

3. U of T's Financial Model

Two decades ago, the then President George Connell noted in *Renewal 1987* that “for the past 10 to 15 years, the University of Toronto has endured serious constraints upon its financial resources and in turn on its academic work”. Today, the University is still in an era of serious funding challenges.

In 2004-05, U of T's operating budget was about \$1.2 billion. The core provincial grant currently represents about 48% of that total, down from 76% in 1991-92. Tuition has risen from 20 to 37% of revenue. The remainder comes from other sources, such as endowment payouts, federal government support and divisionally generated income.

Figure 6: University of Toronto Operating Revenue 1991-92 to 2005-06

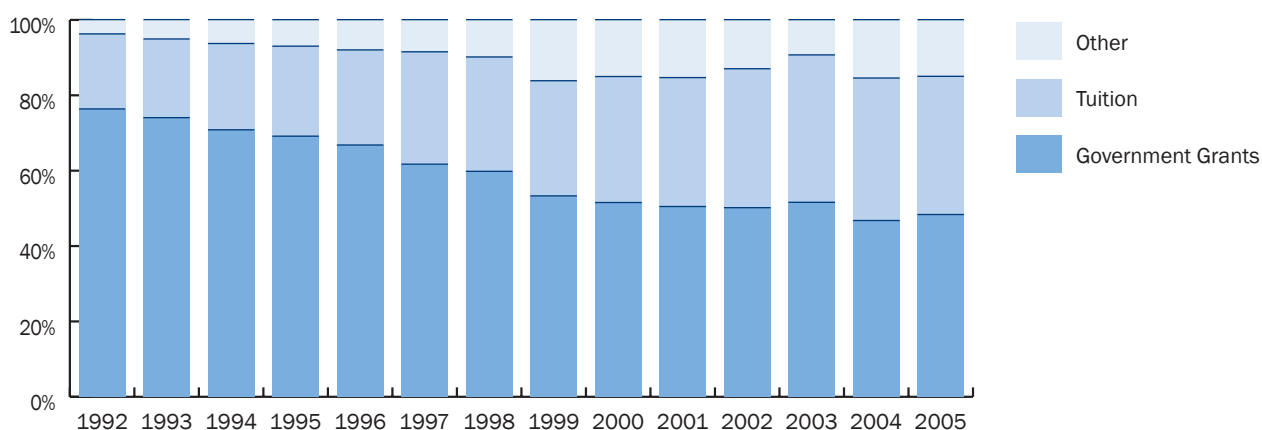


Figure 6 illustrates a declining share of government grants in the funding of university education. In fact, the proportion of provincial GDP devoted to post-secondary education in Ontario is lower than in all other provinces. Whereas per-capita funding of health care and K-12 schooling in Ontario is at the national average, funding of colleges and universities is 30% below the national average. Moreover, from the early 1990s to 2004-05, per-student inflation-adjusted funding from the provincial government (not including direct grants and research awards) fell by about 30%.

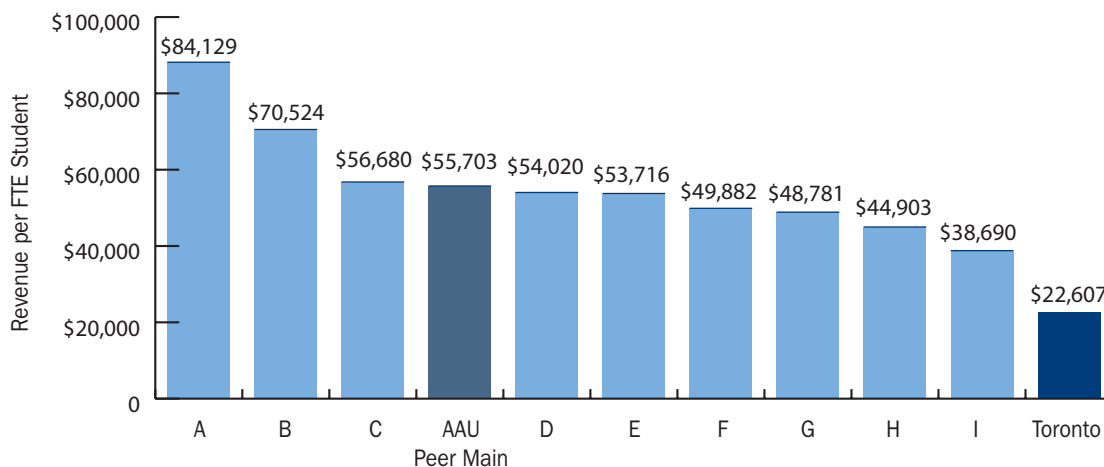
The provincial government recently responded to the level of per-student funding in Ontario with its very welcome Reaching Higher Plan. The plan promised \$6.2 billion in expenditure over five years and is particularly generous in its support of graduate students. However, much of the funding is directed to student aid, to the college sector and to enrolment growth. Thus, the Reaching Higher Plan has led to only modest increases in per student grants, particularly after ordinary inflation is taken into account.

