### OPEN SESSION

#### Consent Agenda

**Motion:** To approve or receive for information by consent items 1-5 below.

1. Minutes of the 17 June 2013 Meeting
   - Decision

2. Reports from Committees and Councils
   - a. Graduate & Research Council
   - b. Nominating Committee for Honorary Degrees [news release at senators’ places]
   - c. Undergraduate Council
   - Information/Decision

3. Report of the President
   - a. Recognition and Commendation
   - b. Tenure and Promotion of Faculty Members
   - Information

4. Reports from the Faculties and Renison University College
   - Information

5. Other Business
   - a. Committee/Council Appointments/Appointment Change
   - Decision

#### Regular Agenda

3:35 6. Business Arising from the Minutes

3:40 7. Reports from Councils
   - a. Graduate & Research Council
   - Decision

3:50 8. Undergraduate Council
   - Decision

4:00 8. Teaching Presentation: Professor Jay Dolmage, Department of English Language & Literature
   - Information

4:10 9. Report of the President
   - Information

4:20 10. Q & A Period with the President
   - Information

   - Information

4:45 12. Report of the Vice-President, Advancement
   - a. Gift Acceptance Policy
   - Information/Discussion

4:55 13. Report of the Vice-President, University Research
   - Information

5:05 14. Other Business
### CONFIDENTIAL SESSION

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<td>5:40</td>
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JLA:tad
5 September 2013

Logan Atkinson
Secretary of the University
University of Waterloo
SENATE
Minutes of the Monday 17 June 2013 Meeting


Guests: Mario Coniglio, Donna Ellis, Adam Garcia, Peggy Jarvie, Cathy Newell Kelly, Kelly McManus, Wendy Mitchinson, Diana Parry, Ellen Réthoré, Daniela Seskar-Hencic, Bud Walker, Dave Wallace, Nancy Weiner

Secretariat: Logan Atkinson, Tracy Dietrich, Alice Raynard


*regrets

Organization of Meeting: Geoff McBoyle took the chair, and Logan Atkinson, secretary of Senate, acted as secretary. Atkinson advised that due notice of the meeting had been given, a quorum was present, and the meeting was properly constituted.

OPEN SESSION

Consent Agenda
Senate heard a motion to approve or receive for information by consent items 1-5 below.

1. MINUTES OF THE 21 MAY 2013 MEETING
   Senate approved the minutes of the meeting as distributed.

2. REPORTS FROM COMMITTEES AND COUNCILS
   Executive Committee. Senate received the report for information.
   
   Graduate & Research Council. Senate received the report for information.
   
   Undergraduate Council
   • Undergraduate Admission Requirements for 2014. Senate approved the undergraduate admission requirements for 2014 as presented.
   • Degree Requirements, Faculty of Mathematics. Senate approved the recommended change to the failure limit for Mathematics Honours as presented.
• Averages, Faculty of Mathematics. Senate approved the recommended changes to mathematic averages as presented.

Senate received the remaining items in the report for information.

3. REPORT OF THE PRESIDENT
   Recognition and Commendation. Senate received the report for information.

4. REPORTS FROM THE FACULTIES
   Senate received the reports for information.

5. OTHER BUSINESS
   Undergraduate Council Appointment. Senate approved the appointment of Tom Brenner, academic dean, Rension University College, as the affiliated university colleges representative, term to 30 April 2015.

Busch and Freeman. Carried.

Regular Agenda

6. BUSINESS ARISING FROM THE MINUTES
   Strategic Plan. McBoyle announced that the strategic plan was sent to the Board of Governors by Senate for consideration at its meeting of 4 June. The board returned the plan to the administration for some adjustments. It is intended to take the revision to the Executive Committee of the board for further feedback, and then on to the board for final approval.

7. REPORTS FROM COUNCILS
   Graduate & Research
   • Physics, Faculty of Science. Senate heard a motion to approve the deactivation of the graduate co-op option in physics for the program offered by the Department of Physics and Astronomy.

   Horton and Freeman. Carried.

