



OFFICE OF THE VICE-PROVOST,
ACADEMIC PROGRAMS

REVIEWS OF ACADEMIC PROGRAMS AND UNITS

October 2013–March 2014

Report to the Committee on Academic Policy and Programs

April 1, 2014

REVIEWS OF ACADEMIC PROGRAMS AND UNITS

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Review Summary

Program(s):	<i>n/a</i>
Division/Unit:	Faculty of Arts & Science
Commissioning Officer:	Vice-President and Provost
Reviewers (Name, Affiliation):	1. Ana Mari Cauce, Provost and Executive Vice President, University of Washington 2. Simon M. Peacock, Dean of Science, University of British Columbia 3. Scott L. Waugh, Executive Vice Chancellor and Provost, University of California, Los Angeles
Date of review visit:	October 28 – 30, 2013

Previous Review

Date: January 24-25, 2008

Summary of Findings and Recommendations:

1. Teaching & Research

The reviewers observed the following strengths:

- Faculty is at the heart of the University's mission of education and research
- Colleges play a critical role in enhancing the student experience
- Units such as the School of the Environment, which bring together graduate and undergraduate programs, result in high quality research and educational opportunities

The reviewers identified the following areas of concern:

- Lack of intermediary tenure review process after departmental decisions

The reviewers made the following recommendations:

- Clarify the role of the Colleges in educating undergraduates, especially via interdisciplinary programs
- Clarify the role of the three campuses with respect to faculty members teaching in graduate and undergraduate programs
- Maintain research masters and PhD programs at the tri-campus level

2. Organizational Structure & Resources

The reviewers observed the following strengths:

- Largest, most diverse unit in the University

- Faculty has weathered recent changes well and continues to find efficiencies

The reviewers identified the following areas of concern:

- Major challenges of provincial fiscal restraint, the undergraduate double cohort, graduate expansion, expansion of the number of units, end of mandatory retirement, and the University's new budget system
- Size and number of interdisciplinary units appears to be unsustainable

The reviewers made the following recommendations:

- Give budgetary power to and redefine the roles of the vice-deans
- Create a chief of staff position
- Rethink the faculty complement and strategic planning processes
- Review interdisciplinary programs and their sustainability

3. Internal & External Relationships

The reviewers observed the following strengths:

- Communication is strong between the three campuses

The reviewers identified the following areas of concern:

- Considerable amount of time devoted to negotiating relationships with institutional partners
- Lack of international benchmarking for the Faculty

The reviewers made the following recommendations:

- Create better, more strategic clarity in the Faculty and with its partners

Last OCGS Review(s) n/a

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

Terms of Reference; Self-Study and appendices that included the previous review and administrative response, the Faculty's *2010 Academic Plan*, the undergraduate and graduate calendars, a guide to extra-departmental units, the *Statement of the Roles of the Constituent and Federated Colleges* and the *Administrative Procedures of the St. George Colleges*, the listing of the consultations for the Self-Study, Undergraduate and graduate degree objectives, student support services, organizational structure, Arts & Science Constitution.

Consultation Process:

The reviewers met with the Vice-President and Provost; Vice-Provost, Academic Programs; Faculty of Arts & Science Dean and former dean; vice- and Assoc-deans, assistant deans; academic unit chairs and directors; college principals; Deans of cognate University faculties and campuses; faculty members; A&S Council members; administrative staff; and undergraduate and graduate students.

Current Review: Findings & Recommendations

The reviewers praised the Faculty's deep commitment to upholding the highest standards of excellence in research and teaching. They cited the Faculty as a critical factor in the University's position as a world-class institution, noting its status as teaching and research powerhouse and its effectiveness in fostering a culture of excellence.

1 Teaching and Research (Items 1, 2, 3, 4 from Terms of Reference)

The reviewers observed the following strengths:

- Undergraduate education
 - Highly successful curriculum renewal process, with core competencies instituted for all programs, encouraging breadth and exploration of new subjects
 - Very high quality undergraduate students
 - Student appreciate the ability to tailor their degree through various combinations of specializations, majors, and minors
 - Seven Colleges play a fundamental role in the advising and support of undergraduate students, and are doing an excellent job overall
 - Students are strongly supportive of the Colleges
 - Colleges seem well-connected to the Faculty through their Registrars
- Graduate education
 - Full-range of excellent disciplinary and interdisciplinary academic and professional graduate programs, attracting high quality students
 - Concerted effort to expand graduate education, especially professional master's programs, to meet the goals identified in the Faculty's strategic plan and those of the province
 - Tri-campus program system works particularly well in certain disciplines
 - Times-to-completion are in-line with North American norms
- Faculty
 - Faculty is drawn from the very best around the world
 - Highly active and productive research faculty, with entrepreneurial passion
 - Faculty Appointments Committee has given greater coherence to the Faculty and is widely respected
- Research
 - Research excellence extends across the sciences, humanities, and social sciences
 - Research funding is strong
 - Dean's Office is well-structured to support research activity
 - Both the Vice-Dean Research & Infrastructure and the Vice-Dean Graduate Education & Program Reviews play a key role in developing a culture of excellence in achievement in research
 - Faculty play a leading role in realizing the UofT Strategic Research Plan

- Planning/Vision
 - Strategic plan aligns with and supports the University's long range plan
 - Appreciable progress towards meeting the priorities in the strategic plan, which is the basis for yearly resource allocation and departmental and unit-level planning

The reviewers identified the following areas of concern:

- Program delivery (overall)
 - Challenge of maintaining programmatic quality, for both graduate and undergraduate programs, in the context of budget constraints and hiring cutbacks
- Undergraduate education
 - Large-enrolment programs are struggling to sustain innovative programming as transitional funds expire
 - Dramatic increases in student/faculty ratios, as at other large public universities
 - Large classes dominate the 1st and 2nd academic experience, and continue to do so in 3rd and 4th year for large-enrolment programs
 - High demand courses not always offered routinely
 - Students concerned about variable TA quality
 - Notable concern about the extent to which students rely on external tutoring services
- Graduate education
 - Unclear how well tri-campus system is working for certain disciplines
 - In certain instances, Ph.D. time-to-completion is outside the norm (e.g., 7 – 9 years)
 - Graduate students expressed concern about the levels of funding that they receive; discrepancies between average graduate stipends in the Divisions
 - Concern about the levels of funding available to international graduate students
 - TA placements at UTM and UTSC require long commute times
- Faculty
 - Faculty complement planning not tied directly to Faculty's strategic plan
 - Chairs note the challenge of rising student enrolment, and expressed reservations about hiring teaching-stream faculty at the expense of tenure-stream faculty
 - Absence of committee of the whole Faculty in the tenure review process
- Research
 - Challenge of engaging in interdisciplinary research within a decentralized structure
- Planning/Vision
 - Concern about whether the overall strategic vision for the Faculty informs planning departments, colleges, campuses, and EDUs

The reviewers made the following recommendations:

- Undergraduate education
 - Determine how best to respond to the challenges of increasing numbers and class size including the best way to manage access to courses; consider recording lectures and online engagement
 - Create a formal evaluation system, including feedback mechanisms, for TAs

- Examine why students are seeking external tutoring support
- Consider adding undergraduate co-op programs on all campuses, with the goal of increasing student participation
- Graduate education
 - Encourage students' awareness of rewarding non-academic career options as there are fewer tenure track positions available
 - Emphasize the creation of professional master's programs aligned with non-academic employment opportunities
 - Continue to pay attention to and leverage the strength of the tri-campus system
 - Examine in detail the actual range of graduate student support as a function of year and discipline
 - Ensure that TA placement is seen as an opportunity for professional development and employment
 - Address problem of international graduate student funding through lowering graduate student tuition and/or increasing the funding available to these students
- Faculty
 - Cluster hiring as a means to strengthen interdisciplinary and breadth
 - Rethink the tenure process to include a thorough review by a Faculty-level tenure committee
- Research
 - Develop approaches to large-scale initiatives that span the sciences, social sciences, and humanities and take advantage of interdisciplinary research opportunities

2 Organizational Structure & Resources (Item 5 from Terms of Reference)

The reviewers observed the following strengths:

- Morale
 - Faculty, staff, and students continue to create pathways to excellence through their dedication, ingenuity, and entrepreneurial spirit
- Financial resources
 - Financial and administrative stability of the Faculty has been supported in particular by the hiring of the CAO
 - Current financial direction appears to be healthy
- Organizational structure
 - Administrative structure is practical, effective, and works surprisingly well in carrying out the academic mission of the faculty; gives a high degree of independence to academic leaders
 - Though the administrative structure is complex, the regular meetings councils and coalitions serve as venues to discuss academic and administrative issues among FAS leaders

- Chairs praised the work of the vice-deans, emphasizing their impressive planning, knowledge, responsiveness, creativity, and service-orientation; they are glue that holds together the complex administrative system
- Numerous EDUs provide faculty and students with important niches
- Intention to establish more centralized system of IT support
- Excellent HR support

The reviewers identified the following areas of concern:

- Space and infrastructure
 - Urgent need for new facilities in order to remain competitive in research, especially in the sciences
- Financial resources
 - Faculty's ability to take on new initiatives is limited by extreme budgetary constraints at the University
 - Budget model may not be transparent for department chairs or EDU directors
- Organizational structure
 - Organizational structure is complex and decentralized
 - Autonomy of chairs and directors increases their responsibility for managing units effectively
 - Unclear how and who addresses the specific needs of chairs, though chairs meet with Dean and vice-deans on an as-needed basis
 - Exception to this is the science chairs who meet with the Vice-Dean for Research & Infrastructure
 - Some affiliated groups of chairs, principals, and unit heads, but these are not necessarily cohesive groupings that participate in shared strategic planning and initiatives
 - The number of EDUs might be detracting from energy and effort that might be better directed toward departmental units or work across department
 - Concern that new Faculty (and University) initiatives, like STEP Forward, do not always get the buy-in that is needed to make them successful

The reviewers made the following recommendations:

- Space and infrastructure
 - In order to sustain excellence, Faculty will require additional support from the University, particularly physical infrastructure
 - Engage in creative ways to finance at least one major project and refurbish existing space
- Financial resources
 - Need for additional support from the Province terms of funding and/or tuition flexibility
- Organizational structure
 - Though the complex organizational structure currently works, consider how to increase communication and integrate planning across all units
 - Consider carefully the creation of additional structures

- Encourage the new dean to communicate often and clearly with academic leaders and the faculty at large so that they not only understand actions taken by the context in which decisions are made

3 Internal & External Relationships (Items 6, 7 from Terms of Reference)

The reviewers observed the following strengths:

- Internal relationships
 - Relations between the three campuses are cordial with a sense of disciplinary commonality
 - The size of UofT and the number of Divisions offer remarkable opportunities for academic development
- External relationships
 - Students and faculty take advantage of UofT's diverse, rich, urban environment, connect with the community, and strive to make an impact on the world
 - Increased number of courses that offer a service learning component and the number of professional master's programs with internships in government, industry, and not-for-profit organizations
 - Many students involved in activities with community impact
 - FAS is in a good position to bring evidence-based direction and advice to a host of social problems and issues at the local, national, and international levels
 - Gains in technology transfer over the past five years
 - Strong commitment to community involvement, globalization, and conducting internationally-relevant research

The reviewers identified the following areas of concern:

- Internal relationships
 - In recent years, the rate of faculty hiring and capital improvements has decreased at St. George, while it has increased at UTM and UTSC
 - Engineering, Medicine and FAS raised the issue of funding for students taking courses in the others' Faculty

The reviewers made the following recommendations:

- Internal relationships
 - Create robust cross-campus relations and provide space where tri-campus faculty members can interact on a regular basis
 - Clarify cross-Divisional issues, chiefly teaching across Divisions
 - Explore new academic initiatives involving the entire campus and encourage FAS to be a leader in these endeavours

- External relationships
 - Engage in peer benchmarking in the areas of service learning, study abroad, and commercialization/technology transfer activities

ADMINISTRATIVE RESPONSE – Appended



12 March 2014

Professor Sioban Nelson
Vice-Provost Academic Programs
University of Toronto

Re: External Review of the Faculty of Arts & Science

Dear Sioban,

Following the external review of the Faculty of Arts & Science, I am pleased to provide you with my administrative response to the review.

The reviewers visited the Faculty in October 2013, during which time they met with students, faculty and staff, academic administrators within the Faculty as well as senior University administrators and cognate deans. The reviewers commented that their discussions were lively, and “people felt comfortable being frank and open.” It was clear in my discussions with the reviewers, that they considered the Arts & Science community to be justifiably proud of the accomplishments of our outstanding faculty, staff and students.

I am grateful to the reviewers for their thoughtful analysis of the Faculty in their Report. They presented their findings in relation to undergraduate and graduate education, research, planning, organization and resources, our relationships with other University units and our social impact.¹ They were impressed by the Faculty-wide deep appreciation of the importance of and commitment to upholding the highest standards of excellence in research and teaching. They praised our units’ engagement in undergraduate curricular renewal which has supported enhanced breadth and the exploration of new subjects. Describing Arts & Science as a “teaching and research powerhouse,” the reviewers were struck by our dedication, ingenuity, and entrepreneurial spirit. They noted the strengths of our colleges and their importance in advising and supporting our students. The reviewers concluded that “there is no question about the overall excellence of the Faculty of Arts & Science at the University” and that we have “excellent faculty, staff, and students that are energetically committed to conducting world-class research and scholarship.”

The Report was received in December and circulated to the Arts & Science community. In January, the Faculty senior leadership embarked upon two rounds of consultations with Arts & Science Council, the Council of Chairs, Principals & Academic Directors (CPAD), the Coalition of Arts & Science Directors (CASD), administrative groups, student representatives, and with other members of the University. We first had a general discussion regarding the Report and its recommendations. We then followed with a second round of discussion, focusing on the draft contents of an administrative response to the Report.

Before proceeding to discuss their specific recommendations, the reviewers acknowledged two factors that frame the context for their Report: the “extreme budgetary constraints at the University and within the Faculty”, and, the “complexity and extreme decentralization of the organizational structure.” We

¹ The Report, Self-Study, administrative response, and related documents, are posted at <http://www.artsci.utoronto.ca/main/about/reports/review>

agree that our financial situation is deeply challenging given the misalignment between our revenues and expenses. With regards to the former, our provincial per-student grant has not increased in value for the past 20 years, even to offset inflation. Undergraduate domestic tuition fees are also closely regulated. Within the Faculty, these past five years we have had to make difficult strategic choices to contain costs and raise revenue. We implemented a careful approach to enrolment planning, an undergraduate program fee, expenditure controls, and strategic resource allocation mechanisms for hiring of teaching staff so that we could avoid a hiring freeze. The Faculty's organizational structure echoes that of the University as a whole which displays a decentralized structure. Arts & Science departments, extra-departmental units (EDUs), and colleges help us to manage both the breadth of our scholarly interests as well as to create homes for our faculty and students.

The reviewers have provided a thoughtful report, highlighting our strengths and challenges as well as recommending opportunities where we might further improve our Faculty across a spectrum of issues. This administrative response has been informed by the discussions and consultations we have engaged in to date in the Faculty as outlined above. Although not mentioned specifically by the reviewers, as part of our Self-Study process and our consultations identified areas that we will continue to work on, for example, regularly reviewing questions of equity as it relates to our professoriate and staff.

We have structured our response to align with the review's Terms of Reference, commenting on academic planning, and priorities last, as this section is informed by our Faculty's discussions of the reviewers' insights and recommendations related to teaching, research, internal organization and finances.

The Faculty's commitment to excellence in undergraduate and graduate teaching

Undergraduate

- *The reviewers noted that large undergraduate classes are a challenge for all public universities and they strongly recommended a plan to improve student learning and student experience in the Faculty's large lecture courses.*

Within Arts & Science we have aimed to ensure that classes with large enrolments are taught by our best teaching staff and are accompanied by smaller group tutorials and/or labs in order to maximize students' learning opportunities. We also offer an array of smaller-scale experiences. During our initial consultations this term, we have heard from students that classes that include a tutorial or lab section, as well as our smaller class opportunities, do in fact create a more engaging experience for them.

The reviewers suggested that we consider technological supports that could be put in place to further enhance our students' learning experience. This year's Advancing Teaching and Learning in Arts & Science (ATLAS) initiatives are expected to generate new opportunities to deploy technologies in creative ways, and to permit greater levels of engagement in and outside of the classroom. These past two years, we have supported Massive Open Online Course (MOOCs) pilots which may suggest new technologies that can support student learning in large classes. The reviewers also suggested that we record our large classes and make these available to students. We will work with teaching staff that are eager to have their class recorded, and undertake a pilot project to make these recordings available online for a selection courses in the 2014-15 academic year. The pilots will be evaluated and considered as part of our planning for large enrolment courses.

The Vice-Dean, Teaching & Learning will develop a plan to support our teaching staff and further enhance student learning in large lecture classes. The plan will be informed by specific disciplinary

pedagogies and perspectives within our academic units, as well as research into large class pedagogy in general.

We are also considering a broader analysis of all our first year offerings including a review of the balance between large and small classes. First year offerings and experiences include our First Year Learning Communities, First Year Seminars (199s), College Ones, and Big Ideas. As the Big Ideas courses and the One programs expansion were just recently launched the appropriate time for such an analysis will need to be considered.

- *The reviewers suggested the Faculty explore the possibility of offering guidance in future career preparation and work opportunities for students.*

This academic year we launched our STEP Forward initiative whose aim is to guide students through reflective thinking about their professional goals and choices, and prepare and support them in selecting programs at university, planning for their future careers, and forming connections with mentors among alumni, teaching staff, career advisors, and more senior students. Key aims of STEP Forward include making explicit the importance of connecting academic knowledge and skills to personal values and growth while actively integrating such personal development skills with academic knowledge, critical thinking and the actualization of professional skills. Our first call for STEP Forward proposals in the fall of 2013 resulted in 55 proposals from our academic units and colleges. We will evaluate the success of these pilot projects and will consider funding them on an ongoing basis. As part STEP Forward we are also considering how to best provide support in the Dean's Office for our academic units which wish to offer more professional experiences for students. In discussions with the Arts & Science community, we heard of the benefits of the variety of options currently available for our students including service learning, experiential learning, and internships. A small percentage of our students also participate in the Professional Year Experience program, administered by the Faculty of Applied Science & Engineering. During our consultations, we heard that such a program might be desirable for the Arts & Science community, as would a more prominent emphasis on the possibilities and benefits of research experiences within the Faculty. We will explore such possibilities in discussion with our academic units.

Graduate

- *The reviewers recommended that enrolment growth be aligned with professional master's programs to enhance employment opportunities for graduates.*

Arts & Science offers a broad array of doctoral-stream masters and PhD programs as well as professional master's programs. Three new professional masters programs in high demand areas were proposed and approved during 2008-13, and two departments are currently developing proposals. This past year the Dean's Office has ramped up its ability to provide financial modelling and advice for units who wish to propose professional masters programs.

We also are working to promote a broader, multi-faceted strategy to support the academic and non-academic professional development of our students outside of programs. Students in our doctoral stream masters and PhD programs have expressed greater interest in having more opportunities facilitated by their academic units to explore disciplinary, non-academic career opportunities. This term we have initiated a process to gather information about the current activities of our units in this area, with the aim of sharing best practices. We will also explore the potential to partner with the School of Graduate Studies and Career Services.

- *The reviewers suggested the monitoring of the time taken for students to complete their degrees.*

Time-to-completion (TTC) for our graduate programs is monitored and discussed in depth during individual graduate program reviews. The Faculty's tri-campus average TTC for our programs and by sector compares favourably to our international comparators. However, annual TTC across the sectors has gradually increased over the past 4 years and data show increasing numbers of students enrolled in years 6-9. Although TTC is often discipline-specific, we have begun a more in-depth analysis and conversation with Arts & Science chairs, directors, and graduate coordinators regarding curricular planning and alignment, supervisory practices, and student advising enhancements to decrease time to candidacy and completion. The Vice-Dean, Graduate Education & Program Reviews launched a 'PhD Time to Completion' Consultation and Review process. Phase I involved analysis of enrolment, program, CGPSS, and other data, completion of an environment scan of best practices related to TTC at other universities, and consultation with Faculty tri-campus program stakeholders. Presentations have been made to academic administrators, the Graduate Advisory Committee (GAC), the Graduate Curriculum Committee, and Council. These presentations have resulted in lively and serious discussion of TTC issues. Several units have brought forward their program-specific information for discussion with their faculty and graduate students. We are developing a clearer understanding of the factors affecting TTC. We will be working with the Graduate Advisory Committee in 2014 to: develop a process for a formative review of unit-level TTC and identify areas needing improvement; identify potential IT and other Arts & Science support needed to assist program-level monitoring of students; and, develop a TTC best practices document based on our own and other universities' experiences.

- *The reviewers recommended enhancing the training of teaching assistants (TAs) and improving mechanisms for feedback on their teaching performance.*

The University's Faculty and teaching assistants share a common interest in ensuring the effectiveness of undergraduate teaching. During our consultations we heard that graduate students consider the existing university offerings such as the Faculty's expanded Writing Instruction for Teaching Assistants (WIT), and the University's Teaching Assistants' Training Program (TATP) and English Language and Writing Support (ELWS), to be helpful. We are proud that the A&S WIT program has recently been awarded the University's Northrop Frye Award in recognition of its achievements in linking teaching and research. Chairs and directors whose units are participating in the program praised its effectiveness. We will ensure we can respond to all Arts & Science academic units that are interested in participating in WIT. We will work with the University's Centre for Teaching Support and Innovation, the School of Graduate Studies, and our academic units to ensure that opportunities for general training are well known.

Graduate students also expressed a desire for more discipline-focused guidance around what is expected of them. This is a priority we share; we have been working with our teaching and learning committees in consultation with the Teaching Assistants' Training Program to identify ways to provide TAs with student feedback on their teaching. TA appointments and responsibilities in Arts & Science vary significantly by course, making standardized TA evaluations unfeasible. However, the online course evaluation framework allows instructors to select questions about TAs and tutorials or laboratories. We have drafted a recommendation that units include these questions on course evaluations wherever possible and that they administer paper evaluations of TAs where online evaluation is not possible, and will be consulting on this proposal with faculty, staff and students. Several departments already provide course-specific training for TAs. For example, Physics has begun to offer TA training that consists of weekly sessions in which TAs get an overview and practice with the equipment used in the upcoming practicals. In addition, each year the Department runs a 'microteaching' workshop for new graduate students.

The University is working on ways to consider how to provide guidance and support to graduate students and academic divisions with respect to TA training and feedback mechanisms.

- *The reviewers raised the issue of funding for domestic and visa graduate students.*

Our ability to attract more high quality graduate students depends on the continued academic excellence of our programs, improvements to the student experience, and the competitiveness of our funding packages.

With regard to the funding, we know one of the most effective strategies for attracting high quality graduate domestic students is to be explicit in our offer letters with respect to the funding that will be available to them. Our units' ability to compete with institutions offering more generous funding packages continues to be a central concern and priority. In 2012-13, we piloted a top-up funding program aimed at helping units attract their top domestic candidates. The Dean's Office worked with many units to put together competitive multi-year packages, with several including a sixth year of funding. The pilot program was successful based on the number of applicants accepting our offers. We are continuing the program for the current admissions cycle. The one-time-only MTCU funds distributed to FAS to help our units attract top tier domestic graduate students for fall 2014 was a welcome source of additional recruitment funds for this admissions cycle.

