

Quality at Risk:  
An Assessment of the Ontario Government's  
Plans for Graduate Education

AN OCUFA RESEARCH PAPER

ONTARIO CONFEDERATION OF UNIVERSITY FACULTY ASSOCIATIONS

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## Executive summary

In its 2005 Budget, the Ontario government announced it was planning to expand graduate education, adding capacity for 14,000 more students by 2010. The government is to be commended for recognizing the importance of graduate education to the province's economic future. Ontario needs to enhance its research capacity to compete in the global, knowledge-based economy. Critical to this is providing graduate students with a world-class education, which means modern facilities and a robust student-faculty ratio.

Based on available data and interviews with stakeholders, this paper assesses how successful the expansion will be – if it continues as currently planned. The analysis shows that inadequate planning is jeopardizing the program's success and putting the quality of graduate education at risk.

### 1. The quality of graduate education is at risk

**Faculty hiring is lagging** Ontario is not hiring enough faculty to give graduate students a quality education. A graduate student in 2004-2005 spent one-quarter less time with faculty than a student in 1995-96. To reach those 1995-96 quality levels, universities need to hire 2,205 faculty, *over and above* the new hires needed to replace retiring faculty and teach the ever-increasing numbers of undergraduates.

**Student readiness is not being assured** The government needs to provide resources to encourage students towards graduate studies rather than imposing a target. The danger in declaring a goal of 14,000 more graduate students is a possible lack of students seeking graduate studies. This is a potential risk to quality, as universities may either lower admission standards in order to meet enrolment targets or accept more students than they have the capacity for, thus lowering the quality of their programs

**RECOMMENDATION** Provide incentives for students to pursue graduate studies and ensure universities can hire enough faculty to meet expansion needs.

## 2. Operating funding is inadequate for a successful expansion

**Lack of funds is limiting faculty hiring** The government's current allocation of \$220-million in operating funding for graduate expansion is inadequate if Ontario universities are to hire the number of faculty that graduate students need to become world-class teachers and researchers. To hire 2,205 more faculty will cost \$176 million in salaries. Since faculty salary costs make up 29 per cent per cent of university operating budgets, the current \$220-million allocation is scarcely more than a third of what it needed. Operating funding for graduate expansion should be increased to \$608 million – an additional \$388 million.

**Student assistance has not increased** Graduate students need stipends and other forms of financial support so that they can devote sufficient time to conduct high-quality, original research. The government has not increased its funding for graduate student financial support, despite its pledge of thousands more graduate students. In the meantime, it has announced it will allow tuition fee increases of up to eight per cent for next year's graduate and professional students.

**RECOMMENDATION** Operating funding should increase by \$388-million a year, and financial support for graduate students should be expanded.

## 3. Funding to address overdue repairs is inadequate

The average age of a university building in Ontario is 30 years, and usage and the elements have exacted their toll, with many facilities in dire need of repair. The government's current annual allocation of \$27 million for facilities renewal is nowhere near what is needed to restore Ontario's deteriorated university building stock to even a minimal state of repair. Dealing with deferred maintenance to university buildings needs \$73 million a year *at minimum*. To restore existing facilities to optimal conditions would require \$451 million a year.

**RECOMMENDATION** Increase facilities renewal funding to \$451 million a year, up from the current \$27 million.

#### 4. Capital funding is inadequate to meet increased demand

The government has announced \$550 million over five years for the construction of new facilities. That figure is scarcely more than half of what is needed, even without taking into account any increase in unfunded graduate students (largely international students), which would require up to another \$236 million.

**RECOMMENDATION** Boost capital spending to a total of \$1.2 billion.

#### 5. Failure to involve faculty leads to planning mistakes

Faculty have been warning the government that it has not allowed enough time to plan the expansion properly. Concerned the planning process has overlooked key determinants of quality and success, faculty are questioning the wisdom of planning graduate expansion without the involvement of faculty, who not only deliver graduate education but also control its quality.

**RECOMMENDATION** Include faculty in all planning and conduct a survey of faculty every two years to identify successes, issues, and problems.

## Introduction

In its 2005 Budget, the government announced it would be providing resources for a two-phase initiative to expand graduate enrolment at publicly-funded universities. The first phase, to begin in the autumn of 2007 and end in 2008, is intended to increase graduate enrolment by 12,000 spaces. And by 2010, another 2,000 spaces are to be created, for a total of 14,000 additional spaces.