Ontario has been dead last among the provinces in per-student funding of higher education for about 15 years.

Ontario government funding per student is 50 to 66% of per student funding to public universities in American peer states.

The Council of Ontario Universities has estimated that, even by 2009-10, the additional resources committed per-student are unlikely to move Ontario out of last place among the provinces.

Figure 7: Total All Revenue per FTE Student ~ Fiscal Year 2005 - 2006 (US Funds)
University of Toronto vs AAU Peers (Institutions are masked according to AAUDE guidelines.)



Just as Ontario sits in last place among the provinces in per-student funding, Figure 7 below shows that, by the same measure, the University of Toronto lags behind all of our public AAU peers in total per-student revenues.

The core mechanism for government funding of Ontario universities is through basic operating grants. Since the 1960s, funding has been based on a weighted average of the number of students in various programs. The weights, known as 'Basic Income Units' or BIUs, were derived in the first instance from estimates of the relative cost of educating students in differing programs. However, the precision and accuracy of BIU weights today is questionable and the per-unit valuation remains too low to secure desirable features of undergraduate education, such as small class sizes and increased personal contact between professors and students. Another limitation is the fact that BIU weights and values are applied without reference to quality of academic programs or consideration of differing institutional roles in research.

The BIU weights and funding levels have created a set of incentives that are not necessarily aligned with our institutional strengths or past track record of research-intensive differentiation. High-volume undergraduate programs, characterized by large classes and limited professorial contact, are often cited as a cause of dissatisfaction among students; but in many ways they are the logical response to an environment of net revenue generation based on constrained BIUs. At one time, doctoral-stream programs were more financially sustainable, but the implementation of the 'full funding guarantee' (living stipend + tuition rebate), while an important advance in graduate education, has radically altered the net revenues associated with delivery of graduate research degrees. Without external financial awards or grants to cover minimum stipends associated with the graduate funding

guarantee, doctoral programs in effect end up sending much of the BIU-associated grant directly to students themselves to cover the funding guarantee. Professional master's programs, in turn, are more sustainable because students are provided with some measure of bursary support, but not a guaranteed stipend and tuition rebate.

Tuition

The tuition levels at Canadian universities roughly track inversely to the per-student funding provided by their home province. Higher tuitions in Nova Scotia and Ontario, for example, serve in part to offset lower per-student funding in those two provinces. Tuition fees for bachelor of arts programs at Ontario universities have increased 49% over the past decade, from \$2,925 in 1996-97 to an average of \$4,343 in 2006-07.¹¹ While recent increases are above the Consumer Price Index, analysis of the trend over three or four decades shows that tuitions have basically tracked the provincial average of wages and salaries. Accounting for exchange rates and the cost of living, Ontario fees are comparable to Australian fees and significantly lower than those of many public universities in the United States.¹²

The University has a tuition framework that weighs factors ranging from program costs to anticipated earnings, and also commits the institution to ensuring that no student should ever be forced to leave without completing his or her degree on the basis of financial need. The application of this framework occurs, however, within a Procrustean bed of varying government regulations regarding domestic students. In the 1990s, the Government of Ontario capped growth in undergraduate fees at 2% per annum, but allowed institutions to set their own tuition fees for most professional programs. The Government froze tuition fees for 2 years in 2004 and 2005, and then in 2006, announced a new multi-year tuition framework which provided for some degree of tuition fee differentiation, subject to the condition (among others) that the overall average tuition increase across the institution could not exceed 5%. Our new tuition levels reflect the competing influences within each program of chronic revenue shortfalls, variable baseline tuitions in the light of previous regulatory frameworks, and our firm institutional commitment to accessibility.