The provincial government's focus on expanding domestic student growth and lack of funding for international students, has limited our ability to admit international graduate students. In this context, any increase in funding for international graduate students may result from endowed international scholarships, or an increase in international students arriving with their own support. Given the strong consensus on the need to grow our international PhD enrolment, as a Faculty we have also committed to include international PhD students in the allocation of the Provost's PhD Enhancement Fund (PEF) matching program, which provides an excellent opportunity to leverage support from benefactors. We will continue our advocacy to the government for international graduate student funding.

We are working with our units to ensure funding communications with our students are helpful. During our consultations we have learned that offer letters and annual letters could be clearer in terms of specifying their funding. Graduate students have also suggested that it would also be helpful to have a schedule outlining when various funding components are released (e.g. scholarships, TA pay, RA stipends).

This academic term, the Vice-Dean, Graduate Education & Program Reviews has mounted workshops, by disciplinary sector, for our graduate coordinators and chairs. We have provided a detailed breakdown of the funds available for graduate student recruitment to each Arts & Science unit offering graduate programs, including DEIF, FAS funds and restricted funds. This allows to chairs have the up-to-date information they need on the recruitment resources they have available to them. In other words, we have worked with our units to increase their "graduate financial literacy." We have also developed a series of workshops for Graduate Coordinators and Graduate Assistants designed to improve our application and success rates and have seen significant advances in some units.

Effectiveness in fostering a culture of excellence and achievement in research

- *The reviewers recommended an assessment of how the Faculty could best facilitate the development of large-scale faculty-wide research initiatives.*

Across our discussions there was recognition that faculty-wide research initiatives were valuable but needed to begin from the bottom-up with respect to faculty members' research strengths and interests.

The Vice-Dean, Research & Infrastructure will facilitate discussions with the chairs and directors to see if any cross-sectoral (humanities, social sciences, and sciences) initiatives can be identified and enabled. It may be that some of the existing funding opportunities (such as the University's Connaught Fund aimed at bringing together leading researchers from multiple disciplines) can be accessed. Our consultations have indicated that providing support to interdisciplinary working groups of faculty on topics they identify of interest would be helpful, as would enhancing our capacity to support faculty in thinking about these kinds of research opportunities.

- *The reviewers emphasized the importance of improved physical infrastructure and enhanced research space to support the Faculty's continued excellence.*

The reviewers were clear that for the Faculty "to remain competitive, especially in the sciences, there is an urgent need for new facilities." The physical spaces in which teaching, learning and research are carried out play an important role in shaping the quality of the overall academic experience for faculty, students and staff, as well as the impact of what can be accomplished. It is important that we undertake a number of infrastructure planning activities to ensure we are strongly positioned to seize future funding opportunities with governments and donors.

As a first step towards understanding our physical infrastructure, we expect that the comprehensive space benchmark study that Arts & Science Office of Infrastructure Planning, initiated last year will be complete in 2014-15. This information will serve to identify the space needs of users as well as opportunities for better utilization of our space, including consolidating departments that are currently spread across the St. George campus and providing state-of-art research facilities for multiple user groups. While this work is still in the planning phase, we are undertaking strategically targeted renovations, the largest of which is the teaching laboratory renovations in the Ramsay Wright building. We are pursuing federal and provincial research infrastructure grants to contribute funds to several Faculty facilities.

Effectiveness of internal organization and financial structure

- *The reviewers noted that by and large the Faculty's organization appears to be working well but noted that it will be critical for the Dean's office to communicate often and clearly with academic administrative leaders and the faculty at large to ensure that they not only understand the actions taken by the Dean but the context in which decisions are being made.*

Our faculty, staff, students, and academic administrators are clear that we need to have opportunities in place to listen to and engage our community. We have discussed how the Dean's Office can better interact with our academic administrators, undergraduate and graduate students. We have begun to convene smaller and more informal groupings of chairs and directors to discuss faculty-wide matters. We are considering how to change the format of our monthly CPAD meetings in order to allow more time for discussion and engagement at an earlier stage in the development of proposed Faculty initiatives. There may be other informal groupings as well. We will work to ensure that we make use of existing committees to discuss Faculty-wide issues. While dean, I will also initiate visits to academic units in order to meet directly with faculty, students, and staff.

- *The reviewers raised the issue of 'terms of trade' on interdivisional teaching and the importance of its satisfactory resolution.*

Arts & Science is the biggest provider of interdivisional teaching services, currently offering support to several divisions and facing growing demand for cross-divisional teaching engagement from professional faculties. For the past academic year, senior members of the Dean's Office have been working with the

Provost's Office and the University's Planning & Budget Office, as well as with the leadership of our partner divisions, to put these arrangements on a rational footing so that the academic priorities of the participating divisions can be effectively addressed and financially sustained. Our aim is that a number of these arrangements will be in place for the 2015-16 academic year.

Campus relationships

- *The reviewers commented on the challenges inherent in the University's tri-campus model and large scope. They recommended continued focus on how best to leverage our tri-campus structure and cross-divisional strengths.*

Arts & Science collaborates extensively with the other campuses in order to take advantage of the University's tremendous breadth in research and teaching. The process of careful tri-campus planning, coordination, identification of principles for program development and collaboration has continued to evolve constructively. A key contributor to our communications is the Tri-campus Deans Committee, which meets every two to three weeks during the academic year to ensure the coordination of activities at the graduate level, as well as consultation and discussion on many other important academic policies and practices, such as those involving undergraduate issues, research, academic human resources, and student evaluation of courses.

Societal impact and outreach

- *The reviewers applauded the Faculty's commitment to community involvement, globalization, and conducting research of significant impact and recommend that we engage in peer bench-marking.*

Our commitment to globalization and community engagement is evident in our service-learning initiatives, International Course Modules, Research Opportunities, Research Excursions and study abroad programs. We also strive to ensure support and understanding from many audiences, including the public and government. In concert with our academic units, our Office of Communications will work over the course of the next academic year, to better record the activities and achievements of our faculty, staff, and students and to promote them within Faculty, University, and externally.

Academic planning and progress toward academic priorities

- *The reviewers suggested that the new dean should work to enhance communication across departments, colleges and EDUs in support of a common conversation about priorities and integrative planning.*

We engaged in Faculty-wide academic planning in 2009-10, and have followed with a Self-Study process in the 2012-13 academic year and into the fall of 2013. At this time, we are not proposing that we launch a Faculty-wide academic planning process over the next two years of my term as dean. Rather, we propose to identify specific Faculty-wide priorities on which we can focus our efforts.

Having consulted both within the Faculty and with the Provost on this way to move forward, this term I have initiated a discussion for us to consider a small number of priorities. Some of these have resulted from the recommendations of the reviewers, others have arisen through discussion in the Faculty. Examples of initiatives identified to date include the following:

- Comprehensively reviewing our large course learning environment with the aim of further enhancing student learning and the student experience.
- Assessing the experience of our international undergraduate students in order to improve the benefits they receive from the education we have to offer. This can include consideration of services and supports provided in tandem with our academic units, colleges, and the University.
- Enhancing the graduate student experience through continued improvements to our recruitment, to students' progress through their programs, and preparation for future careers.
- Strengthening the Faculty's information technology capacity, and the ability of Arts & Science to assist our academic units in meeting their IT needs.
- Unit-by-unit consultation: with the assistance of a "360 internal review" of a department's operations, developing a plan or a series of initiatives to help the given unit meet its academic aspirations.

These priorities will be further discussed and more fully developed as appropriate during 2014-15.

Summary

The Report and its recommendations have been discussed within the Arts & Science community these past three months and will certainly continue to generate discussion and provide guidance for the Faculty. The reviewers identified the Faculty's major challenges, along with our achievements.

Despite our accomplishments, we continue to face even greater financial constraints. Through our consultations, we have heard about the continued need to increase our faculty complement. This has been and will continue to be a challenge to do at the level required for Arts & Science. The provincial four-year tuition framework will result in decreased provincial funding for us. Even more significantly, the provincial government has changed its policy related to undergraduate arts and science program fees. These changes will have a substantial impact on our budget and, thus, on our ability to hire teaching staff, and deliver our academic programs.

Our administrative response highlights how we have begun the process of addressing the Report recommendations. We have also initiated a process for identification of a number of specific Faculty academic priorities that we will focus on over the short- to medium-term in order to build on our strengths, enhance our collaborations within the University, and advance our leadership in research and the academic experience of our students.

Sincerely,



David Cameron
Dean, Faculty of Arts & Science

Review Summary

Program(s):	Architectural Studies, B.A., Hons. (Major) Master of Architecture, M.Arch. Master of Landscape Architecture, M.L.A. Master of Urban Design, M.U.D.
Division/Unit:	John H. Daniels Faculty of Architecture Landscape and Design
Commissioning Officer:	Vice-President and Provost, University of Toronto
Reviewers (Name, Affiliation):	<ol style="list-style-type: none">1. Professor Christine Macy, Dean, Faculty of Architecture & Planning, Dalhousie University2. Professor Sacha Menz, Past Dean, Departement Architektur, ETH Zürich3. Professor Adèle Naudé Santos, Dean, School of Architecture and Planning, Massachusetts Institute of Technology
Date of review visit:	November 5–7, 2013

Previous Review

Date: October 22-23, 2008

Summary of Findings and Recommendations:

1. Undergraduate Programs: Bachelor of Arts, Architectural Studies, (with the Faculty of Arts and Science)

The reviewers observed the following strengths:

- Courses are attractive to students; steady increases in enrolments
- Bright, energetic students

The reviewers identified the following areas of concern:

- Need increased space to support studio-based components of the program and workshops, in addition to more computer labs
- Need for more technology, research, and independent study opportunities

The reviewers made the following recommendations:

- Provide additional resources and attention to make the program viable

2. Graduate Programs (Master of Architecture, M.Arch; Master of Landscape Architecture, MLA; Master of Urban Design, MUD)

The reviewers observed the following strengths:

- One of the top schools in Canada for educating architects and landscape architects
- Success transition to graduate programs as entry to practice
- Enthusiastic, high quality students in M.Arch and MLA programs

The reviewers identified the following areas of concern:

- Master of Urban Design program has not reached target enrolments or reached its potential
- Increasing enrolments have placed stress on the faculty

The reviewers made the following recommendations:

- Consider the best use of faculty resources, especially in supervising theses
- Consider changes to improve the MUD, including streaming the Master of Arts in Urban Design Studies (FAS) and the M.Arch in Urban Design into one program
- Establish a Ph.D. program to educate future scholars and teachers of architecture

3. Faculty/Research

The reviewers observed the following strengths:

- Rising stars added to an already strong faculty with many active scholars

The reviewers identified the following areas of concern:

- Little sponsored research being conducted by faculty

The reviewers made the following recommendations:

- Encourage faculty to prepare proposals for specific grants to HSRC, the CURA program or the Research/Creation program

4. Administration

The reviewers observed the following strengths:

- Faculty is well on its way to resolving longstanding space problems
- Successful collaborations at the University and with external organizations

The reviewers identified the following areas of concern:

- Concerns about annual fundraising

The reviewers made the following recommendations:

- Make alumni fundraising a priority
- Pursue a comprehensive Faculty academic and strategic plan

Last OCGS Review(s) 2006

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

- Daniels Faculty of Architecture, Landscape, and Design Self Study, October 2013
- Towards 2030: The View from 2012
- UTQAP Template for the Cyclical Review: Terms of Reference
- External [Cyclical] Review, October 22-23, 2008
- Presentation of the new building on One Spadina Circle

- Samples of student work from the option studios in all three programs
- Transition to a new Budget Model at the University of Toronto, CAUBO June 17, 2008
- FALD Administrative Organizational Structure
- FALD Constitution and By-Laws of [Faculty] Council
- FALD Academic Plan Draft, October 29, 2013.
- FALD Curriculum Committee Report, 2012-13
- PhD Graduate Program proposal, December 12, 2012
- Program charts (degree requirements) for: Master of Architecture, Master of Landscape Architecture, Master of Urban Design and the Architectural Studies Major
- Comparative summary of Faculty budget allocated to academic and support staff and operating expenses (2008/09 and 2013/14)
- Historical Admissions Statistics in the graduate programs from 1999 to 2013

Consultation Process:

The reviewers met with the Vice-Provost, Academic Programs; Program Directors, Master of Architecture, Master of Landscape Architecture and, Master of Urban Design Programs; Chief Administrative Officer; Faculty Registrar; Assistant Dean, Academic Programming; Associate Dean, Research; Associate Dean, Academic; GALDSU (Graduate Architecture, Landscape, and Design Student Union); Director, Bachelor of Arts in Architectural Studies; Director, Visual Studies Program; Deans of Cognate University Faculties; tenure stream, adjunct and sessional faculty members; Faculty Librarian; Director of Advancement; Dean, School of Graduate Studies; alumni; and the Architect for the One Spadina Project as well as a senior member of the Daniels Building Project Committee.

Current Review: Findings & Recommendations

- Positive distinction between undergraduate program as non-professional and graduate programs as professional, providing a clear identity for the programs in a Canadian context

1 Undergraduate Program

Architectural Studies, B.A., Hons. (Major): The reviewers, in their report, restricted the scope of their formal assessment to graduate programs, and did not include the undergraduate program in Architectural Studies, which was recently transferred to the Faculty.

The reviewers observed the following strengths:

- Curriculum and program delivery
 - Four areas of emphasis in program—generalist, design, society, and technology—make sense

2 Graduate Program

Master of Architecture, M.Arch.; Master of Landscape Architecture, M.L.A.; Master of Urban Design, M.U.D.

The reviewers observed the following strengths:

- Objectives
 - Positive vision of integrating architecture, landscape architecture and urban design
- Admissions requirements
 - Appropriate for each program
 - Students feel well-prepared to enter programs
- Curriculum and program delivery
 - *All programs*
 - Superstudio is excellent and in keeping with the Faculty's vision
 - Many studios take on projects in the larger urban and global contexts
 - *Architecture*
 - Positive about alignment of student theses with faculty research interests
 - Options studios in the architecture sixth semester collectively focus students in working groups on specific design topics, methods, and/or questions relevant to the discipline
- Quality indicators
 - Virtually all students complete their programs on time or with just one additional term
 - Students feel prepared for their future in practice
 - Students very satisfied with the programs and their chosen career paths
 - Alumni are well-represented in the design professions in Toronto
- Student funding
 - Newly established Daniels scholarship has great potential to support students

The reviewers identified the following areas of concern:

- Overall quality
 - Programs have yet to realize their full potential
- Objectives
 - Learning outcomes are unclear
 - Dominance of architecture inhibits the integrated vision for the programs
- Curriculum and program delivery
 - *All programs*
 - Cohort of advanced placement students in architecture and landscape architecture comprise a significant portion of students entering in the second year
 - Skill levels of advanced placement and continuing students are divergent
 - Curriculum is in a state of evolution, with some parts working well and others requiring reconsideration

- Faculty differ in their philosophical approach to the curriculum, resulting in lack of integration and rational sequencing
- Students do not have sufficient disciplinary understanding to take full advantage of the Superstudio structure
- Intensity and pace of programs do not allow students to engage in learning outside the classroom, though this is normal for three-year master's programs
- *Urban Design*
 - Urban design is small, lacking critical mass and focus
- *Architecture*
 - Current first year architecture design brief requires additional development
 - Comprehensive building studio takes place before architecture students have a sufficient breadth of knowledge in structures, building systems, construction, and tectonics
 - Only one thesis advisor available per student, and only a small number of faculty are engaged in thesis
 - Students rarely compile thesis design work into a booklet, limiting students' ability to learn from each other across the years
 - Structure of architecture program is not rigorous enough compared to international peers
- *Landscape*
 - Unclear how ecology and technology courses are integrated into the first year landscape studio sequence
 - Landscape students' visualization and modeling skills are behind those of architecture students
- Enrolment
 - Recruitment strategies are still in their early stages
 - Applicant pools are not yet deep

The reviewers made the following recommendations:

- Objectives
 - Engage in further consideration of learning outcomes
 - Create a clearer vision for the ambitions of the Landscape program
- Curriculum and program delivery
 - *All programs*
 - Engage in curricular review, with attention the sequence of required courses and synergies between courses
 - Study the impact of the growing advancement placement cohort on the programs
 - Consider adding sociological contexts, urban geography, and urban economics and process to the core sequence of all three programs
 - Better position Superstudio in the sequence of study
 - *Urban Design*
 - Work to ensure program viability
 - *Architecture*

- Add supporting disciplines to the first year architecture outcomes to better support studio goals
- Broaden the knowledge base that students have before they take Comprehensive building studio
- Reconsider the current practice of having Options Studio tutors become thesis supervisors
- *Landscape*
 - Develop case studies in first year landscape design to correspond with landscape history offerings
- Enrolment
 - Work to expand applicant pools, develop a recruitment strategy, and retain exceptional students who are admitted
 - Track admissions statistics for advanced placement students
- Student funding
 - Leverage Daniels scholarship to raise the Faculty's profile

3 Faculty/Research

The reviewers observed the following strengths:

- Overall quality
 - Faculty are highly dedicated and committed to teaching
 - Practitioners hold an international reputation as the leading thinkers in innovative professional practice in Canada
- Research
 - Recently appointed hires with a humanities orientation are well positioned to make an impact on their fields
 - Recent hires are publishing in significant scholarly venues
 - Research conducted in technology and applied sciences has been the most effective in securing external funding and partnerships
 - Strong innovative practice research despite economic constraints of Canadian market
- Faculty
 - Complement plan is on track with the increase in undergraduate enrolments and planned steady states for the graduate programs

The reviewers identified the following areas of concern:

- Research
 - Research in the Faculty has yet to achieve its full potential
 - Technology research is not apace with global comparators
 - Limited number of faculty with clearly established research agendas
- Faculty
 - Complement continues to be stretched
 - Faculty being over-utilized in developing core programs

- Difficulty in finding faculty to fill academic leadership roles due to full teaching loads

The reviewers made the following recommendations:

- Overall quality
 - Raise the Faculty's research profile
- Research
 - Give more attention to securing external funding and partnerships
 - Develop a strategic research plan that benefits from the University's Strategic Research Plan
- Faculty
 - Provide support to recent hires so that they can develop their full potential, especially in research
 - Engage new faculty in articulating and implementing the vision for the Faculty
 - Maintain a strategy for recruiting and retaining faculty in professional practice

4 Administration

The reviewers observed the following strengths:

- Relationships
 - EDU structure creates opportunities for engagement across the University
 - Recent coordination with Visual Studies is evidence of interdisciplinary academic programming
 - New building will enhance relationships and visibility
- Organizational and financial structure
 - Faculty has undergone tremendous change in the past five years since the appointment of the Dean and the adoption of the new budget model
 - Positive recent hires in advancement, recruitment, operations, and finances
 - Effective reorganization of the Dean's Office
 - Active engagement in revenue generation via advancement and recruitment efforts
 - Significant recent gifts in support of student aid and new building
- Planning / Vision
 - Faculty is in the midst of reconceptualising its internal structure, external linkages, and wider impact
 - Strong leadership has brought collective commitment to vision for the Faculty
 - Good ambition to create a Ph.D. program
 - Space and infrastructure improvements and plans are positive for the Faculty and the work of its students, faculty, and alumni
 - Draft strategic plan accurately reflects the collective vision for the Faculty and connects with the University's Strategic Plan
- Department/unit/programs relative to the best in Canada/North America and internationally

- Significant international profile, which aids the Faculty in recruiting excellent new faculty
- Current strategies to raise Faculty profile are appropriate

The reviewers identified the following areas of concern:

- Organizational and financial structure
 - Decision-making processes and organizational structure are not widely understood by the faculty
- Planning / Vision
 - Ph.D. slow in development; appears to be some internal disagreement about the correct direction for the program
- Department/unit/programs relative to the best in Canada/North America and internationally
 - Unclear how the Faculty has used its profile to identify and develop its research agenda and recruit students

The reviewers made the following recommendations:

- Relationships
 - Further develop University relationships in the areas of digital visualization, materials science, engineering, and sustainable cities
 - Seize opportunities to develop research partnerships (including with the professional and industrial sector), strengthen professional practice components of the accredited programs, and enhance relationships with professional organizations of architects and landscape architects
- Organizational and financial structure
 - Consolidate some of the Associate Deans' functions into a single, substantive appointment
 - Adequately support the new space and its infrastructure
- Planning / Vision
 - Raise the research profile and create a Ph.D. program so that the Faculty can continue to thrive
 - Narrow the focus of the proposed Ph.D. towards more traditional scope
 - Design Ph.D. based on current faculty strengths

ADMINISTRATIVE RESPONSE – Appended

ADMINISTRATIVE RESPONSE: EXTERNAL REVIEWERS' REPORT
John H. Daniels Faculty of Architecture, Landscape, and Design
University of Toronto

FINAL, March 2014

We appreciate the time, thinking, and insights that the visiting external team brought to the review process and their report on the Daniels Faculty. As acknowledged in the report, the Daniels Faculty has undertaken substantial growth in the depth and breadth of its programs, including adding undergraduate teaching, making substantial reforms to its exiting professional graduate programs and recently absorbing UofT's programs in Visual Studies. The Faculty has also embarked on an extensive program of public outreach, the development of a stronger research agenda and research partnerships, and is pursuing a major expansion of its facilities by building a new platform at One Spadina Crescent. Only a few years into these changes, the report acknowledges that the Faculty should still be very much understood as a work in progress.

The external reviewers endorsed the Daniels Faculty's "vision of an integrated interdisciplinary faculty and student body" as "bold", but identified some specific difficulties in the delivery of this vision. Their concerns were mainly with aspects of the Faculty's professional masters curricula, its research agenda, and in its planned doctoral program. There were also important questions about how leadership could be better spread across the faculty.

Many of the questions posed by the review and external report's findings are relevant and warrant response and action from the Faculty. In our response, we want to emphasize the context in which our Faculty and programs must be understood. These are: 1) the University of Toronto's policies and organizational model, 2) the Canadian field of professional design programs, and pool of candidates, and 3) (the nature of) stand-alone professional graduate programs in Architecture and Landscape Architecture combined with 4) (non-professional) Bachelor of Arts in Architectural Studies programs.

We have organized our response under of series of themes highlighted by the external evaluators report.

Academic Planning and Development

The external report notes that the current draft of the Academic Plan "appears to accurately reflect the collective vision for where the Faculty is headed" and "is widely shared in principle and [...] maps well onto the University's Strategic Plan".

The review and consultation process for the Faculty's Academic Plan is currently underway, as is an initiative to further expand and support our research initiatives through a Strategic Research Plan and the installment of a research officer.

We are currently undergoing a period of consultation regarding the plan with faculty, students, alumni, professional bodies, and cognate faculties within the University of Toronto. In addition to this, we have been conducting breakout sessions with smaller groups of faculty members around key issues like thesis, the core curriculum, integration of the technology sequence, recruitment, etc.

We are concurrently developing a strategic research plan for the Faculty, which includes expanded support for the research activities of our faculty members. This includes increasing our collaboration with cognate faculties and an international network of academic, non-profit, community, government and industry partners; and improving upon our existing strengths in urban metrics, urban sustainability, the visualization of information and built environments, and computation-driven fabrication. An Associate Dean of Research, appointed in 2011 has been working with the University Research Office and assisting faculty with the identification of appropriate grants and opportunities for sponsored research with a focus upon younger pre-tenured faculty to increase their access to grants as they move toward promotion and tenure. The installment of a research officer will further support new research initiatives at the Faculty.