   • Tourism, Faculty of Applied Health Sciences, Faculty of Environment. Senate heard a motion to approve the change in degree names from “Master of Arts in Tourism Policy and Planning” to “Master of Arts in Tourism” and from “Master of Environmental Studies, Tourism Policy and Planning” to “Master of Environmental Studies, Tourism,” and to approve the change in degree requirements for the programs offered jointly by the Department of Recreation and Leisure Studies and the Department of Geography and Environmental Management as presented.

   Horton and Andrey. Carried.

   • Diploma in Green Energy, Faculty of Engineering. Senate heard a motion to approve the type 3 graduate diploma in green energy offered by the Department of Mechanical and Mechatronics Engineering as presented.

   Horton and Porreca.

   Horton explained the differences among type 1, type 2 and type 3 diplomas. She explained as well that the financial plan is for approval by the Provost’s Office, and not for Senate’s approval.

   The motion carried.
8. RESEARCH PRESENTATION

Dixon introduced Wendy Mitchinson, professor of history. Mitchinson reported on her research in the area of women and medical history. Her specific focus is the perception in medicine toward obesity through the twentieth century, especially related to nutrition, height and weight. Charts in this respect were inventions of the life insurance industry, and therefore they were constructed based on the assumptions at that time current in the industry. Her research uncovers sources of various perceptions of obesity, and where blame is placed for obesity as a phenomenon of twentieth century life, reflecting in particular on gender biases in the construction of blame. She reviewed some of the treatment options through the twentieth century, concluding that the options have largely failed.

9. REPORT OF THE PRESIDENT

10. Q&A PERIOD WITH THE PRESIDENT

There was no report from the president.

11. REPORT FROM THE VICE-PRESIDENT, ACADEMIC & PROVOST

McBoyle congratulated Bruce Mitchell on his retirement from administrative service at the university, and Senate showed its appreciation through a round of applause.

McBoyle announced that Beth Jewkes has been appointed associate provost, resources, term 1 August 2013 to 31 July 2016; Flora Ng has been named chair of the University Appointments Review Committee, term 1 June 2013 to 31 May 2016; and Bud Walker has been appointed interim associate provost, human resources, to serve until a permanent appointment is made.

Undergraduate Admissions and Entrance Scholarships. Associate Registrar (Admissions) Nancy Weiner reported on the number of offers, confirmations, entrance scholarships and transfers. She explained the process by which decisions are made to make offers, and how those decisions affect projections at this stage. There is a trend across the sector in Ontario this year toward higher numbers of confirmations, but it is still too early to determine if that trend will hold, and why. Weiner agreed to bring additional information back to Senate to explain changes in confirmations relative to targets.

The increased numbers will have an impact on residence spaces, the use of lab space, and in co-op placements. Plans are underway to address the residence question. Faculties will be responsible for making appropriate adjustments in the use of labs, and staff in Co-operative Education is working now in anticipation of pressures in January.

Slides used in the presentation may be seen at https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/uaes.pdf
12. REPORT OF THE VICE-PRESIDENT, UNIVERSITY RESEARCH
Dixon reported on SSHRC results in the latest round of awards, yielding a success rate of 38% (about 9% higher than the success rate in the competition overall). He agreed to provide a faculty breakdown for inclusion in the minutes, as follows:

**Successful Grants (11):** Arts 6, AHS 2, Mathematics 1, Environment 1, Renison 1.

**4A Grants (9):** Arts 7, Environment 2.

**Unsuccessful Grants (9):** Arts 5, Environment 3, Engineering 1.

13. REPORT OF THE CHIEF INFORMATION OFFICER
Wallace reported on the progress in the development of ideas in “strategic information technology.” He made special mention of the idea of a federated governance model for the information technology function at the university, and generally summarized the process involved in generating the university’s IT strategic plan. In answer to a question, Wallace advised of plans to increase cell access and Wi-Fi connectivity. He commented as well on challenges in protecting the privacy of various forms of online communication. Wallace advised that the university is doing its best to resist spam, but will continue to look for ways to make improvements.


