Institutional Vision, Proposed Mandate Statement and Priority Objectives

A submission to begin the process of developing strategic mandate agreements (SMAs):

To:

Ministry of Training, Colleges and Universities
Minister: Honourable Glen Murray

From:

The University of Toronto
President: Professor David Naylor

This submission has benefitted from valuable discussions with faculty, staff, and students, including the Academic Board, student governments, and the Faculty Association. That said, responsibility for any errors, omissions, or points of difference rests with the President and Vice-Presidents.
Part 1: The University of Toronto – Vision

The University of Toronto is a vibrant and diverse academic community. It includes 12,000 colleagues holding faculty appointments, 200 librarians, 6,000 staff members, and 80,000 students across three distinctive campuses and at many partner sites, including world-renowned hospitals. More than a key resource to Ontario, the University is one of the most respected and influential institutions of higher education and advanced research in the world. Its strengths extend across the full range of disciplines: The 2012-13 Times Higher Education ranking groups the University of Toronto with Stanford, UC Berkeley, UCLA, Columbia, Cambridge, Oxford, the University of Melbourne, and the University of Michigan as the only institutions in the top 27 in all 6 broad disciplinary areas. The University is also consistently rated as one of Canada’s Top 100 employers, and, in North America, only Harvard and Yale are rated as providing better library resources.

 Adopted in 1992 and continuously upheld since then, the University’s “Statement of Institutional Purpose” includes a succinct Mission statement: “The University of Toronto is committed to being an internationally significant research university, with undergraduate, graduate and professional programs of excellent quality.” Twenty years on, Toronto remains a research pacesetter not only for Ontario, but for the world: only Harvard publishes more. We are also a continental leader in knowledge-translation and entrepreneurship: Toronto students and faculty generated 25 spin-out companies in 2011 alone. And while we have long been a critical contributor for Ontario and Canada in graduate and professional education, degree holders from U of T undergraduate programs are in leadership roles across Ontario and around the world.

To reinforce the value of a baccalaureate in a world of ‘credential creep’, we have made intensive efforts in recent years to ensure that undergraduate education at our University is enriched by the same culture of inquiry, discovery, and creativity that is the life-blood of our research success. This enrichment is the touchstone for the creative and critical thinking skills that can help our students be successful no matter where they live and work. Ideally, this approach will give students the tools to pursue careers that have not even been invented or, better yet, to become the leaders who invent those new employment opportunities for their fellow Canadians.

While our Mission is unchanged, the accelerating shifts in our context led the University in 2007 to embark on the most extensive planning exercise in our 180-year history. Towards 2030 took both a shorter- and long-term view of the University’s position and strategies. Its coverage ranged from strategic differentiation across the three campuses, to renewal of undergraduate education and modes of managing medium-term fiscal challenges.

Within the last few months, the University’s Provost has completed a wide-ranging review of the progress achieved since adoption of that plan. The results, reported in much greater detail elsewhere, are extraordinarily encouraging.

We are recruiting outstanding young colleagues to faculty positions. Our mid-career and senior faculty members continue to win a strikingly disproportionate number of national and international awards for research excellence. We have created the President’s Teaching Academy and made major investments to support excellence and innovation in teaching and learning, including the creation of a teaching-stream. Our dynamic east and west campuses are evolving rapidly into comprehensive universities that combine innovative undergraduate programming with selective expansion of graduate and professional education as well as more on-site research.

Our renewed commitment to undergraduate education has been manifest in: a complete overhaul of recruitment strategies with dramatically positive results; curriculum renewal and academic restructuring in the major first-entry divisions; the pursuit of our novel Big-and-Small strategy to augment student engagement in the face of enrolment pressures; the expansion of our excellent and intensive First Year Foundation Programs across colleges, divisions and campuses; major growth in experiential learning; and an Undergraduate Course Development Fund to catalyze greater engagement with undergraduate teaching by top researchers in the professional faculties (Law, Medicine, Social Work, and others). Due to internal changes and investments as well as our outstanding partnership with MaRS, we have seen a remarkable flowering of student and faculty entrepreneurship, innovation, and knowledge translation.
Above all, we have never seen better students – not just from Ontario, but also in rising numbers from across Canada and around the world. For example, in 2012, almost 20% of our first-year students in undergraduate programs are international. Equally important, from the standpoint of putting students first in Ontario, some 40% of our domestic undergraduates are from low-income households. We invest over $147M each year in student bursaries and scholarships with one aim in view: to ensure that students can be admitted on merit, not on the basis of personal or parental income. In this, we are driven by an abiding belief that in every free and democratic society, higher education is the social institution that best aligns ambition and talent with equity and opportunity.