Leadership and Administration

The report highlighted the importance of deepening faculty participation in leadership roles and the need for mentorship of new faculty, and we believe these are both essential issues that must be addressed now and in the coming years. The report acknowledges the strength of the Dean's vision, and the great extent to which this vision was shared by the faculty, and a newly invigorated, and expanded staff.

In recognition of the fact that the substantial growth of the Faculty in recent years has placed new strains upon our staff in areas including the mentorship of our new faculty and the redefinition of leadership positions, we are currently reviewing our organizational structure with the aid of the Vice President for Human Resources.

Several changes have recently occurred that may not have been in place long enough for the external committee to see or evaluate, or for the faculty and staff to be able to measure. In September 2013, the position of Assistant Dean, Academic Programs and Outreach was established, and an individual was hired to work with faculty and staff to do academic planning, engage in ongoing program development, monitoring, and progress, and to forge new external relationships.

Change in the administration has been in-progress for three years. The Student Services, IT, and Dean's staff have been restructured. Of the 15 academic staff that were serving 5 years ago, after the last external review, only 4 had college or university credentials. Of those 15 staff, only five of the highest performing staff remain today, and each have been promoted in areas such as Finance, IT, and Advancement. The 20 staff today (more are needed and planned) are well-educated, highly motivated, and focused on working collaboratively, with those in key leadership positions possessing masters degrees in relevant areas (MBA for CAO, M.Ed. for Registrar, etc.).

The report was correct in identifying that there have been challenges in filling key leadership positions, particularly at the level of Associate Deans and Program Directors. The core, full-time faculty is young, relatively small, and focused on their research and teaching. The four or five faculty that have been at the faculty for more than 10 years all served in leadership roles prior to the recent changes, and some had to be recruited for a second, more recent tour of duty. Now, with a few faculty newly promoted with tenure, and one or two senior hires, we are beginning to cultivate a new generation of leadership.

Pending the completion and recommendations of our review of the Faculty's administrative structure and current functions in collaboration with the Vice President for Human Resources, we foresee making any recommended changes to the organization of the Faculty.

Relative Size and Balance of Professional Programs

The external report expressed the view that the Faculty's intra-disciplinary vision is being challenged by the imbalance between the size of the urban design, landscape architecture, and architecture programs.

The size of each of our graduate programs, and the relative proportion of one to the next, is calibrated to the size of the field, the pool of prospective students, and the possibility of placement after study. All these are measured and balanced with the Faculty's concept of what constitutes a critical mass of students in each program. The relative size of our programs is similar to what is found at many peer schools of design. Any perceived imbalance is actually a reflection of the corresponding demand for each of our degree programs and opportunities for graduates in these respective fields.

The proportion of graduate enrollment at DFALD, and that of our peers, is typically in the following range: 70-75% Master of Architecture, 20% Master of Landscape Architecture, and 5-10% Urban Design. Schools with this mix of programs and these ratios include University of Pennsylvania's Design School, University of California at Berkeley's College of Environmental Design, University of British Columbia's School of Architecture and Landscape Architecture, and Harvard's Graduate School of Design.

Strength of Application Pool

The external review team suggested that DFALD should work to expand and strengthen our applicant pools by developing a recruitment strategy and redoubling our efforts to retain exceptional students who are admitted.

The arc of performance of our applications and yield is, over time, strong. The applicant pool to our combined professional graduate programs has nearly tripled in the past decade, more than doubling since the last external review, and has increased 27% in just the past year.

As documented in figures provided to the external evaluators, the pool of applicants for the Faculty's combined professional graduate programs have almost tripled over the past 10 years, from a time when our graduate programs were relatively new. Growth during the period since the last external review in 2008 has been particularly strong, with applications between 2008 and now doubling, with only moderate growth in the size of the student cohort. Note that combined applications to our professional graduate programs for 2014-2015 have increased 27% in just the past year (this information was attained just after the external review). With regard to yields, our largest program, the Master of Architecture, consistently draws 60-75% yield from our accepted pool with more than half of the top 20% ranked-candidates.

The external report may have been using more common pools for undergraduate-to-grad 4+2 professional programs (i.e. as at U. Waterloo) as a point of reference, wherein there are always larger numbers of applicants from high schools. Even in our non-professional, newly re-established Bachelor of Arts, Architectural Studies program there are larger numbers of applicants than for our graduate programs, with roughly 1500 applications for 175 potential spots this year. Alternatively, pool/enrollment comparisons may be to application numbers at long-standing elite, private programs in the US. Each year, Harvard, Princeton, Yale, Columbia, MIT, U-Penn and U-Michigan (plus a few others) compete for roughly the same 5-800 candidates applying to Masters Programs in Architecture. Given the competition, a majority of these programs will have yields on offers that do not exceed 50%.

Our estimates are that we are coming close to maximizing our position in the Canadian field for potential 1st degree professional degrees. Last year there were 396 applicants to our Master in Architecture Program, and we met our intended yield of approximately 80 students. This year we have 466 applicants and the intended yield will remain the same. These numbers compare well to all the premier programs in the United States, and exceed our closest Canadian competition (UBC's SALA.).

By all accounts, we have a very strong arc of admissions performance. Our plan is to hold the numbers of 1st degree professional graduate students constant over the next 3-5 years, and continue to increase, where possible, the pool of Canadian applicants, but to concentrate on leveraging our international reputation to draw more students from abroad. Any further growth to our numbers will occur only in the anticipated expansion of the post-professional degree offerings, which will capitalize upon the expertise of our faculty, enhance their research agendas, and potentially feed into our anticipated PhD program. The addition of these post-professional offerings will attract high quality candidates interested in expanding their vitae with additional coursework in advanced visualization, computation and fabrication, urban sustainability, and design and health. In addition to contributing to the professions the addition of these areas of study will allow for the possibility of specialization within the first professional degree programs, which we anticipate will attract a higher quality pool of applicants overall.

Despite the fact that our applicant pool has been steadily increasing, we concur that the growth of our Faculty in the past several years warrants a new recruitment strategy. Plans for the rollout of this strategy are underway and include increased international recruitment, an anticipated new website, enhanced alumni engagement, a more robust presence at university

fairs and other opportunities for engaging prospective students, and ongoing reforms to how we attract top candidates.

Urban Design Program

The external report states that the Faculty has not addressed some of the concerns raised by the 2008 external review about the size and strength of the Urban Design Program.

The challenges faced by our Urban Design program reflect a generally shrinking applicant pool to similar programs throughout North America. We are addressing these issues in an ongoing manner that includes the potential redefinition of the Urban Design program relative to other anticipated post-professional programs and the PhD.

Our Urban Design program presents a distinct set of challenges that must be understood in the context of other programs of its kind. The Urban Design program offers an advanced post-professional Masters degree, meaning it requires applicants to possess a prior professional degree in Architecture or Landscape Architecture. This makes the potential pool of applicants limited from the outset.

Nevertheless, there have been substantial changes to DFALD's Urban Design program since issues were identified in the 2008 external review. As outlined in the Self-Study, an ad hoc committee report made recommendations in 2011 (many of which were implemented by 2013), including a reevaluation of DFALD's Urban Design Program relationships to the Planning Department, Urban Design Program, and a renewed commitment to the study of Toronto from a morphological standpoint as a way of regaining the distinct identity of the program. The Urban Design program has also undertaken substantial curricular reforms including the introduction of the Superstudio in the first term of the curriculum, a new, focused core urban design studio in the second term, and more discipline-specific instruction in all of the required technical courses.

Challenges remain for the Urban Design Program. In its initial years, in the early 2000's, the Urban Design program drew students locally and Canada-wide based on a backlog of demand from young professionals (it is still the only UD program in a design school in Canada.) Several changes in the field since that time have affected both demand and enrollment. Urban design degrees were once commonly sought by individuals with professional Bachelor of Architecture degrees as a way to study at an advanced level and achieve a master's degree. Over the past decade Professional bachelor degrees in Architecture and Landscape Architecture have been phased out, (a few remain in the US, none in Canada), and with these a substantial pool of North American students for UD programs has disappeared. Students with Professional Master's degrees may now pursue Doctoral studies within many existing, and newly established programs.

The combined effect of exhausting local demand and the changing degree stream into UD programs contributed to the application pool at DFALD's UD program to dropping to 18 in 2008 (the year of the last external review). Interest in DFALD's UD program and demand for enrollment, almost all international, has been increasing almost every year since. This

year and last year the pool was 57 students (3 times the number in 2008). The UD Program Director and Faculty Registrar are now also recruiting internationally for this program.

More substantial and structural changes to the Urban Design program are being actively considered, including options outlined in a 2011 ad hoc report. One option is to merge the program with other small post-professional degree programs in Architecture and Landscape Architecture, and shortening its length in line with these other programs (1.5 years, as opposed to 2 years). Another option being considered is removing the prerequisite for a professional degree to enter the Urban Design program, allowing individuals with a range of planning and design and other appropriate backgrounds to pursue a Master of Urban Design. An additional option, discussed soon after the 2008 external review is to allow Graduate Students in Architecture and Landscape Architecture to gain an advanced degree in Urban Design while at the school. This is how most Urban Design programs maintain a critical mass of enrollment at peer Faculties, including the University of Pennsylvania and UC Berkeley. Any of these options would require various levels of review and approval through governance. Further reform, and action on our Urban Design program will be undertaken as part of a planning other post-professional programs (for example, in Architecture, Design, and Health), and in relation to the roll-out of the anticipated doctoral program. .

Professional Graduate Curricula

The external report identified a lack of “rigor” in some aspects of the professional curricula, and questioned areas of performance (including the first-year core in Architecture, the timing and placement of Superstudio, and reforms to the thesis process) that were found to be exemplary in recent external professional accreditation reviews.

We believe that the findings of the external review committee regarding the professional degree programs sometimes misunderstood the overall structure and organization of our professional curricula and their pedagogical aims

Many of the issues raised by the external review committee, including the proper timing and exposure of students to allied disciplines (architecture to landscape, landscape to urban design, etc.), are the subject of lively debate among design pedagogues across North America and internationally. We have reviewed and are focusing on these issues, and the approach we are taking is deliberate, and follows from a great deal of study and consultation among Daniels faculty and students.

As described in both the self-study and during the external review visit, our 1st degree professional curricula in both Architecture and Landscape Architecture are built on the concept of a 2 year core, involving two, one-year foundation cycles with the final 3 (or 2 in landscape) semesters devoted to more specialized study. This structure will allow further planned specialization in the upper years as the curriculum evolves. This structure is also relatively common among the 3 year graduate curricula at peer Canadian and international programs.

A concern was raised both about the apparent disconnect between the first and second-

semester studios in the M.Arch program and representational skills in the MLA program. The MLA program, first-year studios are closely paired with visual communications and move through a series of iterative exercises from two-dimensional to three-dimensional representation and design. In the M.Arch program, the first-year studio is perceived as foundational, introducing the methods and sensibilities of the disciplines through a series of exercises with an emphasis upon the fundamental relationships between structure and geometry at a basic, conceptual level. This deliberately narrow focus is then expanded in the second semester with site-driven and environment-based criteria that are paired with non-studio courses to introduce a synthetic way of thinking about design that is then repeated in the fourth-semester Comprehensive Studio.

The report's specific recommendation that the Superstudio, which shares a platform across all three professional masters programs, should be moved from the 3rd to the 5th semester, is counter to the structural idea of a two-year core, with a 1 or 1.5 years period of specialization that is the key pedagogical organization of our professional programs. Such a change would also either eliminate our advanced, Faculty-wide option studios in the 5th semester, or displace them to the 3rd semester, when students would be ill-prepared to study with the roster of visitors that offer these studio courses.

Following a sequence of foundational studios within their own disciplines, Superstudio engages students in a complex set of urban projects in Toronto through an interdisciplinary dialogue that captures their shared knowledge rather than leading them further into a more parochial definition of their respective practices. The success of this model is evident in third-year option studios, which consistently feature a mix of students from all three programs. The switch proposed by the external review committee also takes an ideological stance on the timing and placement of interdisciplinary engagement that our Faculty does not agree with. We are very careful to distinguish between logistical problems of delivery, and pedagogical philosophy / goals.

Concerns were raised in the external review committee report about the integration of the relatively large influx of advanced placement students in both the Architecture and Landscape Architecture programs. It is true that our yield in both programs has been very high. This is a testament to the strength of this application pool in Canada and growing desirability of our programs in Architecture and Landscape Architecture. We are closely monitoring this situation as we evaluate our current applicant pool for 2014-2015.

The first-year core in our professional masters prepares our students well for the integration of students with advanced standing and the standardization of deliverables across Superstudio ensures a leveled playing field within and between the degree programs. We also see the influx of new students as an advantage in the second-year. In architecture, we have made the first year class smaller to make room for an influx of AP students in the 2nd year. This improves the quality of the pool in the first year, and our ability to focus on fundamentals with the 1st year cohort. The quality of instruction remains high across the entire core, as the size of the individual sections (i.e. student-teacher ratio) of second year studios is identical to the first-year. Moreover, while we concur with the external committees recommendation to find ways to further strengthen core teaching to address issues of sociological context, urban geography, and urban economics, the introduction of the

Superstudio has been key to integrating these issues across all three professional programs. Most importantly, Superstudio's large-format platform conducted across all three professional disciplines instills a sense of competitiveness both between the three design programs and between the AP and existing students that elevates the work and learning outcomes overall. We are aware they may be some student discomfort with being immersed in a more plural, competitive environment, and are working to address this, but we have also seen successful learning outcomes from introducing this change in the past two years. We have been having ongoing discussions with GALDSU (Graduate Architecture Landscape and Design Student Union) about how the spirit of the cohort can be maintained even with a significant influx of students in the second year.

The report also argues for more integration of technological course content into the early years of the professional architecture curriculum. We agree with this in general, and are currently refining the curriculum in this direction with revisions to the structure and pedagogical aims of the Visual Communications courses in the first two semesters and an earlier introduction of structures in the core curriculum. Nevertheless, technologies are introduced in our first year core, and in architecture these are reiterated in the second year in our comprehensive studio, wherein a great deal of technological integration has consistently been achieved.

The report also raises questions about reforms to our M.Arch. thesis, including concerns about a limited advising model, based on the perception that there are not enough faculty members involved in thesis. We think there has been a misunderstanding around the reform of the architecture thesis. First, there are nine core faculty teaching in the thesis sequence, more than two-thirds of our core architecture faculty. Second, through the thesis preparation class, regularly scheduled formal juries, and the final thesis review, students get advice, and have their work evaluated by several other faculty members (typically more than 8) and outside experts during the course of the thesis process.

The reform of the thesis process is in response to both an extended faculty deliberation on the M.Arch thesis, and the explicit recommendations of the 2008 external review report, which included the following:

"We would suggest that the faculty consider alternatives to individual theses, which may not be the best educational experience for all students, and the best use of faculty resources. These might include, as examples, a second or terminal comprehensive studio, or joint research projects or research studios where groups of students collaborate with faculty in directed research projects. Another virtue of such moves would be supporting faculty research interests, which now seem to fall by the wayside in the crush of responding to student needs."

We have followed these recommendations, and, now in the third year of staging these reforms, the learning outcomes, and high quality of work are seen positively by a majority of students and faculty, and were positively reviewed during our professional accreditation reviews.

Recent Professional Accreditation Outcomes for the Graduate Curricula

Aspects of the External Report must be compared to the findings from recent professional accreditation reviews at DFALD, which allowed for a more comprehensive of the professional curricula.

DFALD was fortunate in receiving the full six-year term of accreditation in both our professional Master's of Architecture and Landscape Architecture programs in 2013. Our programs were found to meet an overwhelming majority of the performance criteria established by these (coordinated North American) accrediting bodies.

In 2012-13, just before the self-study and external review process, the Professional Master Programs in Architecture and Landscape Architecture were reviewed for accreditation by the Canadian Architectural Certification Board (CACB), and the Canadian Society of Landscape Architects in (CSLA). These accreditations involved preparing detailed reports and hosting multi-day team visits, in which student and faculty work was evaluated in detail, according to more than 35 industry mandated compliance standards and performance criteria. These accrediting reports and visits are the primary way that curricula and learning outcomes in our professional programs are documented and evaluated.

These accreditation processes are very rigorous; for example, the team visit for the professional Master of Architecture program involves having seven different professionals and faculty from other accredited programs review written, graphic and 3-D material representing strong and weak work from every required course in our professional programs.

We understand the self-study and external review process to be different in purpose and nature to professional accreditation process, in that the external reviews organized for the purpose of University of Toronto's Quality Assurance Process (UTQAP) have a broad mandate to look at all aspects of the faculty's performance and plans.

The external report raised a question about the rigor of the programs with regard to grading criteria, and systems of evaluation. These were reviewed as part of our professional accreditations in 2013. Both our M.Arch and MLA programs met the majority of the learning outcomes mandated by the accreditation process. More generally, the combination of the jury process in studio (in which core faculty members and external visitors regularly evaluate student work throughout the term) and joint grading sessions ensures the overall quality of the work. While we do, as required, distribute and collect course evaluations for every course conducted within the Faculty, we are determined to improve systems of evaluation, and student feedback. Our recently established Student Services team is working to determine which metrics can help us best evaluate the success of our ongoing curricular reforms and the realization of our learning outcomes.

We want to stress that the detailed accreditation review found that the faculty had met key performance criteria in the few areas identified as potential problems in the external report. For example, few shortcomings with regard to integration of technology and design were

cited in the MLA accreditation. The M.Arch accreditation identified one deficiency in our capacity to integrate sustainable technologies.

For context, it should be noted that our 4th semester Comprehensive Studio in architecture is one of the only architecture programs (out of eight) in Canada to have passed the CACB comprehensive design criteria in recent accreditation reviews, and has been lauded by our peers as a model of integration. The CACB's accreditation criteria requires unequivocal evidence that students in our M.Arch Comprehensive Studio "produce well-developed architecture projects that include sophisticated structural or envelope systems" and we fully met this standard.

Research and Faculty Development

The external report found that:

"...a critical component of the new vision for DFALD, that requires further conceptualization and strategic development, is the development of a Faculty research strategy. This will support the Faculty's research ambitions, enabling research, advancing it, increasing its profile, supporting research-oriented graduate degrees and ultimately a PhD program, and nurturing the excellent faculty already recruited."

The Daniels Faculty's combination of research and creative practice accomplishments has few rivals among design schools in Canada and is competitive with top-ranked peers in North America. Our recent hires are a testament to our commitment to continuing to renew and expand this aspect of our Faculty's strength.

We agree with the external report's finding that a stronger, shared research strategy at DFALD is needed, and that while our record in research with a humanities orientation is strong, more must be done to ensure that more technologically oriented research at the Faculty can keep pace with global comparators. To this end we have hired five new tenure stream faculty with PhD's in the past 3 years (adding to four existing) to build strength in research and prepare for the PhD program. With, for example, new appointments such as Stephen Verderber, an expert in health, design and cities, we are exploring new areas of research and teaching, and forging relationships with industry and cognate faculties at UofT, including the Dalla Lana School of Public Health. Other new hires, such as Brady Peters and Benjamin Dillenburger, are building research strength in digital, fabrication-based technologies.

We agree that we need to find more ways to support new hires in developing their research agendas. In July 2014, we will be appointing a new Associate Dean, Research. We are also currently searching for a research officer, a staff position the Faculty has never had the benefit of before. Yet, we want to reiterate the report's broader findings on the faculty's extensive and internationally recognized research and creative practice accomplishments. Among the tenure stream landscape faculty: Professors Danahy, Wolff, North, Margolis, and Farhat (that is, 5 out of 6 full-time faculty) have well-established research agendas that have received peer reviewed awards, grant support and have been published, in some cases

extensively. Among the tenure stream Architecture faculty the number and range is also strong: Professors el-Khoury, Kesik, Levit, White, Chaouni, and the recently hired Professor Verderber all have established research agendas that have similarly received extensive peer-reviewed accolades and support and are widely published. Professors Shim, Williamson, and other long-serving adjuncts such as Sampson, have substantial, peer-reviewed records in creative practice. In this combination of research and practice-based design faculty, we have few rivals in Canada, and can compete with top ranked peers in North America.

Our commitment to maintaining and renewing our engagement of high standing practitioners was documented in the Self-Study. There have been six recent hires within the past 2 years of non-tenure stream, but ongoing lecturer or CLTA appointments at DFALD. These new faculty members are very active in practice: Michael Piper (Arch/UD), Adrian Phiffer (Arch/UD), Jonathan Enns (Arch), Matthew Allen, Rodney Hoinkes (LA/UD), and Francesco Martire (LA and Arch).

In addition, we have a whole new generation of sessional teachers, and a vital schedule of visiting design studio instructors drawn from practice teaching in the studios (15 visitors in 2013-14), including the Frank Gehry International Chair, Josemaría de Churtichaga, who will be in residence for all of 2014. In our balance between engaging exemplary practitioner/teachers and nurturing full time scholars, or between having a strong core faculty, and a robust program of visitors, we have few peers in Canada, and place very well among schools of our kind at public universities in North America.

Proposed PhD in Architecture, Landscape and Design Studies

The external report raised concerns about the interdisciplinary approach of the anticipated PhD program (in development, titled PhD in Architecture, Landscape and Design Studies), noting that there was some disagreement among the standing faculty on the direction of the PhD, and suggesting that a more traditional approach aligned with faculty specializations would be more appropriate. The latter is in fact the direction of the PhD program envisioned by a broad-based Faculty committee beginning in 2011.

With a group of potential faculty advisors with expertise in a broad range of subject matter including but not limited to the history of technology, building systems, computation-driven fabrication, and urban sustainability, we anticipate producing PhD research within and between these subject areas. We will mount a unique program that addresses the requirements of a more traditional humanities-based PhD while also fostering research that is more closely aligned with the applied science model. All but one of our faculty with PhD's are trained as architects, and a majority have a scholarly, yet applied orientation to research, and support our proposed approach to the PhD.

Conclusion

The Daniels Faculty has embarked upon a period of transformation that includes:

- A reconceptualization and incorporation of undergraduate programs in Architectural and Visual Studies;*
- Continued innovation in the development and delivery of our graduate professional degree programs;*
- A renewal of our faculty compliment and administrative staff;*
- A planned PhD in Architecture, Landscape and Design Studies;*
- Fostering partnerships through outreach in cognate faculties, partner institutions, the professions, government, industry, and beyond;*
- The development of a new platform to serve our future at One Spadina Crescent.*

This unprecedented transformation at the Faculty is not without its challenges, and we are mindful of how to best manage change as we move forward. We appreciate the opportunity to respond to the observations of the external committee's report and will give priority to improving in the following areas in the next phases of the Faculty's evolution:

1 Year: We will finalize DFALD's Academic Plan to chart future direction and outline our common goals through consultations with faculty, students, and our broader community.

We will institute a Strategic Research Plan that will continue to foster the high caliber of research and creative practice of the Faculty by better supporting new (and existing) initiatives and establish a more robust mentoring system for new faculty members and their work.

We will continue to review our staff and administrative structure to ensure that the needs of our expanding Faculty are well met while cultivating a new generation of leadership within our faculty and staff who will implement the vision outlined by our Academic Plan.

2-3 Years: We will continue to implement and monitor the series of curricular reforms in our professional masters programs first recommended through a faculty wide ad hoc process in 2011, especially those that speak to the integration of technology to the core curriculum, balancing disciplinary and intra-disciplinary design instruction, and making the masters thesis more research intensive.