14. OTHER BUSINESS
**Statement on Mid-term Tuition Increases.** A statement submitted by several undergraduate student senators was introduced by Forstner. It was indicated by Forstner that those submitting the statement are concerned more about the nature and extent of communication about the tuition changes and the general process by which that is accomplished, than they are about the increase in tuition itself. He suggested that the practices by which tuition changes are undertaken be reviewed and improved, and that students be involved in this review. The means and content of communication is the key issue, and this will have to be managed more carefully going forward. McBoyle agreed that the process would be reconsidered, and that any changes in practices would be brought back to Senate for information.

Senate convened in confidential session.

Logan Atkinson
Secretary of the University

18 June 2013
Senate Graduate & Research Council met on 10 June 2013 and agreed to forward the following items to Senate for information. These items are recommended for inclusion in the consent agenda.

Further details are available at: https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council

FOR INFORMATION

CURRICULAR MODIFICATIONS
On behalf of Senate, council reviewed and approved courses changes, new courses and amended referee requirements for the Faculty of Applied Health Sciences (Public Health; Master of Social Work) and approved changes to graduate calendar program descriptions for the Faculty of Engineering (Management Sciences).

SCHOLARSHIPS AND AWARDS
On behalf of Senate, council approved the creation of: Energy Council of Canada Energy Policy Research Fellowship; RBC Water Scholars Graduate Entrance Scholarship; Graduate Excellence Award in Computer Science; and Indian Institutes of Technology Doctoral Entrance Scholarship.

/smg  Sue Horton  George Dixon
Associate Provost, Graduate Studies  Vice President, University Research
Senate Undergraduate Council met on 18 June 2013 and on behalf of Senate, approved changes to academic plans, new courses, course changes and course inactivations. Council agreed to forward the following item to Senate for approval and information. Council recommends that these items be included in the consent agenda. The items recommended for inclusion in the regular agenda are contained in a separate report.

Further details are available at: uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council.

FOR APPROVAL

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ACADEMIC REGULATION CHANGES

Faculty of Arts

English Language Proficiency Requirement  [effective 1 September 2014]

1. Motion: To approve the change to the English language proficiency requirement as follows (Note: new text = bold; deleted text = strikethrough):

University of Waterloo believes that students must have a basic competency in written English in order to prosper in their university studies. The English Language Proficiency Examination (ELPE) is a diagnostic exam intended to determine the level of a student's ability in written English. Students who do not pass the ELPE should consult the Arts Undergraduate Office for advice on the appropriate method of fulfilling the proficiency requirement.

Students entering the Faculty of Arts in September 2004 or thereafter must:
1. Write the English Language Proficiency Examination by the end of their 1B term.
   Students taking courses on a part-time basis must write the ELPE upon the completion of five courses.
2. Pass the English Language Proficiency requirement by the end of their 2B term. This requirement may be fulfilled in one of the following ways:
   - a grade of 65 or higher on the ELPE; or
   - a grade of 65 or higher in ARTS 101; or
   - successful completion of the work assigned (ELPE Tutorials) by the University of Waterloo Writing Centre.

After one two or more failed ELPE attempts, or an unsuccessful attempt at ARTS 101, or one or more unsuccessful attempts at the work assigned by the Writing Centre, a student may petition the Arts Examinations and Standings Committee to request permission to fulfill the requirement by achieving a grade of 65 or higher in one of the following courses: ENGL 104R, 109, 129R, ESL 102R, 129R.