Today’s students, of course, are tomorrow’s alumni. While we are proud of our historical and massive ongoing contributions to research and innovation in Canada, it is ultimately our graduates who constitute our single biggest contribution to the strengthening of communities and the creation of successful and innovative societies. The University claims over 500,000 alumni in 175 countries: they are in leadership roles on every continent and in every sphere of human activity with surprising concentrations of influence everywhere from Hollywood to Hong Kong.

Part 2: The University of Toronto – Proposed Mandate Statement

The 2030 Planning Framework, as approved by the University’s multi-constituency Governing Council in 2008, covers a range of issues highly pertinent to the SMA exercise and our Ontario Mandate. We recap the most salient items briefly below. All quotes refer to the 2030 Framework.

The University’s “distinctive role” as Ontario’s academic flagship is prominent at the outset of this key institutional document, which also highlights “the academic rigor of its educational offerings at all levels”, and the goal that our programs be at least nationally pre-eminent and ideally very competitive on a global scale. Today we are busy innovating in digital education, already provide hundreds of transfer credits each year for equivalent courses at sister universities, and have developed productive partnerships with regional community colleges. However, consistent with our “distinctive role”, we will not compromise the integrity of a University of Toronto degree. To do so would not only harm the fabric of our institution but would be a betrayal of stewardship of standards for our students, our alumni, and the citizens of Ontario.

As the 2030 Framework observes, “The University contributes meaningfully to the prosperity of the Toronto region, Ontario and Canada. In addition, the University’s students, faculty and staff engage in a range of activities that help build successful communities locally, nationally and globally.” Our priorities below include initiatives that will strengthen community engagement, experiential learning, and entrepreneurship by our students.

Regarding “Enrolment Plans”, we affirmed our commitment to work with the Government of Ontario “to meet anticipated changes in demand for university places”. We stand by that commitment.

In working with the Ministry, one of the University’s goals was and remains to “reinforce its unique strengths in research and scholarship, as well as our acknowledged leadership position in graduate and second-entry professional education provincially and nationally”. Today, the University of Toronto educates 23% of Masters students and 32% of PhD students in Ontario. We are encouraged by continuing positive results on the Canadian Graduate and Professional Student Survey. Sustaining student engagement and satisfaction is no small feat given that we have added 1848 Masters and 680 PhD students in the last 6 years. Moreover, the University has also responded rapidly to societal need and demand in framing professional Masters programs. We currently offer 63 such programs, with 20 more in the planning stages – the largest by far of any university in the country. Many have highly innovative features, be it the prominence of integrative thinking and design in the Rotman MBA or UTM’s Masters of Biotechnology, highly regarded by industry leaders.

The Framework asserts that we will enable “strategic tri-campus differentiation of academic programs”. In this respect, domestic undergraduate growth on the St. George campus will be limited, and our goal is to expand graduate enrolments, with a longer-term goal of raising the current 26% graduate proportion to at least 35%. At the east and west campuses, we “envisage growth in a range of professional masters programs, along with doctoral-stream expansion in selected disciplines.” Depending on capital and operating support, undergraduate enrolment expansion across these two campuses combined was projected as rising by as much as 5000 domestic places.
This broad rubric will continue to guide our work with the Ministry on enrolment expansion. And as Ministry-approved growth proceeds, we shall sustain high levels of student financial aid “with the goal of ensuring that accessibility is maintained for all meritorious students”. In 2008 we put a high priority on “fund-raising to generate bursary and scholarship funds that can support recruitment of outstanding students from the widest possible range of backgrounds”. We kept that promise. Today over $850M in our endowment is directed to scholarships and bursaries for students. From the remaining $900M that the University’s Boundless Campaign must raise to reach its $2B target, about $200M will be directed to scholarship and bursary support. Under the current tuition framework, we also reallocate substantial tuition revenues to student aid. The result: some 45% of U of T undergraduates in receipt of OSAP paid less than half the posted tuition fees even before the new Ontario Tuition Grant was launched. Over 2000 students had full tuition coverage. Indeed, with bursaries, scholarships, OSAP support, and internal tuition set-asides, the effective or net tuition increases at U of T, averaged across all programs, amounts to slightly more than 3% per annum.