We will develop, monitor, and implement renewed Bachelor of Arts programs in Architectural Studies and Visual Studies, and take the PhD in Architecture, Landscape and Design Studies, under development, through to approval.

We will continue to develop and implement a broader Undergrad and Grad recruitment strategy to maintain our high quality of applicants, expand our pool of international applicants, and strengthen our ability to attract the top candidates in all of our undergrad and graduate programs.

We will establish a more formalized system of evaluation to monitor our ongoing curricular reforms and the quality and consistency of our learning outcomes and program delivery.

3-5 Years: We will leverage our new home at One Spadina Crescent to increase the visibility of the Faculty, celebrate the work of our faculty and students, and realize our vital role in the city of Toronto and beyond.

Review Summary

Program(s):	Bachelor of Pharmacy, B.Sc.Pharm. Doctor of Pharmacy, Pharm.D. Post-Baccalaureate PharmD Combined B.Sc.Pharm./ Post-Baccalaureate Pharm.D. Pharmaceutical Sciences, M.Sc., Ph.D.
Division/Unit:	Leslie Dan Faculty of Pharmacy (LDFP)
Commissioning Officer:	Provost, University of Toronto
Reviewers (Name, Affiliation):	1. Dr. Bob Blouin, Vaughn and Nancy Bryson, Distinguished Professor and Dean of Pharmacy, UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill 2. Dr. James P. Kehrer, Dean, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta 3. Dr. David H. Sherman, Hans W. Vahlteich Professor of Medicinal Chemistry and Associate Dean for Research and Graduate Education, College of Pharmacy, University of Michigan
Date of review visit:	November 13 – 15, 2013

Previous Review

Date: May 5 and 6, 2008

Summary of Findings and Recommendations:

1. Undergraduate Programs (Bachelor of Pharmacy, B.Sc.Pharm.; Pharmaceutical Chemistry Specialist, B.Sc., Doctor of Pharmacy, Pharm.D.)

The reviewers observed the following strengths:

- Well-planned and executed expansion of the full-time, second-entry B.Sc.Pharm. from 670 students to 904 students
- Proposal for new entry-level is Pharm.D. logical, well-designed and innovative

The reviewers identified the following areas of concern:

- Challenge of reorganizing the curriculum
- Uncertainty of transition to new degree
- Need to not underestimate resources required for new curriculum

The reviewers made the following recommendations:

- Be proactive in preparing to propose the Pharm.D. program
- Consider ways to expand opportunities for undergraduate professional students to engage in research

2. Graduate Programs (Pharmaceutical Sciences, M.Sc., Ph.D.)

The reviewers observed the following strengths:

- Improvements in graduate studies and doubled enrolment in PhD program

3. Faculty/Research

The reviewers observed the following strengths:

- Strong growth in research activities
- Strong recent hires

The reviewers identified the following areas of concern:

- Majority of faculty members seem to embrace an individual PI culture and are focused strongly on federal sources of funding

The reviewers made the following recommendations:

- Pharmacy Practice Division must grow and embrace both the scholarship and teaching missions
- Adopt greater multidisciplinary philosophy to take full advantage for further expansion of research
- Must invest in practice faculty as the curriculum evolves and the Pharm.D. program is implemented; resolve best way to hire Pharm.D. faculty

4. Administration

The reviewers observed the following strengths:

- Excellent senior administrative leadership
- Forward-thinking addition of Continuous Professional Development
- Commendable service and dedication from staff
- Very strong morale

The reviewers identified the following areas of concern:

- Need to consolidate organizational structure, communicate bi-directionally, and engage in planning at all levels

The reviewers made the following recommendations:

- Explore new revenue generating opportunities that are consistent with the Faculty mission
- Engage in faculty development to enhance faculty's teaching and learning facilitation skills

Last OCGS Review(s) 2009

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

- Terms of Reference
- Self-Study
- Towards 2030 Framework
- View from 2012
- Leslie Dan Faculty of Pharmacy Strategic Plan
- Report of the Previous External Review, 2008
- Leslie Dan Faculty of Pharmacy Faculty CVs

Consultation Process:

The reviewers met with the Vice-President and Provost Cheryl Regehr; Vice-Provost Academic Programs, Sioban Nelson; LDFP Interim Dean, Heather Boon, Deans of cognate university faculties; junior and senior faculty members; administrative staff; LDFP undergraduate and graduate students; alumni; LDFP Senior Academic Leadership Team; LDFP Decanal Search Committee; and members of the external community (hospital pharmacy Directors, hospital and community preceptors).

Current Review: Findings & Recommendations

The Faculty has excellent faculty members, students, facilities, and programs. The Faculty provides rigorous professional and graduate training programs, and is critically acknowledged as having the leading research program in pharmaceutical sciences in the country.

1 Undergraduate Program

Bachelor of Pharmacy, B.Sc.Pharm.

Doctor of Pharmacy, Pharm.D.

Combined B.Sc.Pharm./ Post-Baccalaureate Pharm.D.

The reviewers observed the following strengths:

- Objectives
 - Pharm.D. curriculum reflects the state of the discipline, and adheres to Canadian accreditation standards and the 2010 AFPC Outcomes
 - Planned Pharm.D./M.B.A. program will provide students with opportunities to expand expertise in business and management
- Admissions requirements
 - Appropriate to program outcomes and match pharmacy accreditation standards

- Adoption of new curriculum has led faculty to strengthen admissions process, including using the MMI technique to assess students' non-cognitive skills
- Curriculum and program delivery
 - Standard and appropriate structure and length for all programs
 - Commendable structure of new Pharm.D. program, incorporating biomedical and pharmaceutical sciences, excellent elective requirements, and broad and strong options for selectives and electives
 - Students happy with exposure to patient-centred problems and pharmacotherapy content matter early in the curriculum
- Assessment of learning
 - Assessment is appropriate to the learning outcomes
 - Pharm.D. completion rates are excellent (93-97%) and comparable to other pharmacy programs in Canada
- Quality indicators
 - Students happy with curricular changes and faculty responsiveness, including focus on small-group discussions in Pharm.D. program
 - Excellent quality of students admitted to the Pharm.D. program
- Support
 - Positive addition of Faculty Advisor position, mentorship and House programs over the past two years

The reviewers identified the following areas of concern:

- Admissions requirements
 - Admissions decisions favour GPA and PCAT scores
 - Some students have light course loads in their first terms because they have already met prerequisites
- Curriculum and program delivery
 - GPA required for progression is low
 - Maximum time to completion for Pharm.D. is long
 - Challenging rollout of Pharm.D. curriculum with respect to implementation time and funding
 - Certain aspects of the curriculum remain underdeveloped, particularly the experiential portion
 - Challenge of implementing the Discovery stream
- Quality indicators
 - PEBC pass rates are lower than some other Canadian schools
 - Some students expressed concern about internal competition for placements post-graduation
 - Significant decline in the Pharm.D. applicant pool over the past three years, while GPA has remained constant
- Students
 - Students expressed concern about the lack of technology used in instruction
- Faculty resources

- 50% of classes taught by sessional and clinical faculty

The reviewers made the following recommendations:

- Admissions requirements
 - Consider whether emphasis on GPA and PCAT scores are sufficient admissions criteria to ensure ongoing student quality
 - Assess appropriateness of anatomy and physiology as prerequisites
- Curriculum and program delivery
 - Continue to address challenges associated with implementation of Pharm.D. curriculum
 - Consider raising the minimum GPA progression requirement
 - Develop IT infrastructure to support the student learning experience
 - Shorten allowable time to completion for Pharm.D. program
- Program development
 - Continue to pursue combined program options
- Quality indicators
 - In working to improve PEBC scores, avoid “teaching to the test” if introducing capstone exams
- Enrolment
 - Increase recruitment efforts for the Pharm.D. program
- Student funding
 - Explore the need for student financial aid in the Pharm.D. program
- Faculty resources
 - Provide additional leadership for experiential education
 - Continue to increase the number of full-time faculty delivering the curriculum

2 Graduate Program

Pharmaceutical Sciences, M.Sc., Ph.D.

The reviewers observed the following strengths:

- Overall quality
 - Many areas of strength, including opportunities for funding and the quality of mentorship
- Curriculum and program delivery
 - Strong recent additions to the curriculum including increased emphasis on verbal presentation skills and internship placements
 - Robust service learning, experimental learning, and professional student research programs
 - Ample international opportunities for students
- Assessment of learning
 - Methods are comprehensive and appropriate
- Quality indicators
 - Average incoming GPA indicates high quality

- Students
 - Extremely impressive, articulate, and motivated students
 - Excellent diversity of student professional and personal development opportunities
 - Student surveys are very positive

The reviewers identified the following areas of concern:

- Admissions requirements
 - 50% of qualified applicants enrol
 - Students must secure a supervisor prior to enrolment
- Curriculum and program delivery
 - Students take no or few courses within the pharmaceutical sciences department
 - Very few students engaging in service learning, experimental learning, and professional student research opportunities
 - Extent of faculty and student involvement in international opportunities is unclear
- Assessment of learning
 - Lack of systematic program evaluation process; unclear how assessment data are being used to improve curriculum and student performance
- Quality indicators
 - Decreasing number of traditional jobs available to graduates; concern about career support reflected in student survey
 - Concerns about mean of time-to-completion and its variability
- Students
 - Tend to identify with a laboratory mentors or other researchers in lieu of the Faculty of Pharmacy or a particular graduate program
- Student funding
 - Concern that modest base-level graduate support may result in increased time-to-degree

The reviewers made the following recommendations:

- Admissions requirements
 - Consider moving to a model of first year rotations, to give both students and faculty members a chance to determine mutual fit and to allow junior faculty to better recruit students to their labs
- Curriculum and program delivery
 - Develop an effective plan to incorporate technology-assisted learning initiatives
 - Consider adopting a more focused approach to international partnerships
 - Expand professional development opportunities
- Assessment of learning
 - Continue to support the efforts of the Program Evaluation and Accreditation committee in developing systematic assessment methods
- Quality indicators
 - Encourage entrepreneurship as students plan future careers
 - Make efforts to decrease the mean time-to-completion

- Students
 - Create a stronger affiliation with the Faculty leading to enhanced alumni relationships and advancement

3 Faculty/Research

The reviewers observed the following strengths:

- Overall quality
 - Leading research program in pharmaceutical sciences in Canada
 - Considerable research success; faculty should continue to make such achievements into the future
- Research
 - Diverse areas of research, with many opportunities available to undergraduate and graduate students
 - Positive academic research partnerships, particularly in the areas of drug and marker discovery, nanomedicine and drug delivery, and drug metabolism and disposition
 - Integrally involved in three cross-disciplinary research centres:
 - Center for Pharmaceutical Oncology is in advanced planning stages and has the potential to foster significant innovation and intellectual property for the Faculty
 - Well-funded, multi-disciplinary Centre for Evaluation of Health Technologies
 - Appropriate new focus to create Centre for Pharmacy Management and Innovation, rather than fill an endowed chair in this area
- Faculty
 - Outstanding complement with many noteworthy achievements
 - Faculty development efforts are laudable, well-led, and solid
 - Successful recent efforts in recruiting more pharmacists to conduct research
 - Recent expansion of the faculty complement
 - Positive addition of clinical scientists, who have done well in peer reviewed research and are making great progress as scholars, educators, and clinicians

The reviewers identified the following areas of concern:

- Faculty
 - Raised questions regarding the Pharmacy Practice Division, including its complement and its involvement in graduate education
 - Lack of recent retirements has resulted in limited number of faculty at the rank of assistant professor
 - Pharmacy Management Chair position has been vacant since its creation in 2006
 - Concern about the number of faculty on sabbatical and the impact on the new curriculum

The reviewers made the following recommendations:

- Research

- Associate Dean for Research needs to manage research pilot projects, provide grant bridge funding, and have an annual budget to encourage new research initiatives
- Associate Dean for Research needs full authority for management of research space, in collaboration with division chairs, with sign-off from Dean
- Faculty
 - Evaluate the Division of Pharmacy Practice
 - Explore retirement incentive plans through the University
 - Hire more tenure-stream faculty through converting funds currently used for part-time faculty
 - Fill the Pharmacy Management Chair position or use the funds for another tenure-track position
 - Re-examine the mechanism by which sabbatical requests are evaluated and approved
 - Create a critical mass in research areas, adopting a more strategic approach to hiring and developing collaborative research centres
 - Provide enhanced recognition of the success of clinical scientists, and fill approved clinical scientist positions in a timely manner

4 Administration

The reviewers observed the following strengths:

- Relationships
 - Fortunate position as a part of a strong and vibrant university with rich healthcare and pharmaceutical industry connections
 - Effective communication of the Faculty's quality of education, research, and engagement
 - Broad, strong relationships to other Faculties including many positive research partnerships
 - Commendable progress in relationships with HUPEC partners
 - Very good relationships with professional pharmacy organizations and the regulatory body in Ontario
 - Strong advisory board for advancement with an exceptional list of prospects
 - Solid international initiatives and partnerships with over 20 countries
 - Positive continuing professional development activities providing revenue for the Faculty
 - Office of Advancement is well-positioned to expand its operations
- Organizational and financial structure (including governance)
 - Beautiful multipurpose facility with excellent space and research equipment
- Planning / Vision
 - Well-thought out strategic plan with appropriate priorities and goals; consistent with the University's mission
 - Excellent leadership of interim dean through period of significant transition

The reviewers identified the following areas of concern:

- Relationships
 - Relationships with University affiliated teaching hospitals being tested by new experiential education portion of Pharm.D. curriculum
 - Research funding from the government is expected to become increasingly more competitive
- Organizational and financial structure
 - Issues with administrative structure have not been addressed since previous review
 - Concern about ratio of support to academic staff
 - High number of interim leadership appointments contributing to lowered morale
 - Budget challenges related to experiential education and the building
 - Large number of standing committees pose an administrative burden
 - Faculty and collaborative partners expressed concern about adequacy of facilities moving forward
- Planning / Vision
 - Challenges ahead relating to the economics of pharmacy, specifically generic drug pricing
 - Context of rapid change within pharmacy profession and academic discipline
 - Lack of common purpose and cohesion with the Faculty
- Department/unit/programs relative to the best in Canada/North America and internationally
 - Few international comparators provided by Faculty, and QS rankings are not ideal indicators

The reviewers made the following recommendations:

- Relationships (collaboration)
 - Encourage Dean to establish external advisory board, separate from advancement activities, to raise the profile of the Faculty locally and nationally
 - Be more proactive in public-private partnerships
 - Continue to develop relationships and improve communication with HUPEC partners to support the new experiential education curriculum
- Organizational and financial structure
 - Evaluate and modify current personnel, leadership, and infrastructure systems:
 - Resolve situation with interim dean and numerous interim leadership appointments, and engage senior faculty in determining the best leadership structure, including the position of Vice Dean and combining the roles of Associate Dean for Academic and Associate Dean for Professional Practice
 - Create discrete job responsibilities for members of the senior leadership team and communicate those widely
 - Analyze the needs of administrative and support staff and conduct an overall staff assessment
 - Take steps to provide the Faculty with more sophisticated information technology resources, including smart classrooms and personnel
 - Conduct a space audit and consider a new approach to space management

- Implement a more transparent business model
- Make further efforts to give the Divisions more autonomy and authority
- Re-evaluate the current committee structure
- Planning / Vision
 - Engage all faculty in the implementation of the strategic plan
 - Link the strategic plan to the budget and the development plan
 - Prioritize and document progress in all areas of the strategic plan
 - Address future budget concerns, including resources to support the experiential education and funds to support the building and its mortgage

ADMINISTRATIVE RESPONSE – Appended



UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

OFFICE OF THE DEAN

March 10, 2014

Professor Sioban Nelson
Vice-Provost, Academic Programs
University of Toronto
Simcoe Hall
Toronto, ON M5S 1A1

Dear Professor Nelson,

Re: Administrative response to the external review report for the Leslie Dan Faculty of Pharmacy.

Thank you for providing us with a summary of the external review report and for allowing us to respond to its findings. We appreciate this opportunity to reflect on our accomplishments, opportunities and future direction at the Faculty.

We are delighted that the report was positive and that the reviewers commended us on the quality of our faculty and students and on having a well thought out Academic Plan which they described as a "fine roadmap for excellence". We take pride in the quality of our people and in their contributions to our accomplishments in teaching and research at the Faculty.

Our Academic Plan, articulated through the Faculty's **Strategy 2016 – Tomorrow · Today** document, has been instrumental in shaping our direction and achievements over the past three years and it remains the framework for our continued work over the next two years. It is reassuring to see that some of the areas noted by the reviewers are in fact goals that we ourselves have identified in our Academic Plan; particularly in the areas of communications, organization and management. We look forward to incorporating the review recommendations into our ongoing academic planning at the Faculty.

Below is our administrative response to the recommendations and comments raised by the reviewers as outlined in your letter of January 28, 2014.

1. Academic Plan and Progress toward Academic Priorities

- *The reviewers discussed the importance of developing a sense of cohesion and commonality, engaging all faculty in the execution of the Faculty's plan, purpose and evaluating progress.*

Fully engaged faculty and staff are paramount in our endeavors to create an inclusive culture at the Faculty. We specifically made a commitment in our strategic plan to "build the collaborative relationships needed to move the plan forward".

Short-term action

Over the next six months, we will re-establish our strategic planning working groups and revive our progress tracking document. Our senior leadership group will initiate mechanisms to engage faculty and staff within their units to be more actively involved in executing the Faculty's plan and making recommendations on changes in direction. Starting this spring, and running through to early fall, we will schedule small-group mini retreats with faculty and staff that are focused on specific issues (e.g., graduate education; divisional goals; experiential education). All members of the senior leadership group will attend each other's mini retreats so that they become more informed of the initiatives underway in other areas of the Faculty. Our senior leadership group will be instrumental in promoting the positive tone needed to create a more cohesive and collaborative culture at the Faculty.

Medium-term action

In late fall 2014, we will hold a Faculty-wide retreat to showcase the outcomes of the mini retreats and to re-examine the course for the future. We expect a new Dean will be in place at that time and that this will be an ideal springboard for moving forward at the Faculty. The retreat will serve as a first step in developing a transition from our existing strategic plan into the new planning cycle which coincides with the appointment of a new Dean. Further, we will hold faculty and staff meetings more frequently and continue to engage and encourage people beyond the senior leadership group to present at these gatherings. We will review the effectiveness of our strategic planning monitoring document and make recommendations on how to best evaluate progress and engagement of all faculty and staff.

Long-term action

The Faculty will engage in a new strategic planning cycle that coincides with the appointment of a new Dean. With that, we expect to develop a more robust planning and evaluation mechanism to measure progress on our strategic initiatives and ensure we are able to seize new opportunities as they arise.

- *They recommended sustained attention to the structure and function of the Practice Division, including the management of relationships with clinical sites and engagement in Experiential Education.*

Short and medium-term actions

The structure and function of the Pharmacy Practice Division is a priority at the Faculty and we will be establishing a series of stakeholder meetings in the next 6-8 months for the purpose of conducting a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. Our intention is to review all the divisions at the Faculty in order to determine their purpose as well as to explore how they may bring greater visibility to their respective constituents. We expect that the SWOT analysis will be instrumental in helping us shape the ideal structure and function not only of the Pharmacy Practice Division but also our other divisions. We expect to have any revisions to our divisional structure in place within the next 18 months.

Managing the relationships with our clinical sites and engagement in Experiential Education remains a critical component to the success of our new curriculum. We have put in place a number of the initiatives identified in our strategic plan, the most notable of which is the establishment of the Hospital University Pharmacy Education Committee (HUPEC) in 2012. The HUPEC serves an advisory board to enhance the experiential component of the curriculum and foster communication and collaboration with our Toronto Academic Health Sciences Network

(TAHSN) institutions. We will continue to use the expertise and input of this committee to guide our PharmD program and maximize our relationships with clinical sites.

We will also assemble an advisory committee similar to HUPEC that will represent community practitioners. This advisory group will guide us in enhancing our experiential endeavors in community practice sites.

Long-term action

Through our ongoing collaboration with HUPEC and the new community site advisory group, we will transition from a just-in-time model of managing our clinical experiential rotations to one that runs in tandem with the needs of our clinical sites. We will have a mechanism in place that will benchmark the contributions our students make to the institution in which they are placed.

2. Curriculum and Program Delivery – Undergraduate programs

- *The reviewers encouraged re-examination of the PharmD admissions requirements, progression and curriculum in the interest of increased rigour and improved PEBC performance.*

The Pharmacy Examining Board of Canada (PEBC) is the national certification body for the pharmacy profession in Canada and is required for a practice license in Ontario. The PEBC examination focuses specifically on assessing students' readiness to practice and thus does not evaluate all components of our curriculum. Of the seven Canadian schools rated, the ranking for U of T has been decreasing relative to the other schools in terms of performance on this exam over the last four years. While differences in pass rates amongst the schools is minimal and the overall pass rate for our students remains very high, we would like our students to perform better in these exams.

Short-term action

Within the next six months, the Faculty will hold a retreat of the Admission Subcommittee of the Committee for Entry-to-Practice Professional Degree Programs (CEPPDP) to review and evaluate the admissions criteria, program pre-requisites, and the maximum time allowed to graduate. This committee will also conduct an environmental scan of the criteria of other faculties at U of T and of other Canadian pharmacy schools to help inform our process.

Medium-term action

At the time of this Administrative Response, we have not had any students graduating from our new PharmD curriculum. We will monitor our PEBC rankings that reflect the results of our first cohort graduating from the new curriculum to determine if there is any change. Our new curriculum is designed to provide enhanced clinical education and skills which should improve performance on the PEBC.

With respect to the admissions process, within the next 1-2 years the CEPPDP Committee will make recommendations to further align admissions, progression, and other relevant policies with the new curriculum.

Long-term action

The recommended changes, once approved by Faculty Council will be implemented in the next 3-5 years.

- *They recommended attention to the experiential component of the programs.*

Short-term action

In addition to the initiatives noted in section number 1 of this document, we are conducting a review of the current E*Value software system that is used for the matching and administration of rotations. A request for proposals is currently in progress to explore other software options that may deliver a more robust selection of user-friendly supports. In the meantime, we will maximize the capability of our current system so as not compromise the learning experience of our students.

In our efforts to build capacity and quality of our preceptor pool, we have developed a Preceptor Training Program; this is a collaboration between our Office of Experiential Education and our Continuous Professional Development Office. Training commenced in Summer 2013 in preparation for the first group of students going on rotation in May 2014. We will continue to provide regular training workshops in the short- and medium-term timeframe and will be providing additional training at a more advanced level.

We will also be working closely with our OEE administrative staff to provide them with professional development opportunities available through the Organizational Development office at U of T. The OEE staff is our frontline of communication with our students and preceptors and we value the benefits of making accessible to them any supports that assist them in this highly focused customer service role.

Section number 6 of this document outlines our initiatives with respect to conducting an organizational review. In this review, we expect to identify a structure that will maximize the efforts of the OEE. We also intend to review where the academic oversight of the OEE will reside.

Medium and long-term actions

We intend to implement strategies that foster a culture of customer service. Procurement of a new software program will make it easier for faculty and staff to manage the smooth and efficient operation of the OEE. We will put in place the training support necessary to take full advantage of the capabilities of the new software. Further, after our administrative and academic leadership review recommendations are implemented (see section 6), we will be able to put in place mechanisms to evaluate the effectiveness of the Office.

