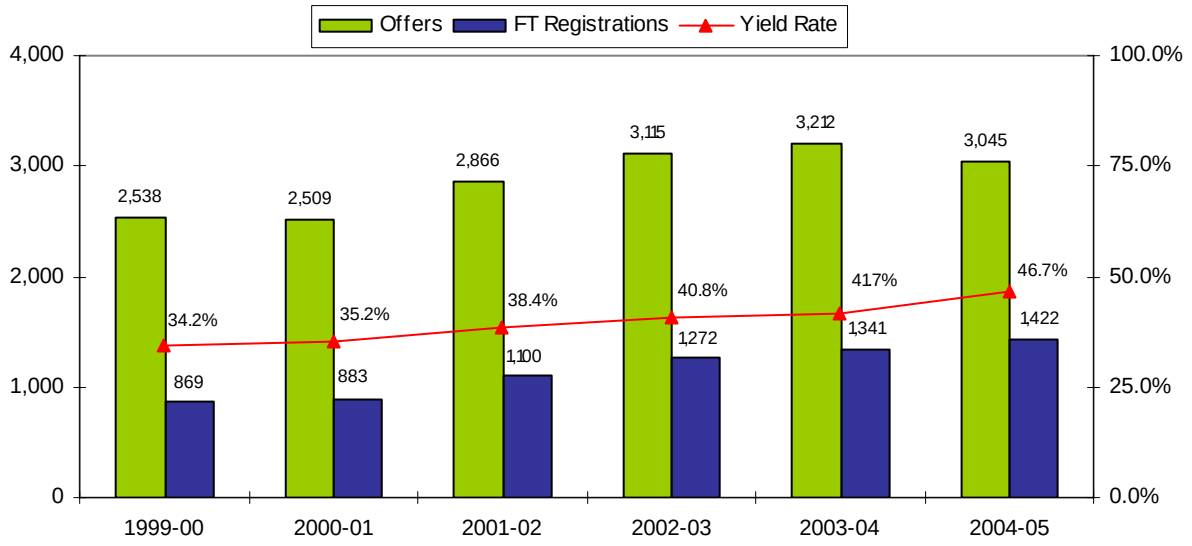
Total Offers, Total Registrations and Yield Rate
Undergraduate Professional Programs 1999-00 to 2004-05



Source: OUAC.
Undergraduate professional programs include: Dentistry, Education, Law, Medicine, Nursing, and Pharmacy. Yield rate is the number of registrations divided by number of offers.

The line above indicates the change over time in the number of students who registered in undergraduate professional programs as a percentage of the number of offers that were made each year.

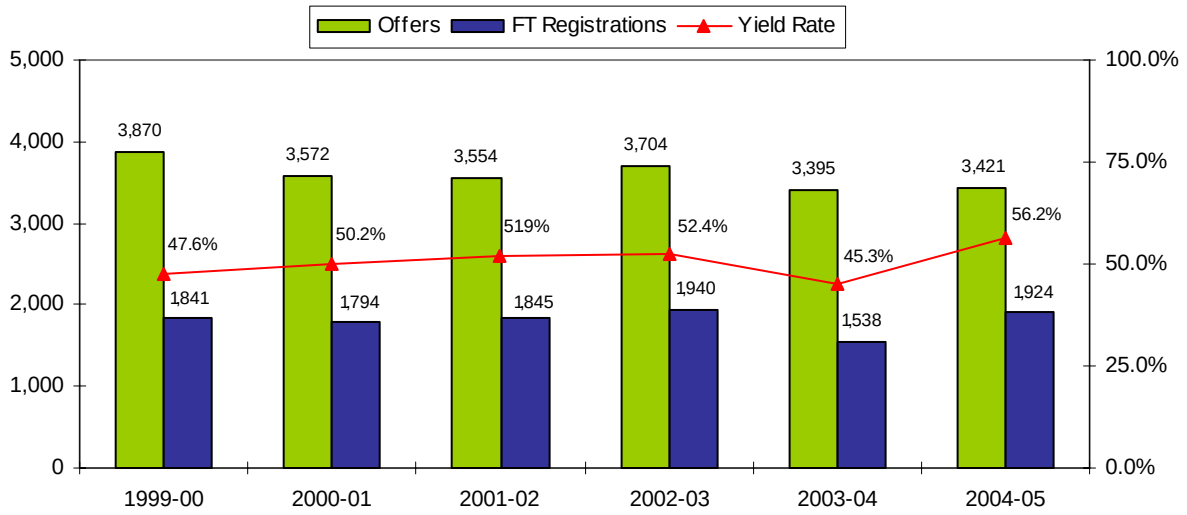
Total Offers, Total Registrations and Yield Rate
Professional Masters Programs 1999-00 to 2004-05