Notes:
1. Students entering the Faculty of Arts prior to September 2004 should consult the ELPE Requirement as laid out in the calendar of their year of entry.
2. Students who have written and failed the ELPE should consult the Writing Centre rather than attempt the ELPE again unaided.
3. Students who have not completed the English Language Proficiency Requirement by the end of their 2B term will have their future registrations cancelled and will be allowed to proceed only after successful completion of this requirement.
4. A completed English Proficiency milestone on a student's academic record will indicate successful completion of this requirement.
5. Transfer credits cannot be used to satisfy the English Language Proficiency Requirement.
**Rationale:** The Faculty of Arts last made modifications to this regulation in 2009, allowing students who had failed two or more ELPE attempts to use one of the following courses (ESL 102R, ESL/ENGL 129R, or ENGL 140R) towards the English Language Proficiency Requirement as long as a grade of 65% was achieved in the course and that the student submitted a petition to the Arts Examinations and Standings committee. This modification has been helpful for students, and often used as a way of completing this university requirement. As such, the Faculty of Arts and the Student Success Office feel that it would be in the students’ best interest to reduce the criteria to one failed ELPE attempt; this will also assist in reducing the ELPE volume currently being handled by the Student Success Office.

**FOR INFORMATION**

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**Academic Program Review Reports**

- **English Language Institute, Renison University College** – Please see Attachment #1.
- **International Studies** – Please see Attachment #2.
- **Non-departmental Programs in the Faculty of Science** – Please see Attachment #3.

**CURRICULAR MODIFICATIONS**

Changes to academic plans, new courses, course changes and course inactivations were approved for the faculties of: arts (accounting & financial management; applied language studies; arts and business; classical studies; economics; English language and literature; fine arts; French Studies; Germanic and Slavic Studies; Korean; language certificates; medieval studies; peace and conflict studies; political science; psychology; social development studies; sociology and legal studies; Spanish and Latin American studies; speech communication; studies in Islam; women’s studies); engineering (electrical and computer engineering; management sciences; mechanical engineering); and science (biology; chemistry; earth and environmental sciences; physics).

/ees Mario Coniglio
24 July 2013
Associate Vice-President, Academic
ELI Progress Report: Mid-Cycle Review  
Presented to Senate Undergraduate Council by Renison University College

Introduction

The self-study for the English Language Institute (ELI) was submitted on July 20, 2010. A site visit took place in October, and the review team submitted its report on December 8, 2010. The ELI presented a written response to the recommendations on March 1, 2011. In following up, the ELI has now developed a strategic plan that addresses all the key components of the Program Review. Recent developments, such as the release of the Report of the Task Force on Support for English Language Competency Development at the University, have also suggested new directions for the ELI. The following represent, point by point, what activities have been undertaken to address the recommendations made a little over two years ago. The most significant change has been the division of the English Language Institute into two complementary units: the English Language Centre (for non-credit activity and pre-university activity) and English Language Studies (for credit activity and post-university activity). Each of these units now has its own full-time director.

ELI Response to Specific Program Recommendations

1. Develop an overall strategic plan for expanded role at the university
   a. Re-craft Mission statement to correspond strategically to the mission of Waterloo

   The following revision of our mission statement is proposed, with elements more clearly linking our programs to the University of Waterloo in bold.

   **Mission statement**

   To help our students use English more proficiently, we are committed to developing curriculum informed by current research and delivering meaningful instruction in a supportive environment.

   The English Language Institute strives to...

   - provide student-centered classes led by dedicated, professionally trained and certified instructors
   - encourage students to collaborate with others inside and outside the classroom to increase their socio-linguistic flexibility
   - keep classes small with tasks and activities ranging from controlled to free practice to meet the collective and individual needs of students
   - assist the University of Waterloo in meeting its internationalization goals
In the English Language Centre, we...

- provide ESL instruction that allows students to meet their academic and professional goals
- organize course materials in clearly defined levels, allowing students to measure their progress against recognized standards
- provide English language training that allows students to meet the University of Waterloo’s established standards of admission

In English Language Studies, we...