An analysis of the initiative at this time is helpful to those interested in access for qualified students to excellent graduate programs. Based on a review of available relevant university, stakeholder, and government documents, and key respondent interviews, the following research paper provides the basis for measuring how successful the expansion is likely to be if it continues as planned.

There are fundamental issues related to both planning and implementation that should be dealt with as soon as possible, if the plans of the current government for graduate education expansion are to be successful. These include: sustaining and improving both graduate and undergraduate program quality during the expansion; the adequacy of the proposed funding for both operating and capital, and the role of faculty, as deliverers and evaluators of the quality of graduate education, in helping plan the expansion.

## Background

In 2003, the Council of Ontario Universities (COU) released a report on future requirements for graduate education, based on its analysis of projected demand. The report recommended the government establish a 10-year goal of doubling graduate enrolment. It also recommended the government develop a detailed plan for increasing enrolment “...in the next five years, *including the funding mechanism and the implications for graduate enrolments in institutions and disciplines.*” (*Advancing Ontario’s Future Through Advanced Degrees*, November 2003. Emphasis added.)

Two years later, in 2005, an advisory panel led by the Hon. Bob Rae also recommended graduate expansion, to be supported by a separate funding envelope that would provide full funding. His February 2005 report, *Ontario: A Leader in Learning – Report and Recommendations*, advocated \$21 million in new funding for 2005-06, rising to \$180 million by 2007-08. This new funding would be added to the funding now provided for graduate enrolment and, if a university met its targets, it would be rolled into its base funding. Rae also recommended additional post-secondary capital funding, including \$200 million a year for updating current facilities and \$300 million a year over 10 years for the construction of new facilities.<sup>1</sup>

The government’s initiative draws heavily on the recommendations from both the COU and the Rae report. It responds to the government’s objective to promote Ontario’s economic competitiveness through developing a knowledgeable and skilled workforce and through emphasizing economic growth that is based on a knowledge-based, rather than a resource-extraction, economy. The government also wants to accommodate an anticipated increase in graduate education that it assumes will be driven by sharply increased undergraduate enrolment and rising university participation rates.

The base year from which the enrolment increase will be measured is fiscal 2002-03. For that year, Ministry of Training, Colleges, and Universities data cite an enrolment of 17,714 master’s level students and 7,358 doctoral level students. The government has approved near-50-per-cent

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<sup>1</sup> Post-secondary refers to both colleges and universities. With universities normally accounting for two-thirds of capital needs, it can be imputed from the Rae report that they need \$133 million more annually for facilities renewal capital funding and another \$200 million in capital funding for construction.

growth targets through 2007-08 of 8, 574 master's level spaces — a 48.4 per cent increase — and 3,478 doctoral level spaces, a 47.3 per cent increase. (Please see the Appendix for a chart showing base year and proposed growth targets by university.)

The current funding commitment is to reach an additional annual \$220 million in operating funding in 2009-10 and \$550 million more in capital funding through 2010. The government also committed itself to abiding by certain principles in its post-secondary initiatives, including sustaining and improving educational quality.

## Findings

### The quality of graduate education is at risk

The government is to be congratulated for not attempting to steer graduate enrolment towards certain disciplines or degrees. This approach is good public policy as governments have had little success in anticipating where new knowledge and academic growth will be needed. The organic quality of the planning process to date, relying as it does on universities to demonstrate where they feel growth can be achieved while preserving quality, should continue – although with more consultation with all ranks of faculty.

**Planning has been inadequate** That being said, since planning for new graduate programs is a lengthy process, the government's wish to expand graduate enrolment significantly by this fall is not compatible with the complexities involved. Consequently, it is risking the quality of graduate education. From a strategic perspective, the government has not allowed sufficient time to plan properly for the dramatically increased enrolment or the academic context in which the enrolment will be accommodated. In sum, it has not gone far enough or started soon enough in planning for this important policy initiative.

In Ontario, planning for new graduate programs involves several of government's own internal processes, as well as the Ontario Council on Graduate Studies (OCGS) approval process. Current government policy requires OCGS approval of all new graduate programs before graduate enrolments may be counted for funding purposes.

While OCGS has expressed confidence that it can handle the roughly 50 applications for new graduate programs to start this fall that universities have submitted, the government has announced few concrete plans beyond this 2007-08 fiscal year.