Source: OUAC.
Professional Masters programs include: Executive MBA, Executive MBA (Global), Master of Architecture, Master of Arts - Child Study, Master of Arts - Teaching, Master of Biotechnology, Master of Business Administration, Master of Education, Master of Engineering, Master of Engineering - Telecommunications, Master of Financial Economics, Master of Forest Conservation, Master of Health Science, Master of Industrial Relations & Human Relations, Master of Information Studies, Master of Landscape Architecture, Master of Mathematical Finance, Master of Management and Professional Accounting, Master of Museum Studies, Master of Music, Master of Nursing, Master of Science, Master of Science - Biomedical Communication, Master of Science - Occupational Therapy, Master of Science - Physical Therapy, Master of Science - Planning, Master of Social Work, Master of Spatial Analysis, Master of Studies in Law, Master of Teaching, Master of Urban Design, Master of Urban Design Studies, and Master of Visual Studies. Yield rate is the number of registrations divided by number of offers.

The line above indicates the change over time in the number of students who registered in graduate professional programs as a percentage of the number of offers that were made each year.

Total Offers, Total Registrations and Yield Rate
SGS Doctoral Stream Programs 1999-00 to 2004-05



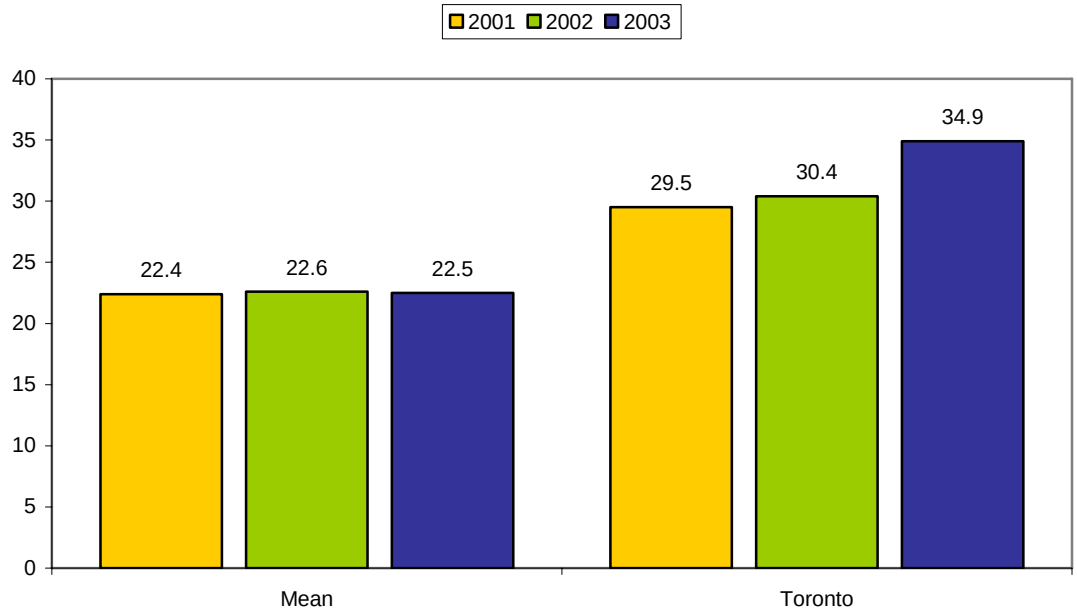
Source: OUAC.
Yield rate is the number of registrations divided by number of offers.

The line above indicates the change over time in the number of students who registered in doctoral-stream programs as a percentage of the number of offers that were made each year.

c. Student Experience: Student-Faculty Ratios

- The ratio of students to full-time faculty in professorial ranks at the University of Toronto has grown to rank highest among the AAU peer universities in 2003.The significant increase in the student-faculty ratio, illustrated in the chart below since 2001 (29.5 to 34.9), reflects the significant growth in undergraduate students during the double cohort period without a corresponding increase in full-time faculty. Overall, this measure reflects the lower level of resources per student at the University of Toronto relative to our US peers.

Student Faculty Ratio
Fall 2001, 2002 and 2003 FTE
Comparison with Mean of AAU Peers



Sources: IPEDS Fall Enrolment Surveys for 2001, 2002 and 2003; AAUP Faculty Salary Survey for Fall 2001, 2002 and 2003.
Means exclude UofT. Faculty data excludes Medicine while the student enrolment data includes Medicine. Faculty data includes both Tenured/Tenure Stream and Non Tenure Stream FT Professorial Ranks. AAU Peers include Arizona, UC Berkeley, Illinois, Michigan, Minnesota, Ohio State, Pittsburgh, Texas, Washington and Wisconsin.