A. provide uWaterloo students with ESL instruction that...
   - helps students meet their English language needs in their fields of study

B. deliver the Applied Language Studies program that...
   - provides instruction in the field of second language acquisition reflecting current research in the field
   - provides opportunities for students to apply theory to practice

C. deliver ESL teacher training programs that...
   - provide professionally certified ESL teacher training
   - create professional development opportunities for language teaching professionals both on and off campus to promote best teaching practices through active research

b. Review Budget arrangements between ELI and Renison
As is true for all programs at Renison University College, the English Language Institute budget is part of the College’s general budget. Income and expenses are reviewed regularly by the Principal, ELI Directors, and the Director of Finance to ensure that the ELI can deliver its programs professionally and that salaries and wages are competitive.

c. Affiliating credit courses with SSO, Affiliating APPLs courses with Faculty of Arts, moving ACE TESOL into revenue-generating stream of ELI
At the time the self-study was written (2010), the Student Success Office (SSO) had just been initiated and its role was evolving. Since then, the SSO has clarified its role within the university. While the SSO provides essential services to all uWaterloo students, it does not focus on the needs of second language learners. Also, there are no direct links from the SSO to academic departments within the university. Because ESL credit courses are academic and therefore need
an academic home, Renison expects to keep ESL credit courses within the English Language Institute at Renison.

Affiliating the APPLS minor within the Faculty of Arts is dependent upon resources. To move from minor to major status, the program needs tenured and tenure-track faculty to teach the increased number of courses that a major would require. While this has not seemed possible in the past, a recent meeting with the Dean of Arts and language department chairs indicates that there is an interest in creating a graduate program in language studies. If this is the case, then building an undergraduate major to stream students into graduate studies might be a possibility.

ACE-TESOL is a revenue-generating program. This program has recently received accreditation from TESL Ontario, which opens the door to expanding the program. An ACE-TESOL manager has been hired and the program runs within English Language Studies.

2. Consolidate and validate curricula and assessments in relation to academic genres
   a. Expand Curriculum review across non-credit and credit ESL courses and address strategically and expansively the ELI’s role with Waterloo
      A comprehensive curriculum review for both the credit and non-credit courses was completed by December 2012. The English Language Centre has proposed an English language program (BASE) that will allow ESL uWaterloo applicants with grades sufficient for admission but without the required English language proficiency to be offered admission into select programs. This program is being developed in collaboration with uWaterloo’s Registrar’s Office and Undergraduate Marketing and Recruitment. It is evidence of the ELI’s working strategically within uWaterloo to help the university achieve its internationalization goals.

   b. Itemize central outcomes for each course, clarify how activities in the course align directly with these expected outcomes and demonstrate how the assessments confirm that student have achieved the outcome intended
      Between January 2012 and July 2012, the curriculum review, conducted by Advance Consulting for Education, Inc., enabled the English Language Centre to develop a standard format and standard content requirements, ensure coherence of curriculum documents and assessments, map courses against the Common European Framework (CEF), validate transition between levels, ensure that assessment tools are valid, reliable, and practical, and map final results of the 300 and 400 level against IELTS and TOEFL. This was a major undertaking that established a solid foundation from which future curriculum reviews can take place on a 3-5 year cycle.

      By December 2012, the ESL credit course curriculum review was complete. This review recognized the quality of the current courses and made recommendations related to aligning course titles with course content, assessing student skills, and standardizing course materials. The review recommendations were shared with all instructors in December, and steps have been taken to implement the recommendations. Renison’s Academic Council approved the revised descriptions in December.
c. **Clarify, develop, and validate the functions and validity of assessments within and across ELI courses**

The EFAS placement test in use at the time of the self-study has since been replaced with a combined proprietary written task and the Oxford Online Placement test (OOPT). The OOPT places students according to the CEF, which has been mapped onto the curriculum. The written task is used to verify levels or move students at the upper end of a range up or down a level according to writing ability. As part of the curriculum review, the assessment tools in EFAS were analysed to ensure validity, reliability and practicality.

d. **Track and follow-up with graduates of ELI programs to identify how and why ESL instruction has helped students and find out where additional ESL courses are needed**

Tracking EFAS students can be problematic as they don’t always have a Waterloo ID number while enrolled in EFAS. The ELC is investigating whether it will be possible to assign all students ID numbers for increased accountability. The students with Waterloo ID numbers are tracked and are academically successful for the most part. The ELC has been working closely with the Faculty of Science to provide programming to help 2+2 students adjust to life at Waterloo. A recent meeting with Dr. Shoufa Lin, Associate Dean, International Programs, highlights the need for increased attention to language and academic integrity issues during the 2 + 2 summer programs and afterwards. Discussions with IAP are taking place to implement a means of tracking BASE students, when the programs go live this September.