On the latter point, student groups point to rising tuition levels as barriers to accessing a university education, and have called repeatedly for tuition freezes or reductions. Within the present fiscal framework, however, and looking forward to 2030, a tuition freeze would have a profoundly detrimental impact on the quality of education and student experience available at the University of Toronto. While the impact of tuitions on university finance – and hence quality of education – is not mysterious, the impact of tuitions on accessibility, by contrast, is complex and counter-intuitive. Available data demonstrate a positive correlation in many jurisdictions (Canada and internationally) between tuition levels and university participation rates. That is, increasing tuition is often associated with increasing, not decreasing, participation rates. But these ecological correlations at the broad group level do not hold consistently for individuals or subgroups. The supply-demand dynamic is affected, *inter alia*, by the jurisdictional availability of student aid, by variability in the

willingness of individuals and families to seek bursaries or assume debt to finance higher education, by internal financial aid offered by the programs themselves, and by the perceived long-term economic value of credentials from different degree programs.

Our status as a publicly-assisted university and our institutional commitment to access are both clear cut. Thus, for the University of Toronto, rising tuitions are accompanied by the assumption of an obligation to implement programs of financial aid that will help provide equitable access to our degree programs. A substantial percentage of new tuition revenue is drawn away to generate pools of bursary funds to offset tuition charges for lower-income students who require financial assistance above the loans and bursaries available through combined provincial and federal sources. In fundraising campaigns, we place special emphasis on bursaries and scholarships to support access and offset tuition costs. The multi-year campaign that ended in December 2003 raised more than \$500 million for student aid through direct gifts and leverage from government matching programs.

In short, at the University of Toronto, we have used tuition flexibility in meaningful measure not just to sustain the quality of our educational programs in a setting of constrained per-student grants from government, but also to ensure that we remain open to the best and brightest students regardless of their economic circumstances. Our approach to financial aid is manifestly effective. In recent years, about 40% of our undergraduates report a total family income of less than \$50,000 per annum. Division-specific analyses, most notably in our Faculty of Law, highlight the effectiveness of bursary programs based on tuition redistribution – access has improved even as tuitions have risen.

Today, the University of Toronto contributes about twice the Ontario average into student financial aid – a commitment that necessarily limits the resources available for our educational mission. The sustainability of our model depends in part on the level of student aid provided by governments and on philanthropic support for scholarships and bursaries. It also depends, meaningfully, on enhanced tuition resources that can be drawn into bursary funds. This model has much to commend it, but its practicality has been constrained by tuition limits and freezes, as well as slower-than-expected growth in external scholarship funds. It is arguably time for reasoned debate about alternative models that will carry the institution into its third century.

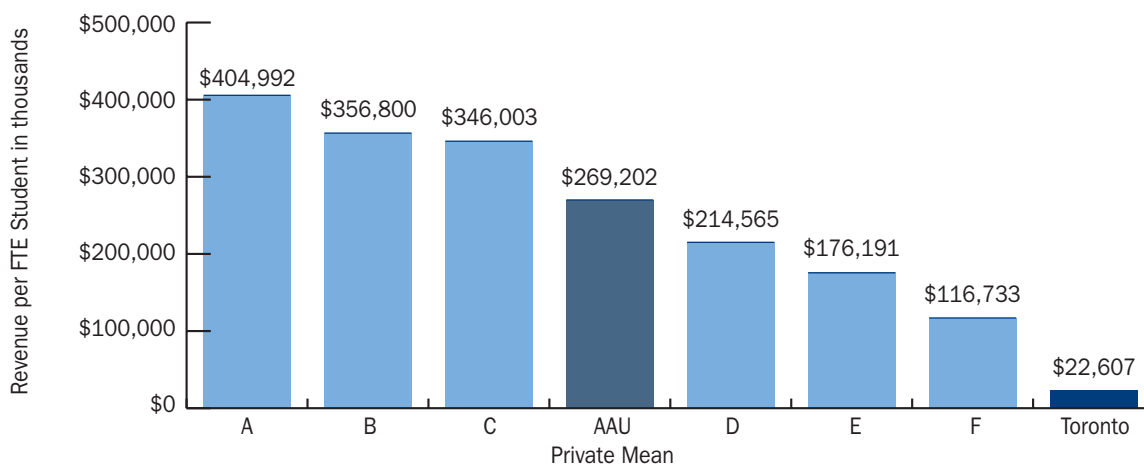
A Structural Subsidy for Research Activity