**Graduate education is already stressed** In the meantime, the current state of graduate education across the province is not robust. While some programs have been well-supported, even during periods of severe cutbacks, many are struggling to maintain the excellence Ontarians and students expect.

Good graduate programs demand high-quality students; high levels of support for students, both financial and academic; high student-faculty interaction; high academic support levels (teaching assistants, lab and research assistants, and the like); high levels of access to appropriate research materials, including library holdings; and low student-faculty ratios.

Many existing graduate programs are already facing severe challenges in meeting these needs, before accommodating a single new enrollee.

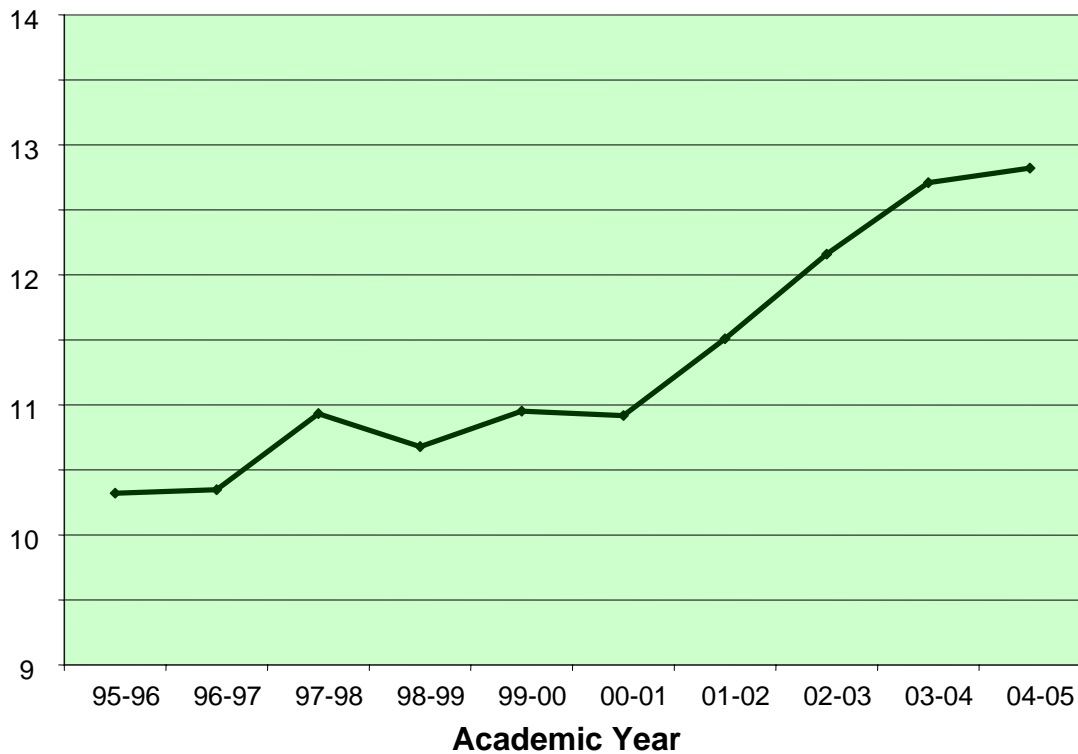
To expand graduate programs, therefore, adds challenges to an already stressed system. The lack of adequate funding has been discussed above in this regard. But there are other challenges to be met in expanding the system. For example faculty who assume responsibility for supervising graduate students usually have many years of experience in the academy. Candidates with this level of experience can be recruited from inside Ontario, but at the risk of depleting the province's undergraduate programs of experienced faculty. Experienced candidates can be recruited from outside Ontario, at the risk of depleting other provinces' capacities, or they can be recruited internationally, at the risk of raising public concerns about an over-large influx of non-Canadian faculty, concerns witnessed during the faculty expansion of the 1960s. Or the government may be tempted to increase enrolment in existing programs.

All these scenarios present risks to the quality of the graduate (and undergraduate) education that can be provided at Ontario universities. There is no indication the government has done any planning around the issue of where the additional faculty to teach 14,000 extra graduate students will be found.