As promised, we identified “internal best practices that may be generalizable” to enhance students’ experiences. We have invested in initiatives that “helped students learn together in small groups with the direct support of teachers and mentors”, and are making major investments “to make participatory learning opportunities available to all first-year students and eventually extend these opportunities to more undergraduates in their upper years.” We also affirmed “the importance of co-curricular initiatives for students on its three campuses, including experiential learning for credit in diverse forms”. These figure in our highest priorities below.

The Framework further states: “The University of Toronto will advance its use of information technology and seek to become a leader in digital education.” At that time, Toronto was behind many of its peers. Today, as outlined in our priorities, we are making great strides and intend to do more.

We sought better processes that would ensure “that societal, academic and economic benefits are more consistently realized from the University's excellence in research.” In partnership with multiple academic hospitals, research institutes, and local universities, U of T and MaRS led the creation of a path-breaking commercialization consortium, and have launched other initiatives as outlined in our priorities. Without fanfare, the combined force of MaRS and the U of T academic family, including fully affiliated hospitals, has created a footprint in commercialization, entrepreneurship, and knowledge translation that is having a substantial economic impact not just regionally but across the province and beyond.

These foregoing summaries of our Mission and Mandate already speak clearly to our differentiated position in the Ontario PSE ecosystem. We emphasize that differentiation has myriad dimensions – ranging from francophone instruction to programming that targets northern and rural access. Each institution will have a unique niche. The dimension of differentiation for the University of Toronto is research-intensity and its ripple effects as regards programming, enrolment patterns, and both graduate and undergraduate student experience. The priorities below are self-evidently aligned around sustaining our unique role, while recognizing fiscal realities and meeting various Government system objectives.

We take up below the invitation to comment on policy issues for priority #1. For now, we note that the University has made its first priority a set of measures that address efficiency and productivity. We cannot set targets without clarity about how the Ministry defines productivity. Productivity measures conventionally involve delineating inputs in relation to outputs or outcomes. The latter could include diverse metrics of research, knowledge translation, and educational performance. Neither the weights for these outputs/outcomes, nor the framework for analysis (e.g. average or marginal measures) has been delineated. We would welcome a conversation to clarify these analytical issues, as we together seek creative and effective responses to shared fiscal pressures.
Part 3: The University of Toronto – Priority Objectives

Priority #1: Enhance Efficiencies and Productivity while Sustaining Research-Intensity and Enrolment Differentiation

Leadership Track Record:
For over two decades universities in Ontario have had the lowest per-student grants in Canada. Even with welcome increases in government grants and tuition revenue over the past ten years, a significant gap remains. Meanwhile, as reported by the Government, degree completion rates have risen, and Ontario continues to enjoy the highest PSE participation rate of any province. Howsoever productivity is defined, these data speak volumes about the relative efficiency of Ontario universities.

Ontario’s research-intensive universities face additional challenges. These include the very low level of federal reimbursement of the indirect costs of research, and the lagging numbers of graduate fellowships and scholarships relative to growth. Above all, we operate with a funding formula that penalizes research excellence by combining research and educational salary support in a single block grant, without regard to research performance or measures of educational outcome. Even among an outstanding family of research-intensive institutions, Toronto stands out for its enrolment mix, extraordinary research outputs, success in knowledge translation, high graduation rates of skilled people, and continued global reputation – and our productivity is arguably sui generis. This has been possible only because of the superb faculty and staff we have been able to attract and their dedication to the institution, as well as the support of our alumni and friends.

The fiscal context, however, leaves us no choice but to look for even more efficiencies.

In the past, to enhance operational effectiveness and to sustain the quality of the learning environment, we have been pioneers in, for instance, creating a new category of teaching-stream faculty and crafting an explicit Big-and-Small model of delivering undergraduate courses. Like many sister institutions, we have increased year-round learning, including the recent development of compressed summer courses. In the summer of 2012 the University of Toronto taught 27,668 students across its three campuses, while hosting a wide range of other events. This has resulted in increased productivity and efficiency (greater utilization of our physical plant and infrastructure) while at the same time providing students with additional flexibility in completing their degrees.

Recent efforts to enhance mobility for our students should also improve efficiency. We have recently joined six other Ontario universities in forming the University Credit Transfer Consortium. Its aim is to streamline credit transfer among students in a set of institutions that have similar admission standards and a record of successful credit transfer through usual ad hoc methods. This should reduce paperwork for students and participating universities alike.