Tracking of students in the International Optometric Bridging Program (collaboratively offered by the School of Optometry and English Language Studies) is done through the School of Optometry. Ninety five percent of students taking ESL credit courses designed to meet the English Language Proficiency Exam milestone achieve this goal. A means of tracking students in other English Language Studies programs is being developed.

e. **Ensure tasks and activities in ESL courses focus primarily on genres of academic English that students need to perform in their academic courses**

Both the EFAS program and the ESL credit courses have an academic focus and thus have academic tasks and activities. The EFS and special programs do not have an association with uWaterloo admissions and so do not have the same breadth of academic content. See attached table for examples of tasks.

f. **Expand content-based ESL courses in collaboration with departments or faculties across Waterloo**

The development of an ESL for Economics course was a move to provide language and content instruction collaboratively to support the academic goals of ESL uWaterloo students. The offering of this course was supported by a LIF grant from CTE. English Language Studies also provides enhanced English language training for foreign-trained optometrists through the International Optometric Bridging Program. For this type of instruction to expand to multiple faculties, a financially viable model needs to be developed, a goal that supports the vision.
outlined in the *Report of the Task Force on Support for English Language Competency Development at the University of Waterloo*. The pilot project for BASE will be used as a means of assessing and determining future developments.

g. **Development and review of curriculum should be informed by expertise and include participation of all instructional staff**
The review of the EFAS curriculum was conducted by Advance Consulting for Education, INC with the full participation of all the full-time staff language instructors. Sessional instructors also participated in the process by providing resources and piloting week-by-week plans. Review of the ESL credit course curriculum was discussed at the staff meeting in December 2012, followed by section meetings. Section leaders reported to the Director about how the review recommendations would be adopted in the winter 2013 term.

h. **Establish cyclical development and review process of curricula**
Now that a comprehensive curriculum review major overall has been completed, both divisions of the ELI can establish a 5-year cycle for curriculum review.

i. **Undertake curriculum revisions within overarching ELI strategic plan**
The Directors of the ELC and ELS have created a strategic plan for the ELI, which has been distributed to full-time instructors for input. It will be distributed to the Renison community (Winter 2013) and will be shared with the uWaterloo community (Spring 2013).

j. **Expand APPLS program**
Expansion of the APPLS minor to a major may now be possible as a recent meeting with the Dean of Arts and language department chairs indicates that there is an interest in creating a graduate program in language studies. If this is the case, then building an undergraduate major to stream students into graduate studies might be a possibility.

3. **Expand and regularize personnel**
   a. **Hire a dedicated Director**
      In March 2012, the ELI was restructured into English Language Studies (ELS) and English Language Centre (ELC). Each of these areas now has its own dedicated Director.

   b. **Restructure task assignments and positions**
      In November 2012, the Directors provided the Renison Principal and the Board of Governors with a 5-year plan for strategic growth that includes required staffing and space needs.

   c. **Hire a marketing and student recruitment/orientation staff person**
      In October 2012, the ELS and ELC hired a full-time marketing/recruitment staff person.

   d. **Regularize appointments and salaries for instructors on long-term teaching appointments**
In Spring 2011, job descriptions were rewritten and sent to Human Resources at uWaterloo. By Spring 2012, the job descriptions were re-graded and approved.

In Spring 2012, ESL credit course hours were regularized at 4.5 hours/week, and lecturer contracts were similarly standardized.

e. **Require instructors to have a minimum standard of a Master’s degree in relevant discipline**
Having a Master’s degree is now a requirement for newly hired full-time instructors. For the ELC, it is preferred that sessional instructors have a Master’s degree, but not required. Experience has confirmed that the best instructors are not always those with a Master’s degree.