We have already addressed the perverse effect of research grants on university finances in Canada. Although the Province of Ontario provides 40% coverage of the indirect costs of research, research-intensive universities are disadvantaged by the low level of coverage of ICR associated with federal grants. For any large research-intensive institution, the actual indirect costs of research average at least 50 cents on the direct research dollar. In the USA, where these costs are assigned to individual projects and submitted to audit, ICR for physical and life sciences can run in excess of 80 cents on the dollar. Federal grants are carrying ICR coverage that, for the University of Toronto, is under 20 cents on the dollar. This situation severely compromises our ability to compete with British (ICR coverage at 48 cents on the dollar) or American universities (ICR averaging about 60 cents on the dollar for science grants from federal agencies).

Sustainability with current funding approaches

In the USA, as already noted, the financial gap is growing between various private institutions – such as Harvard, Stanford, Princeton, and Yale – and a much larger group of publicly-financed universities. Berkeley and San Francisco in the University of California system, among others, are effective public competitors with these private powerhouses. Given our radically lower per-student funding from all sources, it is a small miracle that the University of Toronto continues to compete with so many of these American institutions. But while the research outputs of many public universities in Canada and the USA remain impressive, the private institutions have pulled ahead in other ways – delivering smaller class sizes to undergraduates, offering higher-quality services and amenities, and subsidizing an impressive range of co- and extra-curricular opportunities. Figure 7 above illustrated U of T's per-student funding relative to our public AAU peers. Figure 8 below depicts a more daunting relationship: U of T's per-student funding relative to that of several private US universities. Our challenge may be expressed in financial terms, but it is grounded in our concern for the experience of our students, now and in the years ahead.

Figure 8: Total All Revenue per FTE Student ~ Fiscal Year 2005 - 2006 (US Funds)
University of Toronto vs Select AAU Private (Institutions are masked according to AAUDE guidelines.)



The growing financial gap between private and public institutions has fuelled debate and divergent policies in the USA. On the one hand, there is continuing anxiety about the financial inaccessibility of private institutions where tuitions for baccalaureate programs often exceed C\$25,000 per annum. On the other hand, state legislators have allowed publicly-assisted universities – including the University of Virginia, University of Texas, and the University of Colorado – to raise tuitions with limited interference provided accessibility commitments are maintained.

The same debate has played out in Canada, albeit in a muted fashion given the absence of private institutions in the higher education sector. Several provinces offer a degree of tuition flexibility and universities within those provinces can set market prices for new programs. In Ontario, the government allows some programs that do not seek public funding to operate on a self-funded basis. Meanwhile, colleagues and students at many Ontario universities are expressing serious concerns

about the quality of university education in our province and how best to finance its enhancement. Faced with rising expectations, ongoing budgetary pressure and our continuing concern to enrich our students' experiences and compete effectively with our wealthier peers, the University's present funding approach may not be sustainable.

Alternative government funding options

A number of policy initiatives would reshape the financial future of the University of Toronto.

At the federal level:

- » Improved federal research grant coverage of indirect costs would go a long way to minimize the strain of research costs on the university's educational mission. Until the federal government increases its indirect cost coverage to 40 cents on the dollar for all federal grants, all of Canada's research-intensive universities are compromised financially.
- » The general enhancement of research funding for operating grants is required to support graduate students with stimulating projects and part-time work as research assistants.
- » Ongoing expansion of graduate scholarships and fellowships would help the next generation of young Canadians pursue advanced degrees. With the future of the Millennium Scholarship Foundation in question, there is also an urgent need to buttress the national framework for undergraduate loans and bursaries.
- » Above all, institutions could benefit from full and fair flow-through of the new post-secondary education (PSE) transfer to provinces. The PSE transfer amounts to \$800M per annum with ongoing inflation-related increases – and, in fact, the initial amount itself could be escalated as a result of federal-provincial negotiations. At the University of Toronto, the relevant base increase from this source alone could be at least \$35M starting in 2008-09. This allocation, however, could be significantly delayed by federal-provincial disagreements over jurisdiction and conditionality. Although the federal intent is that these funds be incremental to current and projected funding of colleges and universities, their impact will be greatly attenuated if they are used instead to offset existing or planned commitments.