Most importantly, the University implemented a new Budget Model in 2006 that encourages efficiency and frees up resources to enhance quality of front-line teaching and research. By investing in central financial analysis, sharing information widely, and devolving decision-making, we have given academic divisions the incentives to be creative and entrepreneurial in meeting their academic objectives. The fact that a number of other universities across Canada are studying and emulating this model is a marker of its value as an innovative practice.

Future Priorities:
We will continue to demonstrate leadership in creating operational efficiencies and enhancing productivity by pursuing the following strategies, subject to appropriate resources and relevant approvals:

a. Expansion of the 3+2 Undergraduate/Masters Model
The Bologna reforms to European PSE are receiving increased scrutiny, as their practical implications come into clearer focus. However, a very interesting feature of the Bologna paradigm is the 3+2 model as a path to equipping students with two rigorous and meaningful degrees in five, as opposed to six years. We have positive experience in this regard with capable students who know what they want to do and are highly motivated to combine an undergraduate and Masters degrees. For instance, our innovative Jeffrey Skoll Combined BASc/MBA Program
allows selected students from the Faculty of Applied Science and Engineering (APSC) to complete both a BASc and an MBA degree in less time than it would take them to do both degrees sequentially and with an extensive internship, giving them real-world insight into the interface of business and engineering. Skoll students typically maintain high grades in both programs, and are highly valued by employers.

Our Deans and Chairs are excited by the possibility of generalizing this model, and have a number of combined degrees in the planning stage. The model aligns well with the intensification of our graduate mission and our differentiated role in the system. This will be a great thing for our students, saving those who choose this route a year of study, while delivering to them two highly-regarded degrees. One-time-only monies will be needed for program development, and we will seek permanent endowments to provide financial aid to students as needed.

b. Expand the Number of Teaching-Stream Faculty
To cope with funding shortfalls, other universities across North America have increased the number of contract faculty they employ. To maintain the quality of the academic experience for our students, we believe that it is preferable for them to be taught by faculty with continuing appointments. The University of Toronto has been a leader in creating a Teaching Faculty Stream – brilliant educators and valued colleagues who devote a greater part of their time to teaching than do our tenure-stream faculty. Over the past 10 years we have increased the proportion of teaching-stream faculty and we will actively work to arrive at optimal proportions of these groups across our divisions.

Where this results in an increase in teaching-stream faculty, there will be net gains in the number of courses taught, at the same time sustaining or improving the quality of the learning experience for students. If productivity is defined as course delivery, relative to the overall faculty complement, the gains here are clear. What remains unclear is how the Ministry prioritizes research activity and graduate supervision as productivity elements. We have seen the clear and pressing importance of research and corresponding graduate supervision in the recent ranking declines experienced by Canadian universities. These activities need to figure prominently in any account of productivity.

c. Expand the Number of International Graduate Students
Ontario retains about 50% of international graduate students who have completed a research-stream degree. This subgroup shows a particular concentration in the STEM disciplines. However, unlike several other provinces that have recognized the importance of this source of talent, Ontario does not provide grants to universities to support research-stream international graduate students. As a result, Ontario’s research-intensive universities have lagged their out-of-province peers in recruiting these applicants. Today, Toronto continues to receive enormously strong applications to doctoral programs from international graduate students, but without associated funding we are severely limited in how many of these students we can afford to enrol. It makes little sense to turn away these creative individuals, who by virtue of their decision to study abroad, have already demonstrated themselves to be risk-takers.

Attracting global talent is a key to the future prosperity of Ontario. As outlined below, extending domestic-level funding to international graduate students is a very efficient strategy to enhance the pool of highly qualified talent needed by the province in these difficult times.

Policy Tool 1: Funding Formula Reform
One jurisdiction after another has fully or partially uncoupled research salary support to faculty from core educational grants, and aligned institutional missions to enrolment planning and funding envelopes, having some regard to differential costs. Ontario’s approach in contrast has been ad hoc, without role definition for institutions that aligns funding, mission and enrolment mix. Role definition cannot be type-casting, and differentiation has many elements other than research- and graduate-intensity. But if every institution’s aspiration is to be increasingly research- and graduate-intensive, as seems to be the case, the inevitable result is damage to the excellence of both teaching and research. We urge careful study of Clark's paper on the California model, and its lessons for Ontario.

It is both paradoxical and unsurprising that U of T, as the province’s research leader, has led the way in building an outstanding cohort of teaching-stream faculty. As noted, we are working with our colleagues to optimize the balance of full-time faculty in differentiated roles. In this regard, we face a dilemma. The current funding model
contains serious financial disincentives to research productivity and research-stream graduate intensification. However, the province also relies on us for leadership in both those dimensions of our mission.