**Faculty hiring is not keeping up** In addition to the special qualifications required by faculty who teach graduate students, there is also the issue of *sufficient* qualified faculty to teach these

thousands of additional students. The quality of graduate programs and the success of any expansion depend on faculty numbers as well as qualifications. Some Ontario faculty report that their numbers in certain graduate programs still remain below the levels of the 1980s. They report continuing pressure from administrations not to replace faculty who have resigned or retired and not to increase faculty numbers, meaning student-faculty ratios at the graduate level are becoming worse. This is not the direction Ontario universities should be taking. With the government pledging 14,000 more graduate students, it will take more faculty, not fewer, to provide quality graduate education.

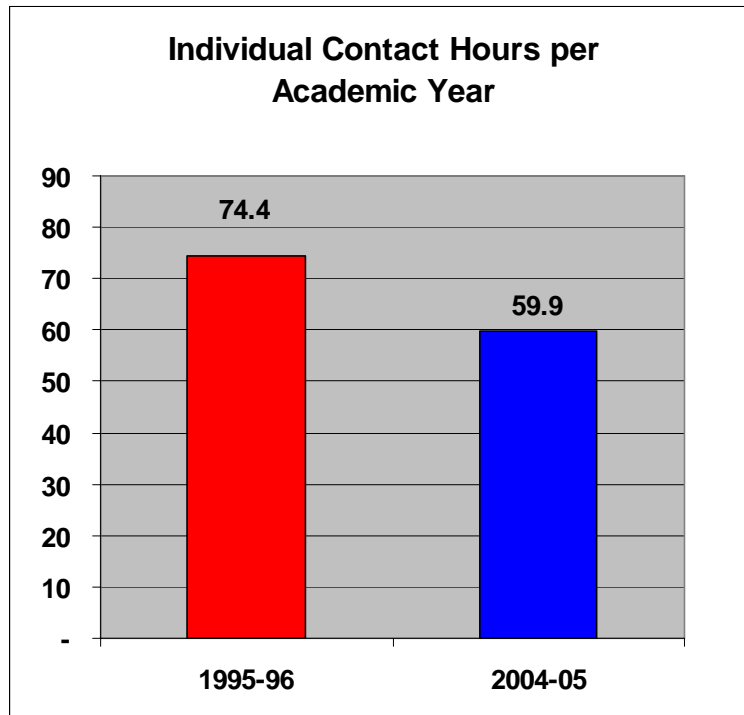
**Graduate Student-Faculty Ratio, 1995-96 to 2004-05\***



\* Graduate student full-time equivalent per graduate faculty full-time equivalent.  
 Source: Statistics Canada, University and College Academic Staff System; Ministry of Training, Colleges and Universities

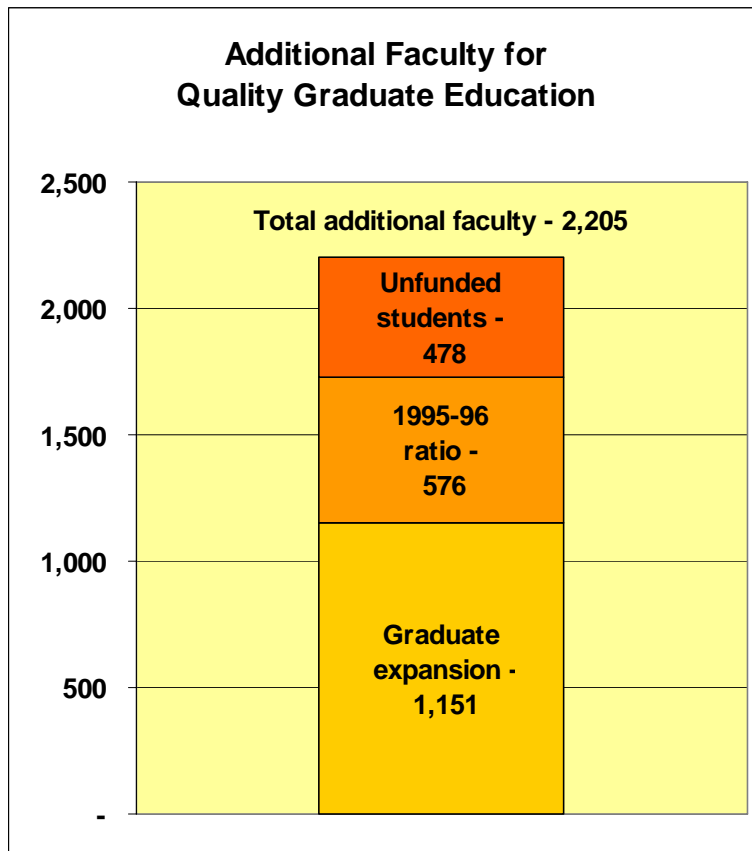
Between 1995-96 and 2004-05 the student-to-faculty ratio in Ontario's graduate schools rose by 24 per cent. If that figure is translated into the amount of time a faculty member can spend