At the provincial level:

- » Current per-capita funding for PSE remains surprisingly low, notwithstanding the positive investments made recently through the Government's Reaching Higher Plan. Ontario has the second-highest per-capita GDP of the ten Canadian provinces, and an economy with limited dependence on natural resources. In theory, to secure the future of our jurisdiction, spending on post-secondary education in Ontario should be at worst second-highest in Canada on a per-student basis, rather than tenth of ten provinces. The University of Toronto would be transformed if the per-student grants were raised to the national average level for the other nine provinces in the Canadian federation.
- » As noted earlier, educational programs in Ontario are uniformly funded on a per-student basis. While identical funding of clearly identical programs is defensible, there seems to be limited capacity or willingness to assess programs in more detail and provide differential funding on the basis of those assessments. In addition, the province could create distinct mandates for sets of institutions as occurs with the California State and University of California systems.

- » Another option is what might be called ‘earned tuition autonomy’. This option would give selected institutions greater flexibility in setting tuitions, provided they maintained full accessibility by offering generous financial assistance, particularly internally-derived bursaries, to their students. Some institutions would then increase fees modestly in hopes of enhancing quality while attracting the best and brightest students, and other institutions could flat-line tuitions and seek top-flight students through offering competitive quality at a lower price.

Alternative Funding Sources

a) Philanthropy

The University has benefited enormously from generous philanthropic support over the last 15 years. From 1993 to 2001, the University’s Campaign raised over \$1B, and the endowment currently has a market value equal to about \$1.7B. In the last two years, alumni and friends have made remarkable gifts to the University with values totalling above \$100M in 2006 and \$160M in 2007. Philanthropic support for the University of Toronto remains higher than for other Canadian universities and hospitals, and shows no signs of flagging. However, the extent to which current support can be augmented is unclear.

Currently the University anticipates real pay-out rates on endowed funds at around 3.5% to 4%, or, accounting for current inflation, roughly 6% to 7% per annum.[‡] One option, therefore, is that future fund-raising might focus less on endowments and more on immediate expendable supports, including capital gifts. While this strategy is appealing, the short-term gains from this option must be weighed against the duty of all fund-raisers to secure indefinite support for an institution with a life-span measured in centuries.

b) Commercialization and Sponsored Contract Research

The translation of research output into applications with wide uptake is particularly appealing because it enables the work of the University to make a positive difference in the world. It deepens and broadens the connections between the University and the public and private sectors and it creates employment and educational opportunities for our students. In this context, another potential source of increased revenue is commercialization of intellectual property generated through university research. Starting in 1981, the University took steps to help academic researchers transfer their innovations to the private sector through the formation of the Innovations Foundation. In the last two years, the University has restructured its research commercialization operation, working in concert with the MaRS Centre, a massive new \$450 million capital development at the edge of the St. George campus. MaRS aims to promote collaboration among scientists, knowledge-based industries, and investors in those same industries. As we prepare for 2030, there will be a new level of expertise and support for U of T researchers bringing their research through the complex processes of commercialization.

[‡] Whenever possible, the University also augments the principle in endowed accounts as a means of preventing the erosion of pay-out rates in periods of accelerated inflation.

In terms of licensing inventions, the University of Toronto continues to lead Canadian universities in the cumulative number of new licences in recent years. Over 2001-02 to 2004-05, the University of Toronto created 189 new licences, ranking fifth among US peer institutions, and first among Canadian universities.¹³ While this leading position is reassuring, critics have suggested that the University could do better and take more of its research output to the marketplace. If one uses older data, the first impression is that, given its huge research output, the University of Toronto is indeed an under-performer in commercialization. The good news – and bad news – is that the data are flawed. Toronto for years has reported net revenues while others reported gross revenues; and the data are reported only for on-campus research while other institutions roll in affiliated hospital revenues. For example, widely-cited data (e.g. from the Milken Institute) suggest the University of Toronto lags dramatically in biotechnology patents issued, licensing activity, spin-offs developed, and total revenues. This is hardly surprising when 70% of the relevant research and associated commercialization activity is hospital-based and not included in the tally. Thus, while the ‘head room’ for revenue growth is meaningful, it is smaller than historical data would suggest.