Any change in funding formulae must be done with great care to avoid damage to a precariously balanced ecosystem. Obviously, post-hoc changes would be destabilizing and standardization in particular would be de-differentiating. It may be prudent to focus modifications prospectively on new growth-related funding. A results-based allocation formula, for example, could align incentives rationally, taking into account research performance on a university-by-university basis, markers of educational effectiveness (e.g. degree completion) and, longer term, learning outcomes. As an interim option, we are interested to explore with the Ministry flexible block-funding that would enable more nimble allocation of funds between undergraduate and graduate envelopes.

**Policy tool 2: Extend Domestic Funding to International Graduate Students**

This policy change involves no special treatment for international students at eligible institutions. It simply extends current domestic funding to international research-stream graduate students at universities that meet a defined quality threshold. It matches the precedent in several provinces. It is also arguably cost-saving. The public spends at least $180,000 to educate a student from kindergarten to a bachelor’s degree. Thus, if half the international graduate students stay on, the net savings is arguably $90,000 per student as compared to the equivalent domestic education. In brief, this measure would be a powerful and cost-effective boost to talent retention, could reinforce institutional differentiation, and involves no increases to university budgets.

**Priority #2: Expand Technology-Assisted Learning Opportunities**

**Leadership Track Record:**

New learning technologies offer innovative ways to elevate the learning experience and offer students more flexibility. The University of Toronto has expanded its suite of technology-enhanced courses and programs, currently offering 90 for-credit courses online with plans in place for more. Our Innovations in On-line Learning initiative uses online materials to support self-paced learning outside of the class, and enhanced activity-based learning in the class. Today, moreover, the University of Toronto has the largest on-one-server user base of Blackboard in the world. We have piloted the “inverted” or “flipped” classroom model and have plans for broader implementation in the University made possible by our recent acquisition of state-of-the-art lecture capture and live webcasting solutions. *We were the first in Canada to be part of a Massively Open On-line Consortium (MOOC)-Coursera.* We remain the only Ontario institution on a MOOC platform. We are committed to being leaders in shaping how this technology might work for students around the world and, very importantly, in Ontario. By way of example of the power of digital education, a mere eight weeks after the partnership with Coursera was announced, U of T’s five pilot courses had 100,000 registrations.

**Future Priority:**

a. **Explore the Potential for Offering For-credit Foundational MOOCs**

High-quality online courses require considerable investment of faculty time and resources. We share our students’ caution about the implications for the quality of their education if a significant proportion of courses are offered only on-line. Instead, because we are early adopters of this technology, we are able to explore the value of allowing our students to take a small number of our enhanced MOOCs for a reduced cost and flexibility, while maintaining the important one-on-one interaction our students expect and deserve. This would be a win-win situation made possible by the University of Toronto’s early and full participation in international MOOC initiatives.

The Gates Foundation has recently issued a Request for Proposals to create first-year MOOCs which will be accredited for two-year US colleges and potentially, in limited number, for our own students. The University of Toronto, currently the only Canadian university in this internationally cutting-edge competition, is submitting proposals for 4 courses in statistics, computer science, psychology, and writing instruction. The Gates Foundation will to provide a $50,000 grant for the curriculum development of each course selected in the competition. Additional costs will be incurred to sustain these courses and create new ones.
**Priority #3: Enhance Entrepreneurship and Experiential Opportunities for Students**

**Leadership Track Record:**
As already noted, the University of Toronto and its institutional partners lead Canadian academe in the numbers of start-up companies created. To sustain that advantage, UofT has created the [Innovations and Partnership Office](#) which works with MaRS to identify and leverage the commercial potential of discoveries and ideas arising from the work of our faculty, staff, and students. As well, the University's Chemistry department has developed a unique model that involves converting underused space into state-of-the-art 'pre-incubators' to nurture new ventures. Not only do these companies provide an important source of employment for our new graduates; they enhance the productivity of Ontario by rapidly translating ideas into products with value.

In September 2012, the University took the step of opening new incubator and innovation space: The Banting and Best Centre for Innovation and Entrepreneurship. The Centre includes successful UofT start-ups as tenants, two recognized Centres of Excellence in Commercialization, and the University’s Innovation and Partnerships Office. Students are being mentored through programs run by the co-located BEST-IOS (Building Entrepreneurs in Science & Technology) group.