directly on graduate supervision, a graduate student in 2004-05 received 24 per cent fewer hours with a faculty member than a student in 1995-96. This means that a graduate student in 2005-05 had the undivided attention of a faculty member for less than 60 hours during the academic year, almost 15 fewer hours than the student of 1995-96.<sup>2</sup>



An additional 1,151 senior faculty will be needed simply to accommodate the government's target of 14,000 additional graduate students by 2009-10. To raise Ontario's graduate student-faculty ratio just to 1995-96 levels would require hiring a further 576 faculty. To ensure there are enough instructors to deal with the growth in the number of funding-ineligible graduate students (students for which a university does not receive provincial funding, such as international students), a further 478 will have to be hired. All together, 2, 205 faculty must be hired if Ontario is to provide future graduate students with the same student-faculty ratio it gave students in 1995-96.

<sup>2</sup> These figures are based on a standard 40-hour work week, of which 40 per cent is devoted to teaching, with the remainder spent on research and university service obligations. The calculation is done by dividing this teaching time by the number of students the average faculty member had in the reference years (the student-faculty ratio). The result is then multiplied by 16 (weeks per term), times three (the number of terms comprising the academic year).



**Student readiness is uncertain** A further risk to the quality of graduate education is the government's failure to plan for a possible lack of qualified applicants to reach its target of 14,000 more graduate students. The government seems to be assuming that the pool of qualified undergraduates and other applicants to graduate schools will expand in proportion to the increase in undergraduate enrolment and to increased university participation rates among the population. There is no guarantee that such a pool of applicants will materialize, however, and the government's planning has not addressed the demand side of the equation.

As a result, there may be negative implications for graduate program quality. Universities, for example, may lower admission standards in order to meet the proposed target or accept more students than their graduate programs can accommodate and thus sacrifice academic standards. There exists as well, as result of this planning gap, a potential need for remedial and

preparatory work on the part of faculty to ensure students are prepared for success. The concern here is that government plans have not accounted for this possibility in any funding model. In addition, effective planning would have needed to include a variety of incentives for undergraduates, including financial ones, to encourage them to pursue graduate studies.

**The quality of undergraduate education also at risk** A “robbing Peter to pay Paul” scenario is looming as universities may well have to dilute the quality of their undergraduate programs in order to meet the government’s graduate studies expansion. According to the COU, there is already a potential \$100-million shortfall in meeting swelling undergraduate enrolment, and the pressure to meet the government’s graduate enrolment targets could well be funded at the expense of undergraduate programs.

Such pressure could result in more undergraduate students being taught by non-tenure-stream faculty, as tenure-stream faculty take on more graduate-level commitments and responsibilities and teach larger undergraduate class sizes with worse student-faculty ratios. Undergraduates could also endure lower-quality facilities and less space, as universities may privilege graduate expansion over undergraduate program needs.

The “double cohort” student population is, once again, dealing with enormous system change, just as its members are ready to move into graduate education. This student cohort has been the subject of radical educational change since Ontario’s Grade 13 (OAC) was eliminated in 2003. Having faced diminished educational quality because of a lack of planning and preparation in their undergraduate years, many of these students could face the same diminished educational experience in their graduate years. Simply making spaces available will not compensate for the lack of faculty advisors, inadequate educational support staff, inadequate equipment and research facilities, and insufficient graduate student financial support. For example, lifting the tuition freeze just at the time the first of these students were contemplating applications to graduate school or professional programs seems to continue a policy practice of “piling it on” this cohort. Indeed, it is possible that the cumulative effect of their entire student experience could deter otherwise qualified members of this cohort from contemplating pursuing their education further through graduate studies.

## Operating funding is inadequate for a successful expansion

The government has pledged an additional \$220 million in operating funding— to pay for faculty and academic support staff compensation and other non-capital expenses— for the second phase of the expansion, which is expected to cover the cost of an eventual 14,000 additional graduate students by 2009-10. There are a number of concerns about whether that amount will be adequate to *maintain* program quality, let alone improve it through reducing student-faculty ratios and providing enough per student funding for the expansion.