Debate continues about the optimum intellectual property (IP) strategy that might increase our commercialization performance. One model for intellectual property ownership starts at 100% with the faculty member. With this approach, disclosures since 2001 are lower at the University of Waterloo than at a number of Canadian research universities. Although the number of spin-off companies generated is second only to Toronto, Waterloo’s gross commercialization revenues are near the bottom of the Canadian list for the same period. In contrast, the top performer in revenue generation is British Columbia, an institution that starts with 100% university ownership but assigns a percentage of proceeds to the faculty inventor, leading to a revenue-sharing result very similar to the Toronto model. Much more impressive comparators are institutions such as the University of Minnesota or University of Washington, where gross commercialization revenues are several times higher than at Toronto. Both institutions work within the Baye-Dohi Act that assigns IP to the institution for federally-funded research and both provide incentives to faculty members. In short, IP policy *per se* does not drive this dimension of performance.

Examining the overall structure of technology transfer for the University and its hospital partners, a number of observers have suggested that a combined ‘front office’ with top-notch leadership would do much to catalyze success in commercialization. This model presumes that the ‘back office’ functions are maintained or strengthened at each institution, reinforcing a culture of innovation and augmenting the numbers of disclosures. Whatever the optimum model may be, it seems clear that better results are possible. With a major reorganization and strategic investment in technology transfer and commercialization, our faculty inventors should be able to share in new net income from commercialization amounting to several million dollars per annum.[†] An increase in the overall level of commercialization and technology transfer could also promote enhanced levels of industry-sponsored research.

[†] The University has a very strong commitment to knowledge translation for social innovation, often involving advances in the social sciences and humanities and non-profit partnerships. We focus here on intellectual property with commercial potential given that the focus of the section is on net revenues.

Unpredictable Costs

Among the unpredictable costs that lie ahead, two bear brief attention here. The first is the cost of utilities. The University has carefully studied its options in this regard, and cost savings through contracting out or rapid adoption of alternative energy sources thus far appear modest at best. We are instead taking steps to amortize the maintenance costs for our heating infrastructure, to promote energy conservation, and to ensure that new buildings are designed with a view to energy cost-effectiveness. The second is our defined benefit pension liability. Our retirees are living longer, requiring actuarial adjustments to our anticipated obligations. Arguments have also been made that the University is too optimistic in using a 4% discount rate to calculate pension liabilities. After considering discount rates as low as 2.5%, the Ontario Teachers Pension Plan shifted to a 3.725% discount rate for liabilities in their most recent pension plan valuation. This shift occurred after the much lower rates were mooted in the context of efforts to raise employee contribution levels. Some private companies, moreover, have capped defined benefit plan enrolments and are now promoting defined contribution plans for new employees.

Our Financial Future

Our financial challenges are real. Our expenses are increasing at an average of 6% annually, a rate consistently above general inflation. Our revenues are not keeping pace, and the pressure is being felt at multiple points in the organization, not least in heavier workloads for our faculty and staff, and a more impersonal learning environment for our undergraduate students. Recognizing that we cannot sustain our current level of activity with the current business model, what are the options?

TOWARDS 2030: Some strategic questions to promote dialogue ...

Are we maximizing all our current sources of revenue? If not, which ones can be enhanced without adversely affecting the institution in other respects?

What advocacy strategies should be put in place to address those areas where federal and provincial support is failing to cover our costs, or insufficient to ensure that we can give our students the quality of education that they deserve?

What funding blend (as between enhanced per-student grants and increased tuition revenues) would be the most sustainable to support the University's long-term position as a leading publicly-assisted research university? Have we got the right mix of students in relation to our complement and staff so as to maximize net revenues while sustaining our core mission?

Given the likelihood of ongoing constraints on per-student grants, how can we strengthen the quality of education for our students and improve the quality of the working life of faculty and staff?

Can accessibility be sustained or even enhanced in the context of a more flexible tuition policy based on earned autonomy? Should more programs be fully self-funded? If so, how do we ensure that student debt-loads and part-time work activities are constrained rather than increased?

Should we change our approach to fund-raising so as to put more emphasis on expendable gifts and capital projects?

Have we put in place the right structures and processes to facilitate commercialization of university-based research? Have we built an effective commercialization enterprise with our research hospital partners? How can we ensure that knowledge translation for better public policy and successful communities receives attention alongside traditional market-facing commercialization activities?

Have we taken the right steps in anticipating the future costs of utilities and utilities-related infrastructure at U of T? Do we have the right financial model for our pension plan, or should employer and employee contributions be raised?

Are we containing all unnecessary expenses? If not, which expenses can be reduced without adversely affecting our mission?