3. Curriculum and Program Delivery – Graduate programs

- *The reviewers suggested the development of a strategy to deepen the graduate recruitment pool, and to address the issue of integration of advanced standing students into the graduate program cohort.*

Goals in the Faculty strategic plan include the development of a marketing and communications plan, as well as a recruitment plan. Also, a Faculty-wide Recruitment and Admissions Committee was established within our new governance structure and will serve to support recruitment initiatives. We expect these endeavors, which will also include graduate student targeted strategies, will inform the internal and external community of the work being done at the Faculty.

Short-term action

The interim Associate Dean for Graduate Education met with a subgroup of the Faculty-wide Recruitment and Admissions Committee to discuss our current recruitment efforts and admissions data. This committee is working on strategies to enhance recruitment in all programs.

The interim Associate Dean for Graduate Education, along with the Assistant Dean Strategic Initiatives and the Manager of Marketing, will develop a short-term strategy to identify departmental offerings and promote our programs to potential graduate students.

In our efforts to promote graduate studies to our current students, we are identifying a portfolio of graduate courses that we intend to make available as electives to our PharmD students. We will also continue to run our summer research program as a means of attracting students to pursue graduate studies at the Faculty.

Medium-term action

We will establish a working group and commence development of a recruitment plan for the graduate department. It will include identification of three top target groups and our approach for recruiting students domestically and internationally. We will also engage an external advisor to assist us in the development of an identity package that will be used in our promotional endeavors.

We will also be implementing the first joint degree program (PharmD-MBA) in the planned Discovery Stream component of our PharmD curriculum which will provide interested students with opportunities for advanced standing in the MBA program. In the medium-term we will be exploring options for additional joint degree options.

Long-term action

We will develop an annual publication designed to promote current graduate students and alumni. It will become our key communications vehicle to showcase the graduate department and will also serve as a marketing vehicle for our philanthropic efforts through our Office of Advancement.

We expect to introduce additional joint degree program options for our PharmD students within the next five years. This may include advanced standing in the advanced clinical training programs we are planning (see section 4).

- *They recommended enhancing the sense of community for graduate students.*

Short-term action

After having received the external review report, the interim Dean and interim Associate Dean for Graduate Education organized a town hall meeting (February 14, 2014) to speak with graduate students and graduate faculty regarding the findings outlined in the report. In this meeting, students brought forward several ideas to enhance the sense of community within the department. It is our intent to continue having regular town hall meetings with our graduate students and faculty. We will also be holding a Graduate Department faculty retreat in fall 2014 which will focus on strategies to create a sense of community. This retreat will take place in advance of the Faculty-wide retreat.

Medium-term action

We will integrate the findings and results from the fall 2014 graduate retreat and develop an implementation plan. At the February 14th town hall, the students suggested the development of additional graduate courses, workshops and/or short certificate-based programs focused on topics such as business development and entrepreneurship that would potentially enhance their opportunity to secure employment in areas outside of academia. We expect to have specific topics identified for the first wave of new offerings within the next 18 months. The students also suggested creating at least one mandatory course that all graduate students (within all divisions of the department) are required to take. We anticipate being able to integrate this suggestion by September 2015.

Long-term action

We will incorporate new graduate courses, workshops and/or certificate short programs based on the outcome of our medium-term action planning.

- *They suggested the Faculty monitor time to completion and develop strategies to improve the competitiveness and success of students.*

The mean time to completion for students in the master's program is 2 years and 5.7 years for students in the doctoral program. The minimum time to completion for doctoral students is 3.7 years and the maximum time for a few doctoral students is 9 years.

Short-term action

The interim Associate Dean for Graduate Education has begun to identify and contact all students that are in years 6-9 of their doctoral studies so that we may better understand the issues that prevent them from progressing more quickly through the program. We are looking into the software that is being developed by the School of Graduate Studies and how it may assist in tracking students and their progress in their graduate programs. Once available, we intend to integrate this software into our program.

Medium and long-term actions

During the town hall meeting the graduate students were receptive to the idea of a series of workshops and seminars on topics such as business development, entrepreneurship, and drug development to enhance their competitiveness beyond the completion of their degrees. We will further discuss these ideas and outline a plan to move forward during the next town hall meeting and graduate retreat. These workshops will then be formalized and integrated into a menu of specialty topics that we intend will serve a multi-purpose; for example as an element of our recruitment strategy.

4. Program development

- *The reviewers recommended the Faculty work with hospital partners to develop advanced clinical training programs.*

A number of opportunities exist for developing advanced clinical training programs. One, which is already in development, is a program that will bridge the gap between the phased out Bachelor of Science in Pharmacy (BScPhm) degree and the new entry-to-practice Doctor of Pharmacy (PharmD) degree. An expanded scope of practice in the profession of Pharmacy along with the PharmD degree as an entry-to-practice degree in the Province has created significant demand for a bridging program. Another emerging opportunity to advance clinical

training is the creation of a Clinical Master's program. Finally, significant prospects exist for the expansion of our residency and fellowship programs as well as the opportunity for pharmacy specialty certification similar to the U.S. model.

Short-term action

We will complete the "major modifications" documentation and approval process for the transitioning of our Post-Baccalaureate PharmD program to a bridging program for those who wish to advance their BScPhm degree to a PharmD degree. We intend for this program to commence taking students in January 2015.

Medium-term action

In fall 2014, we will commence working with our partners to identify opportunities for advanced clinical training programs and the form that they may take (for example Clinical Master's, residencies, fellowships, continuing education, etc.). We will take the lead by hosting a meeting of key national stakeholders. Input and buy-in from organizations such as the Canadian Society of Hospital Pharmacists (CSHP), the Canadian Hospital Pharmacy Residency Board (CHPRB), the Canadian College of Clinical Pharmacy (CCCP) and others will be invaluable in pursuing this initiative.

In January 2015, we will enroll our first cohort into the PharmD bridging program. We will also commence working on a draft proposal and work through the approval process for the creation of an advanced clinical training program (currently expected to be a Clinical Master's) based on the input of the stakeholder meeting.

Long-term action

We will monitor and assess the demand of our PharmD bridging program. As the pool of BScPhm graduates wishing to upgrade diminishes, we will plan for the phase out the bridging program. Upon acceptance of our advanced clinical training program proposal, we expect to be in a position to roll out this new program in 2017 or 2018. Also, we expect to have a number of initiatives underway as a result of our consultations with our hospital partners.

5. Research

- *Reviewers recommended that faculty resources and energy be focused on consolidating strengths, ensuring a critical mass of faculty in core areas, and aligning graduate teaching with these research strengths.*

We recognize that to obtain substantial and continued financial support for research and to establish strong research capabilities to address the major challenges in the health sciences will require that we create critical masses of faculty in key areas. This is the driving force for the establishment of several research centres at the Faculty over the next five years that include: i) the Centre for Pharmacy Management, Research and Innovation (CPMRI), ii) the Centre for Pharmaceutical Oncology (CPO), iii) the Centre for Collaborative Drug Research (CCDR), iv) the Centre for Evaluation of Technological Innovation (CETI), and v) the Centre for Integrative Medicine (CIM). Through these research centres, we expect to form clusters of faculty who will have different expertise and resources but share a common interest in solving a broad challenge in the health sciences. These centres will create opportunities for cross-training of undergraduate and graduate students and postdoctoral fellows between the various disciplines represented in the centres. We further envision the creation of new graduate courses by faculty within the centres that would support a program of focused graduate studies aligned with the

mission of the centres. The Faculty is committed to establishing these centres and has commenced major fundraising in the Boundless Campaign. In addition, the Faculty is building capacity in the clinical research area by recruiting clinician-scientists in collaboration with the TAHSN hospitals.

Short-term action

The CCDR and CETI have already been established. Planning and fundraising for the CPMRI and the CPO are underway and will continue in 2014. Interviews are taking place to recruit directors for the CPMRI and the CIM. Fundraising is taking place to create an endowed Chair to lead the CPO. A CFI/ORF application is being submitted to acquire infrastructure for the CPO.

Medium-term action

By 2015, we expect to have established the CPO and the CPMRI. An endowed Chair will be recruited to lead the CPO. Faculty members will be invited to join these two centres. We expect to have obtained CFI/ORF funding for infrastructure for the CPO.

Long-term action

By 2016, graduate courses will be developed that are aligned with the centres. Fundraising will continue within the Boundless Campaign to meet the targets for the centres and other initiatives.

- *They advised that the Associate Dean Research be given delegated authority to make decisions concerning research space and responsibility for the allocation of seeding grants.*

The Faculty is currently conducting a space audit to confirm the allocation of space within the building. Once the space audit is completed, the Associate Dean, Research will be delegated the authority to establish a process to allocate research space going forward in accordance with faculty needs and in consultation with the Dean. This process may include the establishment of a "space committee" to review requests for research space. Annual audits of space utilization at the Faculty will be conducted to assure continued efficient space utilization.

The Faculty is conducting a review of the overall budget including indirect costs to determine the availability of funds to support "seeding grants". In addition, one of the initiatives in the Faculty's Boundless Campaign is the establishment of a Dean's Fund to seed innovative research projects to allow them to be competitive for more substantial external grant funding. A process will be established to receive applications for these grants once or twice per year and to prioritize projects given the limited funds available. In addition, the two research Centres that are planned and for which funds are being raised in the Boundless Campaign [the CPO and CPMRI] include seeding funding for pilot research projects.

Short-term action

A review of the overall budget at the Faculty to determine the feasibility of seeding funding will be completed in 2014. The audit of space utilization will be completed in late fall 2014.

Medium-term action

By 2015, we plan to establish a seeding funding budget for research. A process to assign research space will be established by the Associate Dean, Research in consultation with the Dean.

Long-term action

Additional funds for seeding grants will be raised as part of the Boundless Campaign to establish a Dean's Fund as well as the research centres (CPO and CPMRI).

6. Resources and Planning

- *The reviewers recommended that attention be given to developing effective organizational and management structures. Specifically they recommended an administrative review of staffing and the academic leadership team's structure and roles, clarifying the role of the Divisions, and a space audit.*

One of the goals in our strategic plan is to "develop an organizational structure that aligns with our strategic plan and enables us to achieve our goals". The plan states that we will be conducting an organizational review and a space audit.

Short-term action

Both audits are currently underway and we expect an audit on the organizational review within the next three months and the space audit within the next six months. We will also be starting work on an academic leadership review in late fall 2014.

Medium-term action

Our organizational structure is the underpinning of our ability to meet strategic goals at the Faculty. We expect to implement the recommendations of the organizational and space audit reviews over the next 18 months. We will also review the outcome of the leadership review which we expect will be complete by late spring 2015.

Long-term action

We expect to implement the recommendations of the leadership review. We will also commence working on succession planning at the Faculty. This will include annual audits and forecasting for both administrative and academic units.

- *They recommended the Faculty focus on the development of IT infrastructure in support of technology supported learning – both in the building and at clinical sites.*

Aligning information technology to support the operational, marketing, research, teaching and learning needs at the Faculty was identified as a major goal in our strategic plan and is in sync with the recommendations of the reviewers. We have made significant strides with implementing learning technologies into our part-time PharmD program and in our CPD programs however we have been slow to incorporate new technology into our other program areas.

Short-term action

We will consult colleagues at similar sized faculties at U of T regarding their infrastructure and staffing. This will assist us in framing our administrative leadership needs. We anticipate hiring an individual to lead our IT initiatives in the next year.

Medium-term action

We will conduct an audit of our current IT systems and services and identify if they are appropriately supported and managed. We will develop a multi-year IT plan. an IT multi-year plan.

Long-term action

We will implement our multi-year IT plan and monitor opportunities for continuous improvements that contribute to an enhanced teaching and learning environment.

- *They recommended a review of the complement plan with respect to tenure stream recruitment priorities, as well as part-time faculty for the Practice Division.*

As our external reviewers identified, our faculty members are one of the Faculty's greatest strengths. The multiple changes in academic programs (ongoing and planned) as well as our ongoing plans to identify and support areas of research strength provide an opportunity to review and reflect on our current complement plan, particularly in the Pharmacy Practice Division.

Short-term action

The ongoing financial review and planning will include a focus on academic planning. By identifying upcoming retirements, unfilled salary lines and needs of new and proposed academic programs we will develop a comprehensive plan to supplement our current academic complement with strategic hires in key areas. Decisions about tenure stream and lecturer hires in the Pharmacy Practice Division will be informed by a retreat planned within the next six months. We expect to begin recruiting for several high priority positions before the end of 2014.

The appointment of six clinician scientist and two clinician educators over the last three years has been very favourably received by the reviewers and by the pharmacy profession. We plan to evaluate how this initiative may inform next steps in enhancing our faculty complement.

Medium and long-term actions

The academic complement plan will be reviewed annually to ensure it continues to meet the ongoing needs of the Faculty and to take into account new retirements. Additional academic hires will be made, based on our needs. Our planning will also be influenced by the outcome of the SWOT analysis to determine the structure and function of our divisions.

Thank you for the opportunity to provide a response to the external review report. We look forward to all our faculty and staff being involved in shaping our future direction at the Faculty.

Sincerely,



Heather Boon
Professor and Interim Dean

cc.

Jane E. Harrison, Director, Academic Programs and Policy
Justine Garrett, Coordinator, Academic Programs and Planning
Maria Bystrin, Assistant Dean, Strategic Initiatives and Continuous Professional Development,
Leslie Dan Faculty of Pharmacy

Review Summary

Program(s):	Mechanical Engineering, B.A.Sc. Industrial Engineering, B.A.Sc. Mechanical and Industrial Engineering, M.A.Sc., M.Eng., Ph.D. Joint M.Eng. in Design and Manufacturing, M.Eng.D.M.
Division/Unit:	Department of Mechanical and Industrial Engineering
Commissioning Officer:	Dean, Faculty of Applied Science & Engineering
Reviewers (Name, Affiliation):	1. Dr. Nadine Aubry, Dean, College of Engineering, Northeastern University 2. Dr. Mark Daskin, Chair and Clyde W. Johnson Professor, Department of Industrial and Operations Engineering, College of Engineering, University of Michigan 3. Dr. Jerzy Maciej Floryan, Professor and Chair, Department of Mechanical and Materials Engineering, Faculty of Engineering, University of Western Ontario 4. Dr. Glenn Heppler, Professor and former Chair, Department of Systems Design Engineering, Faculty of Engineering, University of Waterloo 5. Dr. Kon-Well Wang, Stephen P. Timoshenko Collegiate Professor of Mechanical Engineering, Tim Manganello/BorgWarner Department Chair, Mechanical Engineering, Department of Mechanical Engineering, College of Engineering, University of Michigan
Date of review visit:	November 4-5, 2013

Previous Review

Date: 2004-05

Summary of Findings and Recommendations:

1. Undergraduate Programs

Mechanical Engineering, B.A.Sc., Industrial Engineering, B.A.Sc.

The reviewers observed the following strengths:

- MIE program provides a competitive, rigorous undergraduate experience

The reviewers identified the following areas of concern:

- Instructional support given by teaching assistants appears to be inadequate
- Technical electives should be increased, and only those actually taught should be listed in the calendar
- Student expressed a strong desire for more availability of “hands-on” courses
- Students expressed a strong need for more study space in or near the department

The reviewers made the following recommendations:

- Address TA issue within the overall scope of resource allocation, proliferation of low enrolment courses, and general curricular planning and support. Processes for TA selection, training, and “certification” should be strengthened.
- Create stronger and more extensive research opportunities for undergraduates
- Create a common curriculum through year two

2. Graduate Programs: Doctor of Philosophy (PhD), Master of Applied Science (MASc), Master of Engineering (MEng), ADMI MEng—partner in Industrial Masters in Advanced Manufacturing and Design Institute (ADMI)

The reviewers observed the following strengths:

- Excellent graduate program that produces outstanding researchers and engineers that are highly regarded throughout North America and the world

The reviewers identified the following areas of concern:

- Average time to degree from bachelor’s degree to Ph.D. is very long in comparison with leading research universities in the United States
- Graduate support minimum seems low

The reviewers made the following recommendations:

- Evaluate ways to shorting the times to completion

3. Faculty/Research

(Not discussed in review report)

4. Administration

The reviewers observed the following strengths:

- Considerable thought has been given to the strategic plan
- New External Advisory Board (EAB) is positive

The reviewers identified the following areas of concern:

- Strategic plan has too many research initiatives

The reviewers made the following recommendations:

- Within the strategic plan, articulate specific goals and methods for achieving those goals
- Increase EAB to 12 members, seek non-alumni participation, elect board chair, and involve EAB in departmental activities

Last OCGS Review(s) 2007-08

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

Self-study; Terms of Reference; UTQAP; CVs of core department faculty; FASE Academic Plan, 2011-2016; FASE Annual Report, 2013: Performance Indicators; FASE Year in Review 2012-2013: Where Innovation Thrives; 2013-2014 undergraduate and graduate calendars

Consultation Process:

The reviewers met with Dean Cristina Amon; Vice-Dean, Graduate Studies Markus Bussmann; MIE Chair Jean Zu; Associate Chairs of Undergraduate Studies, Graduate Studies, and Research; Chair of MIE Curriculum Committee; NSERC Design Chair and Director of University of Toronto Institute for Multi-Disciplinary Design & Innovation (UT-IMDI); Director of Institute for Sustainable Energy (ISE); members of MIE Research Committee; graduate and undergraduate student representatives; junior and senior faculty; chairs of cognate departments internal and external to FASE; administrative and technical staff representatives; and members of the Advisory Committee on the Appointment of MIE Chair.

Current Review: Findings & Recommendations

- In publications and citation records, programs rank among the top 15-20 IE and ME programs worldwide and near the top of comparable Canadian programs.

1 Undergraduate Program

Mechanical Engineering, B.A.Sc.

Industrial Engineering, B.A.Sc.

The reviewers observed the following strengths:

- Overall quality
 - High quality undergraduate students
- Quality indicators
 - Many students plan to attend graduate school
- Support
 - Departmental leadership meets with student leaders every other week and follows up with actions from these meetings
 - Excellent collaboration with George Brown College to provide machining training to MIE students

The reviewers identified the following areas of concern:

- Curriculum and program delivery
 - Students expressed concern about the quality of teaching and advising from the Communications Instructors
 - Some students would like more hands-on learning opportunities
- Support
 - Levels of TA support (10,000 hours per year) seem low
- Physical resources
 - Department needs more space for student teams and projects, as well as informal gathering space

The reviewers made the following recommendations:

- Curriculum and program delivery
 - Include hands-on team projects in core courses in addition to those offered through the senior capstone design course
 - Provide additional course requirements and advising to third and fourth year IE students in each of the three areas of IE: operations research, information systems, and human factors
- Support
 - Monitor whether TA staffing levels are adequate

2 Graduate Program

Mechanical and Industrial Engineering, M.A.Sc., M.Eng., Ph.D.

Joint M.Eng. in Design and Manufacturing, M.Eng.D.M.

The reviewers observed the following strengths:

- Quality indicators
 - Graduate recruitment efforts are commendable and are ahead of those of Canadian peers

The reviewers identified the following areas of concern:

- Quality indicators
 - In the graduate survey, 20-40 percent of students expressed some dissatisfaction or significant dissatisfaction with various aspects of the program, such as the quality and quantity of graduate courses, though no students expressed concern in person
 - Times to completion for the M.A.Sc. (over two years) and Ph.D. (five years) are too long
- Students
 - Faculty expressed concern about the varying levels of quality among the M.Eng. students

- Support
 - M.Eng. students require better advising, though the department recognizes this problem and has identified two advisors for the program: one for ME students and one for IE students

The reviewers made the following recommendations:

- Curriculum and program delivery
 - Better distinguish between research courses and M.Eng. courses
- Quality indicators
 - Examine the disparity between survey results and students' current perceptions of the program
 - Seek ways of reducing the time to completion for M.A.Sc. and Ph.D. students
- Students
 - Take steps to improve the quality of M.Eng. students, including being more selective in admissions decisions
 - Engage experienced M.Eng. students in educating other students and faculty about key issues in professional engineering environments

3 Faculty/Research

The reviewers observed the following strengths:

- Research
 - Faculty (and students) have a very strong publication and citation record
 - Unique, expansive research infrastructure that is well-supported by the department
 - Impressive 100% success rate in NSERC Discovery Grant proposal submission, due in part to a commendable departmental review process for such applications
- Faculty
 - Outstanding, well-structured new faculty mentoring program that is focused on teaching in both undergraduate and graduate programs
 - Faculty complement and recent hires are very strong, which bodes well for the future of the department

The reviewers identified the following areas of concern:

- Overall quality
 - In teaching, research, and faculty hiring, department needs to maintain a balance between core methodologies and applications to ensure the long-term health of the department

The reviewers made the following recommendations:

(None indicated)

4 Administration

The reviewers observed the following strengths:

- Relationships
 - Morale is excellent among faculty, staff, and students
 - Staff is collegial, dedicated to providing service to students, and well respected by faculty
 - Very good communication channels between administration, faculty, staff, and students
 - External relations staff are very good, and provide communications, recruitment, development, and events services for the department
- Organizational and financial structure
 - High level of staff support and very good staff-to-faculty ratio
 - New budget model is well-appreciated by faculty and staff
 - Special funds are allocated to establishing collegiality at all levels of the department
- Planning / Vision
 - Long-term goal of slightly reducing the number of undergraduate students and increasing the M.Eng. students
- Department/unit/programs relative to the best in Canada/North America and internationally
 - Among the top 15-20 IE and ME programs worldwide and near the top of comparable Canadian programs

The reviewers identified the following areas of concern:

- Relationships
 - Continue to expand both the Industry and Alumni Advisory Boards from 6 to 12-15 members, with special effort made to include more women
- Organizational and financial structure
 - Department has critical needs for more short-term space before the new Centre for Engineering Innovation & Entrepreneurship (CEIE) building comes online in 2016, preventing the department from taking on any space-intensive new opportunities
- Planning / Vision
 - As the M.Eng. program expands, continue to find ways to ensure high quality students and engage them in the department
 - Take care not to focus too much on short-term financial incentives set by the Provincial government in planning for the future

The reviewers made the following recommendations:

- Department/unit/programs relative to the best in Canada/North America and internationally
 - To improve departmental ranking and reputation, track and promote student success
 - Encourage undergraduates to pursue graduate students outside of Toronto and Canada to continue to increase the department's profile

ADMINISTRATIVE RESPONSE – Appended



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Cristina Amon, Dean

February 13, 2014

Professor Sioban Nelson
Vice-Provost, Academic Programs
University of Toronto
27 King's College Circle

Dear Professor Nelson

I write in response to your letter of January 17, 2014 regarding the Fall 2013 external review of the Department of Mechanical and Industrial Engineering and its undergraduate and graduate programs: Mechanical Engineering, BAsC; Industrial Engineering, BAsC; Mechanical and Industrial Engineering, MAsC, MEng, PhD; and Joint MEng in Design and Manufacturing, MEngDM.

The external review process is an important exercise that affords us the opportunity to take stock of the state of our academic units and of the Faculty as a whole. We were pleased with the positive nature of the reviewers' report, particularly with regard to the high national and international standing of MIE's faculty and programs, the very strong publication and citation record of faculty and students, and the excellent climate and morale within the Department, as was noted.

The following is in response to the issues raised by the reviewers in their report. For ease of reading, a summary of each area identified in the review (in bold) is followed by the administrative response.