**Graduate expansion plan is \$388 million short** As has been noted above, to meet the government's graduate school expansion targets and to restore graduate class sizes to 1995-96 levels will require 1,727 additional faculty. A further 478 could be required to deal with growth in the number of funding-ineligible graduate students. This total of 2,205 additional faculty is *over and above* the number of faculty needed to replace retiring professors and to address growth in undergraduate enrolments. It would, however, allow universities to reduce graduate student-faculty ratios and reduce graduate class sizes; allow more faculty to assume graduate program responsibilities; and allow more tenure-stream faculty to teach, mentor, and promote graduate-level research.

The government's plan does not provide enough money to achieve its own goals. Faculty salary costs alone will amount to an estimated \$176 million if the appropriate number of faculty are hired. Since faculty salaries make up 29 per cent of total university operating costs, \$608 million will be needed to fund the second phase of the expansion adequately— \$388 million more than the government has said it will provide.<sup>3</sup>

**Students will not receive adequate financial support** Graduate students need stipends and other forms of financial support so that they can devote sufficient time to undertaking high-quality, original research. Furthermore, today's graduate students are entering graduate schools

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<sup>3</sup> The 29 per cent guideline for determining university operating costs as a ratio of faculty salaries is used by the COU. Please see COU *Background*, March 2006. OCUFA assumes an average initial salary of \$80,000 a year for a mix of assistant- and associate-professor appointments.

with more student debt than any previous generation on account of increasing undergraduate tuition. A recent estimate indicates that a graduate of a four-year undergraduate program carries an average student debt of \$25,000-\$28,000. This level of debt may well deter otherwise qualified students from pursuing graduate education and acquiring more debt.

The government, however, has not planned to meet graduate student's financial needs. For example, university departments and programs are expected to find the funds needed for any shortfall in graduate student funding. While this has always been a challenge, the situation is exacerbated by at least three factors. First, it has not increased the number and amount of Ontario Graduate Scholarships (OGS) when it announced its expansion plans, which puts more pressure on departments to fund new enrollees. Second, federal student grants programs are currently under review by Ottawa, bringing uncertainty to that source of student support. Finally, programs of guaranteed graduate student support, such as those of the University of Toronto and Queen's University, compete with graduate student support programs at other universities. Thus, support for graduate students depends on which university a student attends and how much money that institution has. In the meantime, the government has announced that it will allow universities to increase graduate and professional tuition fees by as much as eight per cent next year for first-year students in these programs.

## Capital funding is inadequate to meet increased demand

Because of the government's ambitious timelines for implementation of the expansion, the planning for university facility and capital needs is lagging well behind graduate students' arrival on campus this fall. Addressing the need for deferred maintenance, for new buildings, and for equipment and supplies issues in a timely manner is an enormous challenge. The capital lag is putting program quality at risk.

In addition to its current allocation of \$27 million a year in capital funding for facility renewal, the government is committed to providing \$550 million over five years in additional capital funding for universities. How adequate is this for meeting the need?

The average Ontario university building is more than 30 years old. Major investments will be needed over the next 10 years. The COU reported in its 2005 *Facilities Condition Assessment Program Report* that total deferred maintenance for all universities was an estimated \$1.6 billion. Its estimates for deferred maintenance costs ranged from minimal renewal costs of \$74 million a year to the optimal approach of restoring buildings to excellent condition, which would cost \$451 million a year.

Ontario universities also already operate with insufficient space for classrooms, lab facilities, and office space. According to the latest COU *Inventory of Physical Facilities of Ontario Universities, 2004-05*, the amount of space available for existing students is less than 80 per cent of the space required if Ontario universities were able to adhere to COU space standards. Even without aiming to achieve the optimal amount and mix of space, the \$550 million allocated by the government for new facilities is far below the \$1.2 billion needed to construct new facilities.<sup>4</sup>