The BEST-IOS group joins a growing suite of Toronto-based educational programs designed to nurture the next generation of entrepreneurial leaders for Ontario and Canada. The MaRS convergence centre offers "Entrepreneurship 101". Initiated by a University of Toronto professor in 2004, these weekly seminars cover topics such as how to make an effective pitch to potential investors and how to create a sales strategy. More than 1,800 people – many U of T faculty and students – take part in these sessions each year. The University of Toronto is also the founding academic partner of The Next 36, a high-profile national entrepreneurship program, and the highly successful TECHNO program, a three-week summer boot camp in 'technopreneurship' for recent graduates that has spawned 35 student companies over its first three years alone.

With respect to experiential learning, the University of Toronto provides work-integrated learning opportunities for students through co-op activity (1500+ students), Professional Experience Year programs (600+ students), and internship/practicum arrangements (100+ programs). We fund Work-Study positions (2000+ students). And we offer experiential opportunities for students to earn credit through placements in community settings. Each year thousands of UofT undergraduate students connect with community organizations through co-curricular service placements. The organizations benefit from the students’ wonderful energy and nascent expertise while the students gain an understanding of how to apply their insights and ideas to real-world settings.

An example of Toronto's success in experiential learning is our unusual Master of Science in Applied Computing. Students spend the first 8 months on campus, taking our regular graduate courses plus one of two special courses (Communication for Computer Scientists and Technical Entrepreneurship). The students then move to an 8-month internship in May that we arrange, and return to campus the following fall in the evenings (during the second half of their 8-month internship) to take the second of the two special courses. All of the students thus far have been offered jobs on graduation by their internship employers.

**Future Priorities:**
Our future priorities include expansion of these opportunities in two specific areas:

a."Entrepreneurship 101" for Undergraduate Arts & Science Students
Building on the successful Entrepreneurship 101 program, the Faculty of Arts & Science is developing an entrepreneurship for-credit course that will be available to all Arts & Science undergraduate students. It will be delivered in both in-person lecture and on-line formats thereby extending the number of students that might benefit. The course will be delivered by faculty from the University of Toronto, by alumni with relevant experience, and by expert advisors associated with MaRS. New resources will be required to expand the course and to provide transition support for those students who wish to pursue entrepreneurial activities.
This initiative has broad implications in terms of potential benefits for students and the Province. As vectors of knowledge and expertise into society, university and college graduates are Ontario’s best bet to drive enhanced productivity in the future. A larger number of graduates with entrepreneurial training and savvy will increase Ontario’s chances of a rapid return to previous levels of prosperity.

**b. Experiential Opportunities for Students**
We will expand both paid and unpaid opportunities through a variety of unique partnerships and models:

i) **CUSP** – The University of Toronto is a core member of an important international consortium that was the second winner of Mayor Bloomberg’s Applied Sciences NYC competition. The Center for Urban Science and Progress (CUSP) will focus on developing solutions to the critical challenges facing the world’s cities, including infrastructure, tech integration, energy efficiency, transportation congestion, public safety, and public health. If we can put the requisite funding in place, University of Toronto students will gain vital expertise that can be applied to challenges facing the City of Toronto and other cities in Canada. Furthermore, participating students will be able to conduct collaborative research with top companies such as ConEdison, National Grid, Siemens, Xerox, Port Authority of NYC, IBM, Cisco, Google, etc.

ii) **UTIAS** – Building on other successful partnerships with private sector partners, the University of Toronto Institute for Aerospace (UTIAS) is deepening its relationship with Bombardier and building a partnership with Centennial College and, in time, other academic institutions, with plans to provide new training for the next generation of aerospace technologists and engineers. Future students will engage in industry-relevant projects related to environmentally-sustainable aviation. Students will learn about aerodynamics to reduce drag on airplanes, study lightweight options in aircraft construction, examine biofuel options and conduct life-cycle assessments of aerospace technology. Over the span of six years over 130 undergraduate and graduate students are expected to participate in the program. Discussions regarding a dedicated aviation and aerospace campus at Downsview Park are also ongoing.

iii) **Internships: From Unpaid to Paid** – We have entered an era where unpaid internship opportunities are available in abundance, much to the advantage of those who can afford to take them and much to the disadvantage of those who need to work at paid jobs. The University is troubled by this inequity. We have already developed a small number of scholarships for undergraduate students in the biosciences to offset the part-time income they forgo when volunteering in labs. Expansion of this program is needed if we are to find a way of providing academically-relevant work experiences to our students without disadvantaging the already-disadvantaged.