Curriculum and Program Delivery

The reviewers praised many positive features of the undergraduate programs. They did, however, highlight several areas for curricular improvement. These include the provision of additional academic advising to third and fourth year IE students and expanding hands-on learning opportunities in addition to the senior capstone design course.

Administrative Response

It has been a tradition for decades that MIE provides academic information sessions to undergraduate students entering their third and fourth years. In these sessions, faculty members from eight disciplinary areas (five in Mechanical Engineering and three in Industrial Engineering) introduce courses and career options in their respective areas. To enhance academic advising and supplement the information sessions, MIE has recently introduced Courses and Option Selection Handbooks. Current students have

been heavily involved in the development of the handbooks, which are available electronically and in a print form in the academic year 2014-15. The handbooks will be updated annually.

Regarding hands-on learning opportunities, in 2010 the Department introduced the senior capstone design course into the fourth year curricula, resulting in a significant expansion of hands-on learning. Since then, the Department has continued to enrich the capstone design projects by adding cross-cultural joint capstone projects and multi-disciplinary capstone projects.

MIE has also introduced "learning-by-doing" courses in recent years. Specifically, the Department offers many such courses in the third and the fourth year IE program such as MIE345 (Case Studies in Ergonomics), MIE350 (Design and Analysis of Information Systems), MIE360 (System Modelling and Simulation) and MIE367 (Cases in Operations Research).

The IE program is in high demand and enrollment has been increasing steadily. To keep up with the demand, MIE has hired an outstanding Assistant Professor, who will join the Department in January 2015.

To further improve its curriculum, the Department will:

Immediate Action (6 months)

- Enhance academic advising by increasing the number of academic information sessions, so that the eight disciplinary areas can be addressed in more depth

Short-term Action (1-2 years)

- Focus mainly on maturing the capstone courses
- Conduct a review of the existing third and fourth year courses, via the Department's curriculum committee, to further enhance hands-on learning

Long-term Action (3-5 years)

- Make every effort to increase the number of faculty members in the IE program through fundraising for endowed chairs and NSERC Industrial Research Chairs
- Through the curriculum committee, work with new faculty members to create courses with hands-on learning experience

The reviewers raised a few issues with the MEng program, such as variability in student quality, the need for enhanced student advising, and the need to distinguish between graduate courses that target MEng students and those that target research students.

Administrative Response

MIE has seen a significant increase in MEng student enrolment over the past few years, due to major efforts in recruitment and admission: while there were few international MEng students in the past, 32 international students are currently enrolled, about 16% of the total MEng student population. While a good deal of progress has been made to broaden and improve the quality of the MEng program to meet the demands of increased enrollment, we acknowledge the reviewers' suggestion that more can be done.

The Department has recently established an annual graduate exit survey and interview process, which includes MEng students. The first exit survey and interviews were conducted in November and December of 2013, and MEng students provided useful feedback.

In January 2014, MIE formed a task force to recommend improvements that can be made to the MEng program and related services. Membership in the task force includes five faculty members, one administrative staff member, and two MEng students. The task force will review the first exit survey results and consult with peers and other units within UofT to determine best practices.

To distinguish between graduate courses that target MEng students and those that target research students, the Department has introduced several courses of an applied nature in subjects that would appeal to MEng students. Most of these courses are taught by experienced engineers with many years of practical experience. These courses have provided many more options for MEng students in course selection and have been well received. The Department has also introduced more evening courses to accommodate MEng students who work full- or part-time.

In another effort to strengthen the MEng program, the Department has, over the past few years, introduced five MEng emphases in emerging and practical areas, with broad appeal. In the summer of 2013, MIE hired an administrative staff member to focus on recruitment and support graduate students.

To continue to strengthen the MEng program, the Department will:

Immediate Action (6 months)

- Hold annual town hall meetings for MEng students
- Receive the report of the task force, and consult widely within MIE on the recommendations contained therein
- Increase access to space for MEng students, including the three computer labs and design shop

Short-term Action (1-2 years)

- Begin implementing the task force's recommendations
- Implement the MEng advising program
- Introduce the MEng internship program
- Increase partnerships with industry by introducing an internship program for MEng students
- Continue to improve courses that will appeal to MEng students, and introduce more MEng emphases
- Implement international "3+2" and "3+1+1" program to increase the enrollment and quality of the MEng students. In these program modalities, international students complete three years of the BAsC degree in their home institution and come to UofT MIE for the fourth year, and then remain for the MEng degree

Long-term Action (3-5 years)

- Build a strong physical infrastructure for MEng students and a robust MEng program
- Consider the establishment of an integrated BAsC/MEng program

The reviewers also raised the issue of time-to-completion for PhD students.

Administrative Response

MIE acknowledges that time-to-completion for PhD students has been an issue. While most students graduate within four years, which is the period for which students are provided guaranteed funding by the University, it is the few special cases with a 7-8 year completion time that raises the average. These longer completion times are caused by absences due to personal reasons, such as maternity leaves and illnesses, and because some students find jobs before graduation.

Ways to reduce PhD time-to-completion to four years have been discussed at several academic staff retreats. Two years ago, the Department implemented mandatory annual PhD Progress Reports to ensure that students make good progress through their program. The Department also proposes the following actions:

Immediate Action (6 months)

- Implement a system to remind students on a regular basis of their time to completion goals

Short-term Action (1-2 years)

- Be stricter in the qualifying exams to ensure that non-qualified candidates are identified at this early stage
- Discuss this further with academic staff in order to raise awareness, and to seek their input on possible solutions
- Continue to encourage the fast-track program from MASc to PhD

Long-term Action (3-5 years)

- Continue to address any issues discovered that influence negatively (extends) time-to-completion.

Relationships

The reviewers recommended the further expansion of the Industry and Alumni Advisory Boards, and further recommended increasing the numbers of women on both.

Administrative Response

MIE started the fundraising-based Advisory Board and industrial partnership-based Industry Board in 2009-2010. The Department has been working toward expanding the boards; the process has been slow due to the time it takes to find quality individuals who not only have the capacity and connections required in these roles, but are passionate about MIE. Very recently, MIE recruited one new member for each of the two boards.

An additional challenge in recruiting women to these roles is that potential board members who are well established tend to be more senior, and would have graduated from a time when the classes had very few female students. To continue to make progress in this area, the Department will:

Immediate Action (6 months)

- Cultivate potential board members who are currently on the radar
- Communicate with both boards the external reviewers' recommendations on expanding the boards and recruiting more female members, and encourage both boards to actively identify candidates
- Anne Sado, President of George Brown College, has been an active alumna supporting MIE. She will be approached for possible recruitment to the Advisory Board

Short-term Action (1-2 years)

- Recruit 2-3 additional members for each board
- Continue to look for potential board members through alumni and industry relationship building
- Identify female candidates among industry, as well as from alumni
- Consider recruiting more junior females to both boards

Long-term Action (3-5 years)

- Expand both boards to 10-15 members, with an increased number of women on each

Research

The reviewers raised questions about the appropriate balance between core methodologies and applied research in the department. Please comment on this.

Administrative Response

Since July 2009, MIE has hired seven academic staff in the research areas of energy, design, mechatronics, bioengineering, nanotechnologies, and operations research, all strong in the core fundamentals of their disciplines and specific novel application areas. As discussed at the academic staff retreat in December 2013, MIE faculty members widely agree that the Department is well balanced between core methodologies and applied research. The reviewers' comments are a useful reminder that the Department should continue in this direction.

Resources and Planning

Despite the anticipated new building scheduled for 2016, the reviewers expressed concern over the current need for student space.

Administrative Response

In 2011, the MIE space committee conducted a thorough audit on research space. The audit has resulted in more streamlined use of the research space and the reallocation of approximately 500 NASMs to the Department. This space has been used by new hires and has provided additional space for expanded research activities. In addition, the undergraduate teaching labs and machine shop usage was streamlined to create a state-of-the-art computer teaching lab and design fabrication studio for undergraduate students. The Department currently has approximately 100 NASMs in reserve, which is tight. While the Department does not foresee new hires in the next two years, with the exception of the aforementioned Assistant Professor to join IE, the pressure for space will mainly come from the expansion of existing research labs and the space needs of undergraduate and MEng students. To ameliorate this, the Department will:

Immediate Action (6 months)

- Make some of the space for undergraduate students available also to MEng students, such as the three computer labs and design studio
- Apply for funding from the Student Levy Fund and Dean's Strategic Fund to relocate and renovate the design studio to meet students' needs
- Add eight stand-alone computer stations in one of the existing computer labs for printing purpose only. This will alleviate some of the demand for computer labs because much of the use is for printing

Short-term Action (1-2 years)

- Relocate and renovate the design studio to make it partitionable for more effective use by different student groups
- Continue to promote shared research lab space

- Utilize other available space in the Faculty for student group activities, such as the new atrium in the Lassonde Mining Building and the soon-to-be enhanced student spaces in Bahen

Long-term Action (3-5 years)

- Move some of the Department's Institutes into the new Centre for Engineering Innovation & Entrepreneurship (CEIE), which will free up space in MIE buildings for future needs and growth

Thank you very much for the opportunity to respond to the report of the external review team. Their comments and concerns have helped sharpen the vision and future priorities for the Department of Mechanical and Industrial Engineering.

Sincerely



Cristina Amon

cc Professor Jean Zu, Chair, Department of Mechanical and Industrial Engineering
Jane E. Harrison, Director, Academic Programs and Policy
Justine Garrett, Coordinator, Academic Programs and Planning
Caroline Ziegler, FASE Governance and Programs Officer

Review Summary

Program(s):	Computer Engineering, B.A.Sc. Electrical Engineering, B.A.Sc. Electrical and Computer Engineering, M.Eng., M.A.Sc., Ph.D.
Division/Unit:	Edward S. Rogers Sr. Department of Electrical and Computer Engineering
Commissioning Officer:	Dean, Faculty of Applied Science and Engineering
Reviewers (Name, Affiliation):	<ol style="list-style-type: none"> 1. Dr. Andreas C. Cangellaris, M.E. Van Valkenburg Professor and Head of Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign 2. Dr. John P. Hayes, Claude E. Shannon Professor of Engineering Science, Department of Electrical Engineering and Computer Science, University of Michigan 3. Dr. André Ivanov, Professor and Head of Department of Electrical and Computer Engineering, University of British Columbia 4. Dr. Ruby B. Lee, Forrest G. Hamrick Professor in Engineering, Professor of Electrical Engineering, Department of Electrical Engineering, Princeton University
Date of review visit:	May 22-23, 2013

Previous Review

Date: November 17-18, 2005

Summary of Findings and Recommendations:

1. Undergraduate Programs: B.A.Sc. in Electrical Engineering; B.A.Sc. in Computer Engineering

The reviewers observed the following strengths:

- Students enthusiastic about mentoring and research

The reviewers identified the following areas of concern:

- TA monitoring is inadequate; issues with cheating

The reviewers made the following recommendations:

- Try to replicate the success of the Engineering Science program in recruiting top students

- Increase flexibility via a common first year program

2. Graduate Programs: Electrical and Computer Engineering, M.Eng., M.A.Sc., Ph.D.

The reviewers identified the following areas of concern:

- Very short time allowed for graduate students and professors to determine whether they have made a good match; this results in a conservative recruitment strategy

The reviewers made the following recommendations:

- Consider other models of mentorship and recruitment

3. Faculty/Research

The reviewers observed the following strengths:

- Teaching and research activities are of the highest level
- Impressive new faculty hires
- Chair and vice chair's mentoring of junior faculty is valuable

The reviewers identified the following areas of concern:

- Little improvements made to labs since the previous review; labs overcrowded and out of date
- Second level mentoring by senior colleagues is inconsistent
- Percentage of female professors is low

The reviewers made the following recommendations:

- Institute a more intensive mentoring program for junior faculty by senior faculty
- Increase percentage of female professors

4. Administration

The reviewers observed the following strengths:

- Morale is high

The reviewers made the following recommendations:

- Department could be more flexible in its responses to challenges, especially limited funding and professorial resources, and increased undergraduate enrolment

Last OCGS Review(s) 2005

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

Self-Study; Terms of Reference; 2005 External Review Report; FASE Annual Report 2012: Performance Indicators; FASE Academic Plan, 2011 to 2016; UTQAP; CVs of core ECE Faculty; graduate and undergraduate calendars

Consultation Process:

The Reviewers met with Dean Cristina Amon; Vice-Dean, Undergraduate Studies Susan McCahan; Vice-Dean, Graduate Studies Chris Damaren; ECE Chair Farid Najm; ECE Associate Chairs, Undergraduate Studies, Graduate Studies, and Research; junior and senior faculty members; undergraduate and graduate student representatives; administrative and technical

staff representatives; chairs of cognate departments within and external to FASE; and members of the Advisory Committee on the Appointment of ECE Chair.

Current Review: Findings & Recommendations

1 Undergraduate Program

Computer Engineering, B.A.Sc.

Electrical Engineering, B.A.Sc.

[N.B.: Reviewers did not distinguish between the two undergraduate programs.]

The reviewers observed the following strengths:

- Overall quality
 - High quality teaching
 - Students appreciate that faculty are recognized experts in their fields
 - Program objectives, admissions process, and degree-level expectations were favorably evaluated by Canadian Engineering Accreditation Board (CEAB) in October 2012
- Enrolment
 - Enrolment numbers “healthy and growing”
 - Domestic/international balance of 75/25—close to Department’s goal
- Support
 - Students pleased with online course selection and advising centre
- Physical resources
 - Exemplary practice of giving students access to funds for laboratory equipment and refurbishment; students and Lab Manager highly satisfied with system
 - Labs are well-equipped and maintained

The reviewers identified the following areas of concern:

- Curriculum and program delivery
 - Some students find that there are too many required second-year courses
 - Students perceive “a big jump” between the first and second year and feel inadequately prepared
 - Some had minor reservations about the quality of teaching assistants
 - Students would like clearer responses to their suggestions for course improvements
- Enrolment
 - Faculty have mixed perspectives about the best way to handle large-enrolment courses:
 - Some faculty expressed desire to have fewer sections to reduce workload
 - Others felt that enrolments should be reduced to improve faculty-student ratio and quality of teaching

The reviewers made the following recommendations:

- Curriculum and program delivery

- Explore students concerns about the second year, reviewing course pre-requisites and scheduling
- Enrolment
 - To reduce teaching load, raise enrolment limits to offer fewer sections; augment larger sections with newer or more creative engagement methodologies

2 Graduate Program

Electrical and Computer Engineering, M.Eng., M.A.Sc., Ph.D.

The reviewers observed the following strengths:

- Overall quality
 - Students satisfied with overall quality of instruction
 - Students satisfied with their courses, assignments, and workload as teaching assistants
 - Students praised high level of faculty expertise

The reviewers identified the following areas of concern:

- Curriculum and program delivery
 - Students concerned about time to degree and meeting requirements for graduation
 - Review meetings with supervisory committees are not being enforced, leading to students' "uncertainty and anxiety"
- Student funding
 - Students concerned about financial support
 - Significant variation in how students are supported and advised after their four-year period of guaranteed support ends
 - Students expressed financial concerns about the high cost of living in Toronto
- Faculty resources
 - Some graduate students have mixed feelings about the early pairing of students and faculty research advisors
 - Some junior faculty feel that it's hard to compete with senior faculty for top students

The reviewers made the following recommendations:

- Curriculum and program delivery
 - Strengthen the mechanisms for tracking Ph.D. student progress; work toward reducing overall time to completion for graduate degrees
 - Provide more mentorship to students about measures of scholarship, impact, etc., and the different standards among the subspecialties
 - Provide better visibility for Ph.D. students' research progress through a research committee/annual review of graduate students, so that students can affirm their research plans and receive equitable supervision
- Student funding
 - Revisit the level of student funding to ensure equity

- Faculty resources
 - Conduct a review of the way in which graduate students are paired with faculty research advisors

3 Faculty/Research

The reviewers observed the following strengths:

- Overall quality
 - High-quality research
- Research
 - Department is a leader in achieving the Faculty's goal of high-impact research, as evidenced by percent of Faculty research expenditures attributed to ECE faculty
 - Substantial research funding from industry
 - Dean's strategic interdisciplinary research initiatives have made a positive impact on Department
- Appropriateness of activities for the undergraduate and graduate students in the programs
 - Undergraduates are very appreciative of their summer research opportunities
 - Some graduate students very happy with research supervision and opportunities for interdisciplinary research
- Faculty
 - Excellent faculty in terms of individual and collective technical expertise, both in ECE and in interdisciplinary areas—notably the biomedical area

The reviewers identified the following areas of concern:

- Research
 - Short-term horizon of current research discourages longer-term, high-risk endeavours
 - Faculty expressed concerns regarding barriers to interdisciplinary research
 - Faculty would like stronger U of T involvement in national research policy and decision-making groups
- Appropriateness of activities for the undergraduate and graduate students in the programs
 - Graduate students may be forced to shift to research projects with faculty funding, even though projects are not always in line with the students' theses
- Faculty
 - Faculty expressed differing views about the balance of teaching, research, and service, especially with respect to future hires
- Complement
 - Faculty concerned that workload impedes the growth of research; differences of opinion between faculty and departmental leadership regarding teaching relief and buyouts

The reviewers made the following recommendations:

- Research
 - Consider directing a portion of Departmental funds to support strategic, higher-risk, longer-term research initiatives
 - Assume a stronger leadership role in growing and diversifying interdisciplinary research across the University
- Complement
 - Raise faculty's awareness of the workload policy
 - Explore ways to increase capacity (or reduce overall workload) by strategically using available funds, such as the overhead from industry-sponsored research returned to the Department

4 Administration

The reviewers observed the following strengths:

- Morale of faculty, students and staff
 - High engagement and morale of staff and leadership
- Scope and nature of relationships with cognate Faculties, academic departments and units
 - Department proactively fosters and establishes cross-departmental research initiatives
- Staff
 - High quality, competent, and committed staff
- Management and leadership
 - Outstanding, with "strong leadership, clear strategic vision, and dedication to service"
- Department/unit/programs relative to the best in Canada/North America and internationally
 - "Outstanding" quality; "truly world-class"
 - "First-class" students
 - "In an excellent position to continue as a world leader in its field"
 - Academic programs are recognized internationally

The reviewers identified the following areas of concern:

(None)

The reviewers made the following recommendations:

- Development/fundraising initiatives
 - Increase engagement with alumni to benefit current programs
 - Expand the Department's industrial relationships to benefit current programs

ADMINISTRATIVE RESPONSE – Appended



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Cristina Amon, Dean

February 4, 2014

Professor Sioban Nelson
Vice-Provost, Academic Programs
University of Toronto
27 King's College Circle

Dear Professor Nelson

I write in response to your letter of January 20, 2014 regarding the Spring 2013 external review of The Edward S. Rogers Sr. Department of Electrical and Computer Engineering (ECE) and its undergraduate (Electrical Engineering and Computer Engineering B.A.Sc.) and graduate (Electrical and Computer Engineering M.A.Sc., M.Eng., and Ph.D.) programs. The external review process is a valuable exercise that affords us the opportunity to take stock of the state of our academic units and of the Faculty as a whole.

We were pleased with the positive nature of the reviewers' report, particularly with regard to the scope and impact of the faculty's research, and the excellence of our technical expertise. We were also pleased to note that the reviewers remarked on the high quality of the students in ECE and that the Department is in an excellent position to continue as a world leader in its field.

The following is in response to the issues raised by the reviewers in their report. For ease of reading, a summary of each area identified in the review (in bold) is followed by the administrative response.

RESEARCH

The reviewers report diverse opinions concerning the appropriate balance between teaching and research workload and varying practices with respect to teaching relief.

The balance between teaching and research, and the concern that teaching workload is so high that it impedes growth of research, are issues that have come up in previous departmental internal meetings, in the course of developing previous strategic plans. Tenure-stream faculty are expected to teach three half-courses per year, which is on par with many of our peer institutions. The first thing to point out is that ECE continues to support faculty members by providing teaching assistants (TAs) for any undergraduate courses that require them.

Secondly, in the ECE Workload Policy developed in 2011-12, there are clear provisions for how classroom teaching workload may be reduced in cases of high research intensity. All ECE faculty members are reminded of this policy in January of every year, and requests for variance from the nominal workload arrangement are invited for submission to the Chair's office. In comparison with our US peer institutions, it is perhaps more difficult to obtain teaching reduction due to increased research intensity – the bar in ECE is higher at this time. This is intentional and for good reason, because we need to gradually transition from a pre-2011 system where such reduction was available only in very limited cases, to a future system in which such reduction is commonplace and subscribed to by most ECE faculty. In the years since the Workload Policy was put in place, a small fraction of ECE faculty members have availed themselves of this option (4 out of 73 in 2012-13, and 5 out of 78 in 2013-14). To be able to lower the bar for access to this option of teaching reduction, the department needs to either increase the faculty complement, which is not reasonable given the already large size of ECE, or reduce the number of course sections offered annually, a more practical goal that will take a few years to achieve.

Short-term goals (within six months):

- The Department's internal Advisory Committee will consider the overall goal of reducing the number of course sections offered annually, and will develop detailed implementation plans for achieving the desired goals in the medium to long term, described below.

Medium-term goals (1-2 years):

- The Department will reduce the number of graduate courses offered annually. To achieve this, the Department's Graduate Matters Committee (GMC) will review the ECE graduate curriculum to identify courses that may be eliminated because they have low student interest. The GMC will also consider whether certain specialized or low-enrolment courses should only be offered every other year. The impact on accreditation will be examined to ensure our program remains viable.
- The Department will reduce the number of undergraduate courses offered annually. To achieve this, the Department's Curriculum Matters Committee (CMC) will review the ECE undergraduate curriculum to identify courses that may be eliminated because of low student enrolment.

Long-term goals (3-5 years):

- To reduce the number of course sections, the Department will work towards reducing undergraduate enrolment. To achieve this, the Department will continue its efforts to improve its financial position through a ramp-up of the Masters of Engineering program (a professional master's degree), increased research funding opportunities, and most importantly, outreach to alumni in collaboration with our Advancement office.

The reviewers raise the issue of barriers to interdisciplinary research and longer-term, high-risk research endeavours.

There are many issues wrapped up in this comment. For one thing, there has been an intensified tendency in the recent past for funding agencies to emphasize research that is more applied or closer to commercialization, and this has made it harder for faculty members to fund their longer-term, high-risk basic research. The Department has been advocating NSERC to try to influence the research policy, with limited success.

Secondly, the Department welcomes and encourages interdisciplinary research. Indeed, one of the first initiatives of the ECE Chair in 2009 was to reach out to the Mechanical and Industrial Engineering (MIE) Department to jointly seek the Dean's support for the creation of a new EDU:C, the now established Faculty-wide Institute of Robotics and Mechatronics (IRM). The Department also participates in and supports another Faculty-wide EDU:C, the Identity, Privacy and Security Institute (IPSI). The success of such efforts depends on the initiative and capacity of our faculty members to take leadership roles in these initiatives, which is impacted by their workload. Thus, workload-related obstacles to research in general, addressed above, can also be important obstacles to interdisciplinary research.

Finally, a natural barrier to interdisciplinary collaboration is the reality that academics tend to work with a small peer group of researchers on very specialized topics. Over the years, they become increasingly more connected with their disciplinary colleagues across the world than with their interdisciplinary colleagues on campus. The ECE Department will take a multi-faceted approach to address this issue:

Short-term goals (within six months):

- The Department will, through the office of the Associate Chair for Research, reach out to other departments and Faculties to develop interdisciplinary workshops on topics of mutual interest, where high-impact interdisciplinary research can be pursued.