Each university's share of the capital funding for new construction and equipment will be determined by research intensity levels and graduate enrolment growth. To reflect the level of research intensity at each university, the Ministry of Training, Colleges and Universities calculated institution-specific, graduate full-time equivalent (FTE) capital grant values. The graduate FTE capital grant value was determined by a university's 2004-05 graduate program mix, derived from the COU's space-standard category system. It is the Ministry's intent to determine each university's graduate FTE capital grant value based on the 2004-05 data. The value of the grant transferred to a university will be determined annually, based on the graduate FTE enrolment growth over its 2002-03 base. This could exacerbate existing funding inequities experienced by northern, Francophone, or bilingual universities, and universities that emphasize undergraduate education.<sup>5</sup>

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<sup>4</sup> In 2003, the COU projected 30,000 more graduate students in the decade up to 2013-14. It estimated that \$2 billion in new capital and equipment spending would be needed to support them. Using these figures, capital funding for 14,000 additional graduate students would be \$926 million. Capital costs to accommodate as many as 3,570 unfunded graduate students would be \$236 million, for total of roughly \$1.2 billion.

<sup>5</sup> For example, a university with a lower proportion of space-intensive programs, such as sciences needing lab space, would be less able to afford to expand these programs faster than its other programs. It could increase the expansion of these space-intensive programs, but one or another group of students will be disadvantaged. If it builds facilities in accordance with the formula used to allocate the funds, the amount of capital funding per student in space-intensive programs would be less than comparable programs at other universities. Alternatively, if it were to ensure that its new facilities for space-intensive programs were similar in quality to those at other universities, the amount of new capital funding for its students in other programs would be less than for their peers at other universities.



The government has also changed its approach to how it flows capital funding. Although the \$550 million is nominally provided to cover capital and related projects over a five year period, the actual funding will be provided in payments spread over 20 years. Annual payments will incorporate an assumed 6.5 per cent interest rate over the life of the funding.<sup>6</sup>

Under the government capital funding model, there are at least two potential cost risks for each university. The first is that universities proceed to build facilities based on the assumption that they will reach their graduate enrolment targets and then fail to do so. Because the capital grant is intended to be proportionate to the actual increase in enrolment, attaining less than 100 per cent of the enrolment target means a university gets less money for capital. If, for example, all universities reach 90 per cent enrolment targets, the base allocation will be \$495 million, not \$550 million. As a result, if universities spend the maximum, they will end up dealing with a capital-grant shortfall of about \$5 million per year or \$100 million over the 20 years.

The second cost risk facing universities under this funding model is that borrowing costs could be higher than the anticipated 6.5 per cent. For example, costs could increase by about \$2 million a year if universities borrowed at a rate of seven per cent on the \$550 million instead of the anticipated 6.5 per cent.

The level of funding for new facilities and equipment to accommodate the anticipated growth in graduate enrolments is, therefore, insufficient to ensure that their experience is of the highest quality. Nor, again, is funding for facilities renewal sufficient to deal with the deferred maintenance bill, which increases annually as maintenance is yet again deferred.

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<sup>6</sup> The analogy would be a \$550-million mortgage with a 6.5 per cent interest rate. After 2009-10, the annual cost to the government could be \$50 million. The total, 20-year cost may reach \$998 million. If the same formula were to be applied to capital funding of \$1.2 billion, the additional annual cost would be \$56 million.

## Failure to involve faculty leads to planning mistakes

As faculty are the gatekeepers of educational excellence, their exclusion from the formal planning process, except for nominal efforts by some administrations, represents a fundamental flaw in the process.

There are opportunities to correct this flaw. Engagement of all key stakeholders at the same table in important decisions and planning exercises would help ensure the government's initiative is successful. As convenient as it may seem on the surface, planning involving consultations only with senior administrators does not represent a conversation with the university community. Further, excluding faculty representatives from these important processes reflects a serious misunderstanding of how knowledge is generated and transmitted in a rigorous academic setting and how academic quality is, therefore, created and sustained.

## Conclusion

It is critical that more opportunities at the post-graduate level be created, especially in light of the large-scale retirements of existing faculty and the past underfunding of both graduate and undergraduate education, which is just beginning to be reversed.

This review of the government's planned graduate enrolment expansion initiative, however, has identified a number of serious concerns that must be addressed so that the goal of providing a broad range of excellent graduate programs to an expanded number of qualified students can be reached. First, current operating and capital funding commitments are not adequate to address problems arising from past underfunding and to ensure adequate support for expansion. Student debt levels and gaps in student support may discourage otherwise qualified students from pursuing graduate education. Planning and implementation processes need to be strengthened by explicit inclusion of faculty.