Medium-term goals (1-2 years):

- The Department will renew its advocacy efforts with NSERC and other funding agencies to urge them to maintain a stronger focus on basic research and especially on interdisciplinary research.
- The Department will review its policies, like workload or PTR, to consider how to better empower faculty members who are interested in leading large interdisciplinary initiatives.

Long-term goals (3-5 years):

- The Department will work with the Faculty Advancement team develop the capacity to directly support high-impact interdisciplinary research from the Department's own budget.
- The Department will work to create an environment that fosters the emergence of interdisciplinary research collaborations by looking for ways to "throw people together" in common activities, such as increasing inter-departmental or inter-divisional teaching and by having faculty members serve on Ph.D. committees in other departments or Faculties.

GRADUATE STUDENTS

The reviewers note that graduate students are concerned that thesis deadlines and timelines for review committee meetings are not being enforced, impacting rates of progress towards the Ph.D.

While graduate students and their supervisors must take some responsibility for submitting the expected reports and materials by the stated deadlines, the Department has been working since February 2012 on a more proactive approach for monitoring compliance with deadlines to ensure adequate progress of graduate students towards their Ph.D. degree goals. By January 2013, we achieved consensus around a plan for the ECE graduate office to track such progress, including:

1. The development of a Ph.D. Progress Tracking System as an online resource for students to submit annual progress reports, and to help the graduate office identify any problems relating to supervision. The system will allow students to submit their reports without requiring action, or consent, of their research supervisors.
2. Students who do not submit their reports on time will be given a two-month grace period to submit after the original deadline, otherwise they will lose their academic standing and their graduate stipend will be stopped.
3. If a student's supervisory committee finds the report satisfactory, the graduate office will grant approval without the committee meeting in person. If the research supervisor requests a physical meeting, one will be scheduled. The implementation of this system has been further defined throughout 2013, and the software has been under development with the target of having a prototype for testing in the graduate office in January 2014.

Short-term goals (within six months):

- The Department will test and finalize the Ph.D. Progress Tracking System, with a view to deploying and testing it in the spring and summer of 2014.

The reviewers reflected students' concerns about their financial burdens and variations in funding levels.

The students' comments regarding variations in the funding levels relate to what happens after the University's guaranteed funding commitment has expired. The expectation in ECE is that faculty members will take on the full cost of supporting their students after the expiry of the University's funding commitment. The Department offers all incoming graduate students a stipend that is at least \$15,000, plus tuition and fees for a limited number of years consistent with the University's funding commitment. Faculty members have the option of supporting their students at a higher level, and many do.

More generally, we acknowledge that the cost of living in Toronto has been increasing over the years, and that this is reflected in the students' financial burden. It is true that the minimum stipend level is barely enough to live on in Toronto, and that students receiving only the minimum, with no teaching assistantship (TA) stipend, may have to depend on funds from alternate sources to make ends meet. The ECE Department has been discussing this issue over the last few months. While we recognize our responsibility to support our graduate students, there is also the counter-position that graduate education is not a source of employment but an opportunity for training with academic scholars. Furthermore, in many cases, the research funding for the discipline has not been expanding; indeed it has been shrinking in some cases. While our efforts for improving the Department's financial position (via initiatives like the Masters of Engineering and our outreach to alumni) will ultimately help us provide more central resources to address the above issues, we will:

Short-term goals (within six months):

- The Department will continue to study the issue of the financial burden on students by collecting data and discussing the issue with other departments in the Faculty.
- The Department will review the funding situation after the expiry of the University funding commitment, and will collect data and explore ways of ensuring financial assistance until completion of the degrees.

Medium-term goals (1-2 years):

- The Department will work to find a balance among our faculty members between the two opposing views expressed above, of responsibility for our students' well-being and the recognition that graduate study is a training program rather than a source of employment.

- The Department will discuss and develop guidelines relating to how students are to be financially supported after the expiry of the University's funding commitment. These guidelines will be announced and explained to all new faculty members and graduate students.

The reviewers raise a number of issues with respect to student advising in the graduate program.

This comment also relates to student advising after the expiry of the University's funding commitment. The expectation in the ECE Department is that faculty members continue to fully advise their students after the expiry of this commitment. The Department takes this seriously and is in fact not aware of any lack of proper advising of graduate students. Nevertheless, the Department commits to the following plan:

Short-term goals (within six months):

- The Department will review this situation by surveying graduate students and discussing it with faculty members. Corrective action will be taken, if required, via the ECE graduate studies office.

CURRICULUM AND PROGRAM DELIVERY

The reviewers report the perception of undergraduate students that there is a "big jump" between the first and second year and that there are too many required second-year courses.

The ECE curriculum is not easy. There is so much to cover in four years, and this was further exacerbated by the elimination of Grade 13 in the Ontario high school system a few years ago. The transition from high school to university itself is challenging and the design of university curricula must therefore strike a balance between the need to cover enough technical material with the need to maintain a healthy life-study balance for our students. Yet students must, at some point, deal with the transition to university, and this must be done either in first or second year. For various reasons, not least of which is to avoid giving students too fast a ramp-up upon first entry to university, our first-year curriculum has been softened somewhat by the inclusion of introductory courses that allow students to get a glimpse of the various engineering disciplines and to acclimatize them to university life. The net result is that, unfortunately, second year is when students start to take more intense engineering courses, and that is where they experience the sharp ramp-up to university life. Nevertheless, the Department commits to the following:

Short-term goals (within six months):

- The Department will develop strategies for better communications to students about the upcoming challenges in their second year. Counseling and support resources will also be made available to students as they embark on their second year to help reduce the sharp transition from the more general first year to their first disciplinary year of studies.

Medium-term goals (1-2 years):

- The Department will review the second-year curriculum to identify areas where student workload may be reduced. Specifically, the software course in second year has often been the subject of student concerns, and while previous reviews have failed to discover ways around the high workload in this course, the Department will take a fresh look at this course and its impact on students' workload, with the hope that new solutions will be unearthed.

As requested, attached is the CEAB report from October 2012, as the external reviewers reference the accrediting agency's assessment of key programmatic areas.

Thank you very much for the opportunity to respond to the report of the external review team. Their comments and concerns have helped sharpen the vision and future priorities for The Edward S. Rogers Sr. Department of Electrical & Computer Engineering.

Sincerely



Cristina Amon
Dean

cc: J.E. Harrison, Director, Academic Programs and Policy
J. Garrett, Coordinator, Academic Programs and Planning
F. Najm, Chair, The Edward S. Rogers Sr. Dept. of Electrical & Computer Engineering
C. Ziegler, Governance & Programs Officer, Faculty of Applied Science & Engineering

Review Summary

Program(s):	Geology, B.Sc., Hons.: Specialist Geophysics, B.Sc., Hons.: Specialist Geoscience, B.Sc., Hons.: Major, Minor Environmental Geosciences, B.Sc., Hons.: Specialist, Major Geology, M.Sc., Ph.D.
Division/Unit:	Department of Earth Sciences (Undergraduate and Tri-campus Graduate Program)
Commissioning Officer:	Dean, Faculty of Arts & Science
Reviewers (Name, Affiliation):	1. Dr. David Eaton, Professor of Geophysics, Department of Geoscience, University of Calgary 2. Dr. Lee Kump, Professor of Geosciences, Department of Geosciences, Pennsylvania State University 3. Dr. Roberta Rudnick, Distinguished Professor and Chair, Department of Geology, University of Maryland
Date of review visit:	February 7-8, 2013

Previous Review

Date: 2005 (as the Department of Geology)

Summary of Findings and Recommendations:

1. Undergraduate Programs: B.Sc., Geology – Specialist, Major, Minor; Geology and Chemistry – Specialist; Geology and Physics – Specialist; Environmental Geosciences – Specialist, Major

The reviewers identified the following areas of concern:

- Declining undergraduate enrolments
- The traditional, conservative nature of courses

The reviewers made the following recommendations:

- Conduct a curricular review

2. Graduate Programs: Geology M.A., M.A.Sc., PhD; collaborative programs in Environmental Studies and in Geology and Physics

The reviewers observed the following strengths:

- Graduate students generally supportive of their educational experience

The reviewers identified the following areas of concern:

- Graduate students are concerned with lack of cohesion and communication in

department

The reviewers made the following recommendations:

- Re-evaluate the formal graduate teaching program to offer fewer courses with broader appeal

3. Faculty/Research

The reviewers observed the following strengths:

- Active faculty with strong research programs
- High quality new appointments

The reviewers identified the following areas of concern:

- Modest number of collaborative research projects
- Lack of a regular faculty member committed to the Geochronology Lab

The reviewers made the following recommendations:

- Form an external committee to provide advice on the future of Geochronology at UofT

4. Administration

The reviewers observed the following strengths:

- Positive relationships with Geography, Civil and Chemical Engineering, UTM and UTSC
- Exceptional array of analytical facilities and strong, well-funded technical staff

The reviewers identified the following areas of concern:

- Fragmentation of the earth sciences in different departments

The reviewers made the following recommendations:

- Reorganize the components/units of the earth sciences into a new department

Last OCGS Review(s) 2004/05

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

Terms of Reference; Self-Study; Faculty CVs; Site Visit Itinerary; Faculty of Arts and Science External Review Report (2013); University of Toronto Academic Appointments – Overview; and Faculty of Arts and Science Organizational Chart

Consultation Process:

The reviewers met with the Dean; the Vice Dean, Graduate Education & Program Reviews; the Department Chair, the Chairs/Directors of cognate university departments; junior and senior faculty members; administrative staff; and undergraduate and graduate students.

Current Review: Findings & Recommendations

1 Undergraduate Program

Geology, B.Sc., Hons.: Specialist

Geophysics, B.Sc., Hons.: Specialist

Geoscience, B.Sc., Hons.: Major, Minor

Environmental Geosciences, B.Sc., Hons.: Specialist, Major

The reviewers observed the following strengths:

- Objectives
 - High academic standards
 - Specific, meaningful learning outcomes
- Curriculum and program delivery
 - Programs provide a well-rounded education in Earth Sciences, building upon well-established, traditional areas of Geoscience
 - Strong emphasis on experiential learning and evidence of innovative pedagogies
 - Students gain sound preparation for professional registration in Geoscience
 - Strong support for writing in the curriculum
 - Variety of capstone experiences is a positive feature
- Assessment of learning
 - Assessment methods are appropriate
 - Faculty of Arts & Science competencies are mapped to Department's curricula
- Quality indicators
 - High student satisfaction with the program, the accessibility of faculty, advising, opportunities for undertaking research, the ability to connect with alumni and industry, and post-graduation employment opportunities
- Enrolment
 - Increasing number of students in the past five years
- Student funding
 - Awards and scholarships established through endowment funds are signs of "vibrant programs" and are comparable to other top Earth Science departments in Canada
- Support
 - The recently established undergraduate student help center

The reviewers identified the following areas of concern:

- Curriculum and program delivery
 - The "relatively light" (two courses per year) departmental teaching load (compared to the norm of three courses per year at other Canadian Earth Science programs) may be contributing to the limited number of upper-level course offerings

The reviewers made the following recommendations:

- Curriculum and program delivery
 - Reinstate the senior thesis for the Geology Specialist
 - Revise specialist programs to accommodate new faculty who have joined the Department
 - Seize opportunities provided by new Environmental Science program
 - Offer a larger number of upper level Geology courses

2 Graduate Program

Geology, M.Sc., Ph.D.

The reviewers observed the following strengths:

- Objectives
 - Programs provide a high level of professional training and career preparation
 - Program objectives are aligned with the curriculum
- Curriculum and program delivery
 - Research progress is monitored and measured through regular supervisory committee meetings as well as through thesis defenses
- Quality indicators
 - Offer and acceptance rates are in line with Physical Sciences and the University as a whole
 - An impressive number of former students have continued on to careers in academia, industry or more advanced studies (Ph.D. or postdoctoral research) elsewhere
 - Graduates are frequent winners of important Geology awards
- Students
 - Graduate students are engaged and satisfied with their education, research and interaction with their advisors
 - Effective teaching and career preparation support for graduate students
- Student funding
 - Uniform funding packages for graduate students
 - High rate of scholarships received by graduate students

The reviewers identified the following areas of concern:

- Quality indicators
 - Upward creep in time-to-completion for Ph.D. students (6.6 years)
- Enrolment
 - Declining acceptance rates to master's programs, which could be attributed to increasing competition with industry for B.Sc. graduates in Canada
 - Declining Ph.D. enrollment since 2003
 - Lack of transparency about the functioning of graduate admissions
- Students
 - Student satisfaction statistics from a 2010 Canadian Graduate Professional Student Survey are mixed
 - Students' concerns regarding their funding has negatively influenced enthusiasm and morale
 - Concerns regarding limited international enrolment

The reviewers made the following recommendations:

- Enrolment

- Be proactive in increasing the size of the graduate-student cohort
- Allocate new resources toward recruitment and support for international students

3 Faculty/Research

The reviewers observed the following strengths:

- Research
 - Broad range of research programs, with “top-flight” programs in Environmental Geochemistry, Geobiology and Petrology & Geochemistry, with strengths and potential in a range of other areas
- Appropriateness of activities for the undergraduate and graduate students in the programs
 - Both undergraduate and graduate students have opportunities to undertake research
 - Ph.D. students publish throughout their programs
- Faculty
 - Morale is positive

The reviewers identified the following areas of concern:

- Level of activity relative to national and international comparators (productivity, research funding)
 - Faculty research productivity and impact is uneven, with some academic staff falling below expected norms for published papers and citations
- Faculty
 - Concerns regarding teaching loads, distribution of administrative support, and the transparency of decision-making processes
- Complement
 - Concerns regarding the equity of funding for and support of junior faculty members’ research
 - Decreased number of tenure-track faculty while undergraduate student numbers have increased, resulting in resource issues and the elimination of the senior thesis for Geology Specialists

The reviewers made the following recommendations:

- Research
 - Bolster the research programs of junior faculty to strengthen their scientific contributions
 - Consider the future of the Satterly Geochronology Lab, and determine whether to bolster current resources or phase it out
- Appropriateness of activities for the undergraduate and graduate students in the programs
 - Consider requiring a senior thesis in programs with lower enrolment (e.g., Environmental Geology and Geophysics Specialists)
 - Create more opportunities for field work and to discuss research with undergraduates
- Complement

- Develop more equitable and transparent methods to assign teaching to ensure that the load (including course development as well as delivery) is well balanced
- Consider targeted searches in strategic areas to bolster research profile and to provide additional opportunities for undergraduates to pursue research

4 Administration

The reviewers observed the following strengths:

- Relationships
 - Positive relationship with the Department of Physics and the smooth transition of geophysics to Earth Sciences without significant concerns
 - “Excellent” outreach to the public and mining industry
 - The opportunities to collaborate with the School of the Environment
- Morale of faculty, students and staff
 - Healthy, recently-improved morale due to the new department chair
- Staff
 - Staff members have a good rapport with the faculty and students and are supportive of departmental activities
 - Low ratio of faculty to support staff
- Opportunities for new revenue generation
 - Substantial, continued success in fundraising
- Planning / Vision
 - The amalgamation of faculty members from Geography, Physics and Geology into the Department of Earth Sciences is a source of strength
- Management and leadership
 - Organization of leadership is appropriate and effective, with “excellent” leadership on the part of the chair

The reviewers identified the following areas of concern:

- Relationships (collaboration)
 - Cognate units perceive opportunities for increased collaboration
- Resource allocation, including space and infrastructure support (facilities, location)
 - The business model for the Geochronology Lab is unsustainable
 - Technical staff are concerned about the replacement of departmental and research equipment
- Management and leadership
 - The perceived lack of transparency in departmental decision-making processes

The reviewers made the following recommendations:

- Relationships (collaboration)
 - Build and improve upon collaborations with other physical sciences and life sciences departments at the UofT

- Organizational and financial structure (including governance)
 - Optimize the allocation of internal departmental space and assess future space needs
 - Assess current technical staffing to ensure appropriateness
- Resource allocation, including space and infrastructure support (facilities, location)
 - Make decision concerning Geochronology Lab
 - Deepen the Department's involvement with the School of the Environment
- Staff
 - Improve communication among the technical staff and between technical staff and the academic staff and the chair
 - Seek out additional ways to represent technical staff in departmental decision making
- Management and leadership
 - Improve communication and administrative processes among the administrative staff to optimize the assignment of graduate students
- Opportunities for new revenue generation & planning
 - Enhance support and engagement with the School of the Environment

ADMINISTRATIVE RESPONSE – Appended



10 March 2014

Professor Sioban Nelson
Vice-Provost Academic Programs
University of Toronto

Re: Review of the Department of Earth Sciences and its undergraduate and graduate programs

Dear Sioban,

Along with the faculty, staff and students of the Department of Earth Sciences, I am very pleased with the external reviewers' positive assessment of the Department and the undergraduate and graduate programs: (Geology, B.Sc., Hons.: Specialist; Geophysics, B.Sc., Hons.: Specialist; Geoscience, B.Sc., Hons.: Major, Minor; Environmental Geosciences, B.Sc., Hons.: Specialist, Major) and tri-campus graduate programs (Geology, M.Sc., Ph.D.). The reviewers concluded that the Department offers strong undergraduate and graduate programs. The undergraduate program encompasses the fundamental disciplines in geoscience and importantly meets requirements for professional Geoscience registration in Ontario. Even with recent major increases in enrolments, the reviewers laud the abundant student opportunities for experiential learning in the field and in the lab. They note that the graduate program is clearly producing high quality researchers, for example, as evidenced by (award-winning) graduates moving on to high-profile careers in academia and industry. The reviewers noted the established research strength of the Department and comment positively on the transition of Geophysics to Earth Sciences. The Department's wide-ranging efforts in geoscience outreach and activity in alumni relations and fund-raising are also commended. The reviewers also note the high level of student satisfaction and positive faculty morale.

As per your letter of 12 September 2013, I am writing to address the areas of the review report that you identify as key. The response to these items is separated into short-(current-3 months)/intermediate- (3-12 months)/long-(12+months) term action items for the Department. The Department has seriously considered the reviewers' comments and a number of changes have been instituted over the past few months to respond to their suggestions.

Curriculum & Program Delivery

• *The reviewers noted challenges relative to the undergraduate curriculum and program delivery, including limited upper level course offerings.*

A streamlining of Earth Sciences (ES) upper year course offerings was recently completed after a review and revision of the undergraduate program. Previously, there were a large number of (very specialized) advanced courses in the Calendar, but their delivery was not consistent. This inconsistency had resulted from a lack of personnel to cover the large number of courses and the specialized nature of the courses where a specific faculty member was required to teach the course (and hence if unavailable due to other teaching commitments or leave, etc., the course would not be able to be offered). These initiatives described below were just being put into place

during the time of the external review, and thus the reviewers did not get a chance to evaluate the success of the revised program delivery.

Short-term response:

- As a new model, ES streamlined their 3rd/4th year courses to a number of core courses (e.g., satisfying Association of Professional Geoscientists of Ontario registration) along with several “topics” courses in Earth Sciences: ESS381-*Special Topics in Earth Sciences* and ESS481—*Advanced Topics in Earth Sciences*. Specialized courses will be delivered through these topics courses so that courses can be offered consistently while at the same time offering varying topics and lecturers through the course. The Department now has the resources to consistently offer the core program plus topics courses, several faculty members rotate the teaching of upper year courses, offering a range of topics. The Department consults with students to ensure that the course topics are relevant to their academic interests. ES students can also take courses in the Faculty of Applied Science & Engineering, and fourth year geophysics courses (listed with the Department of Physics).
- This past year, the Department instituted a new “capstone” field course in fourth year. This course brings together a range of concepts in geoscience in a field environment. As with the topics courses, this capstone course is designed to rotate around field areas and among instructors.

Intermediate-term response:

- The Department is revisiting the senior thesis requirement for the specialist programs. With an increasing faculty complement, there is greater supervisory capacity in the Department and a willingness to reinstate the requirement for a senior thesis. However, a balance must be maintained so that certain faculty members do not take on a disproportionate number of thesis students (e.g. in the past, there has been a heavy demand from students wanting to conduct theses in economic geology related projects).

The reviewers noted the lack of preferred access to 3rd and 4th year Earth Sciences courses for UTM students. Each arts and science division offers independent undergraduate programs and accommodates their own students in the first instance.

- *The reviewers praised the quality of the graduate program. At the same time, however, they note an upward trend in time-to-completion for Ph.D. students and declining Ph.D. enrolment.*

We share the reviewers concern over the upward trend in PhD time-to-completion (TTC). This is an opportune time for the graduate program to review their PhD practices. The tri-campus graduate program has experienced a recent influx of new faculty due to transfers into the St. George Department related its change from a Department of Geology to a Department of Earth Sciences as well as new hires at UTM and UTSC. This increased supervisory capacity resulted in a significant boost to the Department’s graduate student enrollments over the past two years. In addition, owing to experimental/field research done in the Department, there have been circumstances where graduate student research has taken longer than anticipated because of unforeseen and uncontrollable factors of field work or experimentation. The longer completion times for these students have affected the program’s average TTC.

Improving TTC is also a top priority for the A&S Vice-Dean, Graduate Education & Program Reviews. The Vice-Dean has already identified this as a priority issue to address with common and concerted strategies. Currently the Vice-Dean is compiling a best practices document based on existing research and current practices in top-TTC-performing tri-campus/A&S graduate programs.

To address the TTC issue in the Department, a range of responses are necessary, as outlined

below.

Short-term response:

- The Earth Sciences Graduate Affairs Committee is reviewing the current PhD requirements, including discussing the requirement of two supervisory committee meetings per year in the doctoral program (the current requirement is one meeting per year). The Department considers that closer supervision will ensure that students are more closely on-track in their graduate programs—carrying out productive research while meeting timeline targets.

Intermediate/Long-term response:

- A new Associate Chair for Graduate Studies has begun in January 1, 2014. An important mandate will be to explore best practices in graduate supervision to decrease TTC. The A&S Vice-Dean, Graduate Education & Program Reviews will provide support and advice to the new Associate Chair on this matter.
 - The Department has begun encouraging faculty members to get students involved in certain field/experimental work to consider starting graduate students in the four summer months prior to their nominal enrollment date of September. (Several faculty already follow this practice.) This would allow students to get an extra season of field work or an early start on laboratory experimental work.
- *The reviewers expressed concern regarding barriers to enrolling more international graduate students.*

Finding expanded funding for international graduate students is a challenge shared across the Faculty of Arts & Science. Strengthening support for international students is an identified priority in the Faculty's academic plan and its importance reiterated in the 2013 Faculty external review. The Faculty's financial challenges constrain our graduate programs in limiting our ability to recruit the best students, in limiting admissions of international students, and in supporting our students. We have worked with our units to devise funding packages for recruitment purposes. A&S Advancement has had success in raising funds for graduate fellowships, and the Graduate Admissions Committee has usefully offered strategic direction for units' admissions.

Earth Sciences has a strong track record for funding international graduate students. The Department has the endowed Keevil-Finlay scholarship program that provides full graduate support (~\$35k/year) for 3-4 graduate students per year. As per the award record, these scholarships are directed to students from "developing nations" and have proven to be beneficial for recruiting students from a host of countries to a work on a variety of graduate research projects.