This review indicates the need for the following specific steps:

### **1. Increase operating funding by \$388 million**

For the universities to be able to hire the 2,205 additional tenure-stream faculty and requisite academic support staff needed to deal with 14,000 additional graduate students by September, 2009, as well as to cover other operating costs, the government needs to increase operating funding by \$388 million, for a total of \$608 million. (A further \$300 million is needed to fund currently unfunded undergraduate enrolment.)

### **2. Increase facilities renewal funding to \$451 million**

The current allocation of \$27 million a year for deferred maintenance is woefully inadequate. It would take \$74 million a year to pay for even minimal repairs and \$451 million a year to restore existing facilities to an optimal state of repair.

### **3. Increase capital funding for new facilities and equipment to \$1.2 billion**

Capital funding must be virtually doubled from \$550 million to \$1.2 billion – or

an increase of \$56 million a year over 20 years — to build new facilities and buy new equipment to accommodate graduate enrolment growth. There also needs to be a review of the current funding model with the aim of reducing cost risks to universities.

#### **4. Encourage students with financial support and tuition**

The government must immediately increase the number and amount of Ontario Graduate Scholarships for qualified graduate students. It must expand the grant program to reduce tuition for dependent students whose families have incomes below \$85,000. Ontario should offer a quality graduate education to students through direct government funding, not through tuition fee increases.

#### **5. Involve faculty in planning and implementation**

Institutions and government should include faculty in all planning processes and conduct a faculty survey at least every two years to identify successes, issues, and problems.

**APPENDIX**

Graduate Student Full-Time Equivalent (FTE) Growth Plan 2002-03 to 2007-08

	2002-03			Approved growth			2007-08		
	Actual FTEs			2002-03 to 2007-08			Total Graduate FTEs		
	Master's	Doctoral	Total	Master's	Doctoral	Total	Master's	Doctoral	Total
Brock	348.8	29.0	377.8	285.8	32.8	318.6	634.6	61.8	696.4
Carleton	1,302.8	367.5	1,670.3	534.6	172.2	706.8	1,837.4	539.7	2,377.1
Guelph	836.7	318.2	1,154.9	299.3	188.3	487.7	1,136.0	506.5	1,642.6
Lakehead	193.8	22.6	216.4	278.1	28.1	306.2	471.9	50.7	522.6
Laurentian	181.1	0.0	181.1	131.5	24.9	156.4	312.6	24.9	337.5
McMaster	1,200.8	505.8	1,706.6	385.6	395.3	780.9	1,586.4	901.1	2,487.5
Nipissing	103.2	0.0	103.2	107.3	5.0	112.4	210.5	5.0	215.6
OCAD	0.0	0.0	0.0	10.0	0.0	10.0	10.0	0.0	10.0
Ottawa	1,884.7	541.9	2,426.6	846.6	384.9	1,231.5	2,731.3	926.8	3,658.1
Queen's	921.2	541.1	1,462.3	769.6	197.2	966.8	1,690.8	738.3	2,429.1
Ryerson	268.2	0.0	268.2	807.7	77.9	885.7	1,075.9	77.9	1,153.9
Toronto	4,480.9	3,024.2	7,505.1	1,700.4	826.9	2,527.4	6,181.3	3,851.1	10,032.5
Trent	82.3	32.7	115.0	88.0	30.0	118.0	170.3	62.7	233.0
UOIT	0.0	0.0	0.0	60.0	0.0	60.0	60.0	0.0	60.0
Waterloo	928.1	524.9	1,453.0	586.7	190.4	777.1	1,514.8	715.3	2,230.1
Western	1,902.7	644.9	2,547.6	385.3	430.1	815.4	2,288.0	1,075.0	3,363.0
Wilfrid Laurier	499.9	41.5	541.4	178.6	55.7	234.3	678.5	97.2	775.7
Windsor	520.4	148.1	668.5	358.6	64.4	423.0	879.0	212.5	1,091.5
York	2,058.2	615.9	2,674.1	760.8	374.1	1,134.9	2,819.0	990.0	3,809.0
<b>Total</b>	<b>17,713.8</b>	<b>7,358.3</b>	<b>25,072.1</b>	<b>8,574.6</b>	<b>3,478.2</b>	<b>12,052.8</b>	<b>26,288.4</b>	<b>10,836.5</b>	<b>37,124.9</b>

Source: Ministry of Training, Colleges and Universities