Short-term response:

- The Department is actively seeking opportunities to fund international Students. For example, the Department recently established the Emeritus Professor Steve Scott and Joan Scott Graduate Scholarship and the Emeritus Professor Tony Naldrett Graduate Scholarship as part of the last round of the Provost's PhD Enhancement Fund (PPEF) to support international graduate students.

Intermediate-term response:

- The Department continues to put a high priority on graduate scholarships in its advancement activities as a way to facilitate the support of international graduate students. This includes current efforts to fund-raise for graduate scholarships in geophysics.

Communications

• *The reviewers emphasized the need for an improved “culture of transparency” in Departmental decision-making processes, including in the communication of financial information to graduate students.*

The specific issue raised regarding the communication of financial information to graduate students referred to special circumstances in 2011-12 related to student funding. In the previous academic year (2010-11), there had been a surplus of graduate funding owing to healthy balances in endowed graduate scholarships. A decision was made to pass this surplus along to graduate students that year, yielding an increase in the base funding level from the nominal level of \$17k to \$18.5k. The following year, this surplus did not exist, so graduate student funding returned to \$17k. After consulting with graduate students, the Department now realizes the circumstances around the increased funding were not clear to all graduate students.

Short-term response:

- A concerted effort has been made by the Chair and Associate Chair, Graduate Studies to better communicate the (inherently complicated) funding packages to new and returning students. For example, at the annual new graduate student orientation day in September, a session is held to specifically explain the graduate student funding form to new students. In addition, the Graduate Affairs Officer is continuing to meet individually with students to explain their funding packages.

Intermediate-term response:

- A responsibility for the new Graduate Associate Chair and the Graduate Affairs Committee will be to review funding policies for graduate students, including the best ways to communicate this information.
- More generally, the Department has a retreat planned in April 2014 (expected to be the first of regular such meetings) to discuss broad issues of communication and governance in the Department. This will help continue the smooth transition among Departmental members from Physics, Geography, and Geology to a new department.

• *The reviewers noted opportunities to improve relationships with colleagues in cognate units, especially the School of the Environment.*

Individual faculty members in Earth Sciences interact with many UofT units in diverse and numerous ways. Approximately half of the faculty have cross-appointments to other units, supervise, and in other units (e.g. Physics, Chemistry, Geography, Civil & Chemical Engineering), and are principal investigators on grants/proposals with faculty from other units (Civil Engineering, Chemical Engineering, Lassonde Institute, Forestry, Materials Science & Engineering, Geography). Faculty from other units (e.g. Anthropology, Physics, Royal Ontario Museum) supervise students in Earth Sciences and a number of the ES St. George faculty are involved with the new Centre for Planetary Sciences based at UTSC. The Department will continue to foster these interactions and look to develop productive new linkages.

Short-term response:

- A particularly important collaborative opportunity, as the reviewers suggests, is to expand ties with the new School of the Environment. A number of Earth Sciences faculty members are involved with planning the curriculum for the new Environmental Sciences major program within the School. This program will have significant cross-over into the Earth Sciences with shared courses and course options. For example, the Department has converted its GLG202 *Geochemistry* to ENV233-*Earth Systems Chemistry*. This course is now a core part of the Environmental Sciences program as well as the Geology and

Environmental Geoscience programs. It will be co-taught by an Earth Sciences faculty member and instructor from Chemistry (with TA resources coming from Earth Sciences).

Intermediate-term response:

- The Department is also exploring the possibility of an applied geophysics position between Earth Sciences and the School of the Environment (see below). If this moves forward, the request would be submitted to the A&S Faculty Appointments Committee in February 2014 for a search to be initiated in 2014-15.

Resources:

- *The reviewers recommended considering the future of the Jack Satterly Geochronology Laboratory.*

The Jack Satterly Geochronology Laboratory (JSGL) relocated to the Department of Earth Sciences from the Royal Ontario Museum (ROM) in 2003 and is supported by a 0.25 FTE faculty position and technical staff support from the Department. The lab is the birthplace of precise U-Pb geochronology and conducts research in calibrating the timing of diverse events in Earth history such as meteorite impacts, the genesis of ore deposits, and the motion of tectonic plates, as well as resolving the stages of the formation of the solar system.

Short-term response:

- In November 2013 the Department transferred a thermal ionisation multi-collector mass spectrometer (TIMCMS) and supporting equipment to the JSGL. This major piece of research equipment (purchased in 2007) is the core analytical tool for the Lab and represents a significant upgrade on the mass spectrometer currently being used. It provides a significant boost in analytical research capacity, for example with improved precision and potential for sample automation. The equipment is undergoing testing and commissioning by the Lab and should be functioning in the first quarter of 2014.

Intermediate-term response:

- As recommended by the external reviewers, the JSGL and Department are organizing a symposium in spring 2014 around Geochronology at UofT. This will include inviting high-profile scientists in the field to give seminars, along with scientific presentations by JSGL members. The symposium coincides with the 10-year anniversary of the migration of the JSGL from the ROM to UofT. The event will give the Lab an opportunity to profile their work as well as highlight the significance of this field of research for the geosciences to the Earth Sciences faculty. As the external review suggests, this will help the Department make an informed decision on the future of the JSGL in Earth Sciences.

Long-term response:

- With the formation of a new Department of Earth Sciences, there will be renewed discussion whether the JSGL fits within the academic vision for the Department. With a broadening of scope of Earth Sciences, there may be an enhanced case for support for the JSGL as their geochronology work is vital for unraveling time in the full range of geological and environmental Earth processes. Such discussions will take place as part of Departmental retreats to discuss the long-term vision and goals of the Department. This will affirm whether the Department places a priority on establishing the Lab financially with a full-salary position attached to the directorship of the JSGL.

- *The reviewers pointed out areas of scholarship and research that could be further developed, most notably Geophysics.*

The Department's strategic plan (2009-2015) includes Applied Geophysics as a priority hire area. The recent transfer from Physics of a senior faculty member specializing in applied

seismology provides additional strength in this area. With the impending retirements of two faculty in this area across both Earth Sciences and Physics, the Department has indicated the need to renew the teaching and research expertise in applied geophysics. The Department sees opportunity in linking such a position with the Arts & Science School of the Environment and the Archeology Centre.

The Faculty of Arts & Science Appointment Committee meets annually to review requests for teaching staff from Arts & Science units. Requests are reviewed on the basis of criteria that are announced in advance through an annual memorandum to unit heads, including: the unit's Academic Plan and the Faculty's response; any subsequent external review reports; any subsequent discussion and developments that have led to changes in direction; new information and changes to circumstances facing the unit, as well as new academic priorities, challenges, and/or opportunities that have arisen; enrolment pressures at the undergraduate and graduate levels; and the integrity of the unit's programs of teaching and research, given the projected impact of any retirements or resignations. Given the uncertain state of the Faculty's financial position, including the serious impact of recent Provincial changes to the Faculty's program fee funding, budget planning has proceeded cautiously with respect to the number of appointments available across the entire Faculty, although endowments and external sources funded a number of additional positions.

Short-term response:

- A request for a position in Applied Geophysics is being prepared by the Department for submission to the A&S Appointment Committee to be considered for the spring of 2014.

Faculty:

- *The reviewers identified concerns regarding faculty teaching loads that could be addressed through review of the Departmental workload policy.*

The Department's new workload policy is explicit about equalizing teaching loads, and importantly defines a reduced teaching load for pre-tenure faculty members. Some of the comments to the reviewers may stem from individuals feeling like they were moved around between courses too frequently in the pre-tenure period (and it was noted that this practice was considerably worse for more senior faculty members). The Chair also notes that the efforts to rationalize upper year course offerings (as described above) will further help stabilize teaching assignments since the undergraduate programs no longer require the assignment of faculty to several specialized, low enrolment fourth year courses.

Short- and Intermediate-term response:

- The Department will monitor the effect of the revised curriculum on faculty workloads. The Department will also maintain consistent course assignments for faculty as much as possible, especially for junior faculty members.
 - The Earth Sciences Undergraduate Affairs Committee reviewed the assignment of TA hours in 2013, redistributing the support among our courses to reflect changing enrolments. The Committee also considered the particular course workload (seminar vs. lecture vs. lab courses) in this redistribution. The Committee will review and adjust where warranted the number of TA hours assigned to courses on an ongoing basis.
- *The reviewers identified unevenness in faculty member research productivity and impact.*

Short-term response:

- A key factor in faculty productivity is research funding, particularly through the NSERC

Discovery Grant (DG) system. With recent changes to the NSERC DG system, some faculty have been unsuccessful in grant applications, severely constraining their ability to recruit graduate students and conduct research. In fall of 2013, the Department instituted an internal peer-review system for new NSERC DG grant applications in an effort to improve their funding results.

- Some faculty conducting experimental/analytical research have identified a lack of technical staff support as a factor in low productivity. A review of the Departmental technical staff allocations will be conducted in winter 2014. Particular attention will be paid to supporting pre-tenure faculty as this was recognized as a priority.
- Some of the low productivity may be related to low numbers of graduate students recruited by certain faculty members. Encouraging early career researchers in particular to take on more graduate students will help boost productivity. This will be facilitated by improved grant funding and enhanced Departmental financial support for graduate students.

Long-term response:

- Careful hiring practices, mentoring for new faculty members, and consistent course assignments for pre-tenure faculty will receive special attention by the Department.

The review report provides a thoughtful analysis of the Department and undergraduate and graduate programs. We appreciate that the reviewers identified the Department's strengths and noted areas for development. The Department has already implemented and/or has begun to move forward with plans to address the key recommendations highlighted by the reviewers.

Sincerely,



David Cameron,
Dean and Professor of Political Science

cc. Russell N. Pysklywec, Chair and Graduate Chair, Department of Earth Sciences
Amrita Daniere, Vice-Dean Graduate, UTM
William Gough, Vice-Dean Graduate Education and Program Development, UTSC

Review Summary

Program(s):	Linguistics, B.A. (Hons.): Spec, Maj, Min Linguistics, M.A., Ph.D.
Division/Unit:	Department of Linguistics
Commissioning Officer:	Dean, Faculty of Arts & Science
Reviewers (Name, Affiliation):	<ol style="list-style-type: none">1. Dr. Robert Bayley, Professor, Department of Linguistics, University of California, Davis2. Dr. Marie-Hélène Côté, Professor, Département de langues, linguistique et traduction, Université Laval3. Dr. Colin Phillips, Professor & Distinguished Scholar-Teacher, Department of Linguistics, University of Maryland, College Park
Date of review visit:	November 14 – 15, 2013

Previous Review

Date: January 11, 2007

Summary of Findings and Recommendations:

1. Undergraduate Programs (Linguistics, B.A. (Hons.): Spec, Maj, Min; Linguistics and Languages, B.A. (Hons.): Spec; Linguistics and Philosophy, B.A. (Hons.): Spec.; Linguistics and Computing, B.Sc. (Hons.): Spec)

The reviewers observed the following strengths:

- Program is very well-crafted and successful
- Students receive a high level of focused instruction

2. Graduate Programs (Linguistics, M.A., Ph.D.)

The reviewers observed the following strengths:

- High quality training provided to students
- Planned expansion of the graduate program
- Successful integration of approaches to language variation

The reviewers identified the following areas of concern:

- Possibility that the department is losing excellent B.A. students to Ph.D. programs with direct entry
- M.A. program is demanding and intensive

The reviewers made the following recommendations:

- Reconsider M.A. program structure

3. Faculty/Research

The reviewers observed the following strengths:

- Very high quality, with strong research productivity and international recognition
- Exemplary dedication to teaching and service
- Students involved in faculty research

The reviewers identified the following areas of concern:

- Comparatively small size of the complement

The reviewers made the following recommendations:

- Make new hires to alleviate any strain on the complement

4. Administration

The reviewers observed the following strengths:

- Successful integration of joint/cross appointments with linguists at UTM and UTSC
- Respectful, collegial culture

The reviewers identified the following areas of concern:

- Support staff are stretched

The reviewers made the following recommendations:

- Add staff support to graduate student administration
- Add space in order to foster the collegial environment of the department

Last OCGS Review(s) 2004-05

Date(s):

Current Review: Documentation & Consultation

Documentation Provided to Reviewers:

Terms of Reference; Self-Study; Faculty CVs; Site Visit Itinerary; Faculty of Arts and Science External Review Report (2013); University of Toronto Academic Appointments – Overview; and Faculty of Arts and Science Organizational Chart

Consultation Process:

The reviewers met with the Dean; the Vice Dean, Graduate Education & Program Reviews; the Department Chair, the Chairs/Directors of cognate university departments; junior and senior faculty members; administrative staff; and undergraduate and graduate students.

Current Review: Findings & Recommendations

1 Undergraduate Program

Linguistics, B.A. (Hons.): Spec, Maj, Min

The reviewers observed the following strengths:

- Overall quality
 - Excellent program, among the very best in North America
 - A justifiable source of pride for the Department
 - Impressive, high quality program delivered to a large number of students
- Objectives
 - Program is consistent with Department's academic plan
- Admissions requirements
 - Appropriate in maintaining program quality
- Curriculum and program delivery
 - Rigorous education in formal linguistics and modern linguistics for both the Specialist and Major
 - Breadth and depth of training is unusual in North America
 - Numerous opportunities to learn beyond the classroom, including through Individual Project courses
 - Many undergraduate opportunities for participating in research and fieldwork, often as early as their first year
- Assessment of learning
 - Assessment methods are on par with those of other linguistics programs
- Quality indicators
 - Students are well-prepared to study at the graduate-level
 - Strong record of student achievement in graduate programs in North America
 - Department successful in receiving valuable Curriculum Renewal Initiatives Fund (CRIF) grants, which have enhanced students' empirical methods training
- Program Development
 - Proposed joint major in Linguistics and Speech, focused on Speech Language Pathology, anticipated to be popular
- Students
 - Very high quality students
- Support
 - Innovative participation in the WIT and "Reading to Write" programs
 - Faculty open and engaged with students

The reviewers identified the following areas of concern:

- Curriculum and program delivery
 - Emphasis in the Specialist curriculum on phonology and syntax rather than sociolinguistics and psycholinguistics
 - Use of mandatory core requirements to sequence courses tends to favour certain subdisciplines
 - Unusual practices of approving exams well before the end of the term and having the chair approve grades poses problems for newer faculty
- Quality indicators
 - Lack of data available on career placements
- Support

- Need for additional capacity in academic advising and career advising, beyond relying on the Undergraduate Coordinator to support all students

The reviewers made the following recommendations:

- Curriculum and program delivery
 - Offer more curricular flexibility for students outside of the “core” areas, especially those wishing to focus on sociolinguistics or psycholinguistics
- Program development
 - Ensure that a faculty member with expertise in speech pathology serves as a mentor to the Linguistics and Speech students
- Support
 - Increase advising capacity by hiring graduate students or lecturers to work with students

2 Graduate Program

Linguistics, M.A., Ph.D.

The reviewers observed the following strengths:

- Overall quality
 - High quality graduate training
 - Department’s setting in Toronto lends strength to the graduate programs
- Objectives
 - Programs are consistent with the Department’s academic plan
 - Appropriate degree-level expectations
- Admissions requirements
 - Flexible, appropriate admissions requirements for M.A. program
 - Competitive admissions, with M.A. applications increasing sharply over the past six years
- Curriculum and program delivery
 - *Both programs*
 - Consistently good quality teaching and supervision of individual research projects
 - Strong offerings in Language Variation and Change (LVC)
 - Programs based on a classic model with phonology and syntax at the core, with focus on recent developments in linguistics and areas of faculty expertise
 - Graduate students involved in a wide variety of research projects
 - *M.A. Program*
 - Provides an intensive introduction for research and good coverage of important linguistics areas
 - Clear structure and timetable
 - Forum courses create lasting connections between students
 - Forum papers are a highlight of the student experience
 - Effective matching of students to forum paper supervisors
 - *Ph.D. Program*

- Curriculum reflects training that is appropriate to current research in linguistics
 - High quality teaching and supervision
 - Program length is appropriate to program expectations
- Assessment of learning
 - Appropriate methods of evaluation
- Quality indicators
 - Strong quality of the graduate educational experience
 - Excellent career outcomes for M.A. students
 - Consistently high levels of on-time graduation for M.A. students
 - M.A. program is one of the strongest in Canada and a leader worldwide
 - Ph.D. program is among the top three in Canada and among the top 20 in the world
 - Graduate students interested in pursuing academic research careers
 - Strong placement record for Ph.D. graduates
 - Average time to degree is consistent with UofT norms
- Enrolment
 - Strong cohort of students enrol in M.A. program, a number of whom are drawn from the excellent UofT undergraduate population
- Students
 - High levels of student satisfaction
- Student funding
 - Laudable efforts in providing Ph.D. students with funding beyond the fourth year
- Support
 - Open, welcoming environment; students happy with the opportunities for student-faculty interaction
 - Ph.D. students provided with good guidance in developing their research
 - Friday research groups are good venues for helping students develop presentation skills

The reviewers identified the following areas of concern:

- Overall quality
 - Programs more distinguished by their high quality and depth rather than by their innovative elements
- Admissions requirements
 - Admissions expectations reflect department's emphasis on syntax and phonology versus curricular areas that are less well-developed
 - Limited number of faculty making graduate admissions decisions
 - International students overrepresented among department's most successful graduates
- Curriculum and program delivery
 - *Both programs*
 - Underdeveloped supervision of students' overall development as scholars
 - Challenges related to the tri-campus organization of the graduate programs
 - Not every professor teaches a graduate course every year; issue will continue to grow as complement expands at UTM and UTSC

- Difficulties in UTM and UTSC professors recruiting graduate students
- *M.A. Program*
 - Less flexible program structure limits opportunities outside of the traditional core curriculum, reflecting the prioritization of certain fields
- *Ph.D. Program*
 - Limited involvement in courses and seminars beyond the first year an issue for some students
- Assessment of learning
 - Less attention given to Ph.D. student progress and outcomes
- Quality indicators
 - Limited number of tenure-track appointments available for graduates post-graduation
- Enrolment
 - Ph.D. students primarily drawn from M.A. program
- Student funding
 - Difficulty attracting more international students to the programs due to limits on provincial funding, limiting the department's overall competitiveness
 - Justifiable student concerns regarding levels of funding
- Support
 - Overreliance on graduate coordinator to provide mentoring to students
 - Gap in mentoring between M.A. and Ph.D. programs
 - Need for additional mentoring of students' overall development
 - Students would like more guidance on preparing research for peer-reviewed publication
- Outreach / Promotion
 - Website and publicity materials do not do justice to the department's strengths

The reviewers made the following recommendations:

- Admissions requirements
 - Reconsider the way in which graduate admissions decisions are made
- Curriculum and program delivery
 - *Both programs*
 - Take innovative measures to ensure equitable access to graduate teaching and research assistant opportunities given the tri-campus nature of the graduate program
- Quality indicators
 - Examine why students decline M.A. offers; assess whether the department should allow direct entry into the Ph.D. program
 - Assess prospects for students' future employability given the tight job academic market; provide students with more information about alternative careers
 - Re-examine how mentoring and student funding might be impacting Ph.D. time-to-degree
 - Apply best practices from M.A. program in encouraging Ph.D. students to graduate on time

- Student funding
 - Investigate the number of students who complete the Ph.D. program within the initial four-year funding period
 - Improve the basic graduate student package and funding in the fifth year
- Support
 - Strike a balance between allowing students to chart their own paths and providing consistent mentoring to students
 - Revisit scope of graduate coordinator role; consider assigning faculty mentors to incoming graduate students
- Outreach / Promotion
 - Examine online presence and determine ways to better promote the programs

3 Faculty/Research

The reviewers observed the following strengths:

- Overall quality
 - High quality, active research program
 - Research leader in Canada
 - Department enjoys wide recognition internationally for its overall excellence
- Research
 - Faculty well integrated in international research networks
 - Faculty pursue relevant contemporary research questions
 - Established reputation as a centre for research on aboriginal and understudied languages
 - Research strength in language documentation and revitalization
 - Large number of publications in high-quality outlets
 - Substantial external research funding
 - Numerous invitations to speak at national and international conferences
 - Several major national and international research awards
 - Substantial engagement in the discipline, with many faculty on the editorial boards of journals, participating in professional societies, and organizing major conferences
 - Toronto metropolitan area provides many opportunities for research on many different languages, and for investigating heritage languages and language contact
- Faculty
 - New appointments have expanded coverage and are consistent with current developments in the field, especially in quantitative approaches in sociolinguistics and psycholinguistics
 - Very collegial atmosphere
 - Some faculty at the very top of their field
 - Reasonable balance between lecturer, assistant, associate, and full professor positions

The reviewers identified the following areas of concern:

- Faculty
 - Faculty complement renewal is the most pressing issue facing the Department; a number of upcoming retirements (several in syntax)
 - Faculty have varying perspectives on the best academic direction for the department, chiefly what constitutes core or non-core subject matter
 - In most areas, expertise is concentrated at St. George, with the exception of psycholinguistics, which is more distributed across the three campuses
 - Instances of misalignment between the curriculum the current composition of faculty

The reviewers made the following recommendations:

- Research
 - Continue to explore and leverage the research and relationship-building possibilities afforded by the department's location in Toronto
- Faculty
 - Explore innovative ways to provide similar opportunities for teaching and research for faculty across the three campuses
 - Engage in faculty complement planning, considering the best way forward for the unit; determine whether to build on current strengths or pursue new directions in research and teaching
 - Better align the curriculum and the complement

4 Administration

The reviewers observed the following strengths:

- Relationships
 - Exceptionally strong morale, with a genuine sense of community in the department
 - Very high level of satisfaction among all stakeholders
 - Strength and breadth of programs provide many opportunities for connections with linguists at other institutions and experts in related fields
 - Promising connections with other academic units at UofT, including Spanish, Speech-Language Pathology in the Faculty of Medicine, and Aboriginal Studies
 - Department faculty are strongly connected to international academic networks
 - Faculty genuinely engaged on the world stage, at a level that is consistent with their international standing
 - Positive engagement with alumni and friends in the Toronto community
 - Many faculty engaged in work that has a broader societal impact
 - Involvement in the innovative Cognitive Science major
- Organizational and financial structure (including governance)
 - Appropriate, effective organizational structure
 - Universal support for current academic leadership
 - Effective staff complement
 - Efficient use of existing space
- Planning / Vision

- Department's academic plan is consistent those found at other leading comprehensive universities
- Department/unit/programs relative to the best in Canada/North America and internationally
 - Enviably national and international reputation

The reviewers identified the following areas of concern:

- Relationships
 - Collegial atmosphere could impede challenging discussions of the department's future
 - Department's closeness could create "us/them" situation with cognate departments, potentially impacting the strength of connections to other units
 - Department falling short of its stated goal to be the hub of language and linguistics studies at the University
 - Unclear scope of student connections to Aboriginal Studies
- Organizational and financial structure
 - Not all faculty involved in hiring decisions
- Department/unit/programs relative to the best in Canada/North America and internationally
 - Limited number of reliable indicators (e.g. QS rankings) to assess relative position of programs

The reviewers made the following recommendations:

- Relationships
 - Preserve the strong sense of community within the department
 - Strengthen university-internal connections with linguists in other programs and experts in related fields
- Organizational and financial structure (including governance)
 - Find ways for all faculty to have a voice in new hires
 - Provide additional space to the Department, especially for a departmental seminar room and additional lab space

ADMINISTRATIVE RESPONSE – Appended