A graduate degree in a related field has always been required of ESL credit instructors. This practice will not change.

4. **Utilize facilities and resources strategically**
   a. **Maximize classroom use and investigate availability of small classrooms across the full university campus**
      Classes run in 4-5 hour blocks when they can no longer be scheduled in the current manner. In the summer, a few classes are held on main campus, with hopes of extending the practice on the Waterloo campus throughout the year. In preparation for including EFAS courses on the schedule of classes, the 300-level and 400-level courses are seeking Senate approval for inclusion in the University calendar.

   b. **Investigate need and use of language lab**
      The language lab space on main campus is also destined for change as indicated in a recent meeting of the Dean of Arts and language department chairs. Language departments point out that, with new technology, the need for a traditional language lab has all but been eliminated. The ELI program review team also questioned whether the REN language lab optimized the use of space. The EFAS program now incorporates lab time into 1.5 hours of weekly classes. Any decision about the use of the REN lab (a decision to be made by Renison’s Principal) should take into consideration curriculum requirements as well as what is happening with the uWaterloo labs.

c. **Increase library holdings for ESL practice materials, and**

d. **Increase and encourage use of library holdings for APPLS programs as well as for professional development of ESL instructors**
   ELI’s relationship with Renison’s Lusi Wong Library is strong, and the librarian encourages ELI teachers to request resources. However, there is reluctance to stock practice materials (such as workbooks) as suggested in the review because students tend to write in this type of material, resulting in damaged books, an expense the library has not budgeted for.
The Renison library supports the ESL credit, APPLS, and ACE-TESOL programs by purchasing books and materials as requested. To build richer and more extensive collections in these areas, a more consistent effort will be made to recommend books for purchase.

e. **Add a budget line for ongoing updating and expansion of the instructional resource library for the ELI**  
   This expense was added to the 2012 budget line.

f. **Increase space for instructors and put names on their doors**  
   In January 2012, Renison designated an ELC instructors’ room with space for eight sessional instructors. Additional office space is being sought for full-time instructors as well as for sessional instructors in short-term programs. Door plates were requested in April 2012.

**Summary**

The English Language Institute has made significant strides in meeting the recommendations of the 2010 Program Review Report. Most notably, it has been divided into two units - the English Language Centre and English Language Studies – that clearly define their areas of activity. Both units have completed curriculum reviews and have begun to implement the resulting recommendations. Salaries for instructors and staff members have been increased to make the positions competitive with similar positions across Ontario and Canada. A strategic plan has been developed to be shared with the Renison community, and a marketing specialist has been hired. The mission statement has been revised to emphasize links to the University’s strategic goals, and the BASE program has been designed to enhance its ability to attract top international students.

The English Language Institute is well positioned to support the University of Waterloo in its efforts to meet the vision outlined in the *Report of the Task Force on Support for English Language Competency Development*. Further, it is committed to working with the university to improve its ability to track student progress and optimize its use of facilities and resources to help achieve the goals of the university into the next decade.
International Studies Two-Year Progress Report: May 2013

Brian Orend, Director

The last strategic review of International Studies was submitted in 2010, and the Director is pleased to present this two-year progress report.

1) Action Taken Since Last Report

a. As mandated by Central Administration (in the interests of rendering consistent the requirements of all options/minors), the International Studies Option (ISO) has now been transformed into the International Studies Minor (ISM). The Minor requires the completion of one core course (INTST 101, “Introduction to International Studies”), and seven electives (from a vast range of courses, offered by many departments/faculties). Any student, in any UW program, can register for (and graduate with) the ISM.

b. The major thing mentioned in the last review was how, at the time, the Accounting and Financial Management (AFM) program, was starting to require INTST 101 for all of its incoming first-years. That arrangement began in the Fall of 2011 and has continued since, to success. As a result, enrolments in the core course have skyrocketed, and many Teaching Assistants have been employed. INTST 101 now gets offered every year as follows:

Every Fall:

- 2 on-campus sections, reserved exclusively for 1st year AFM students (These sections require 6-8 TAs, paid for by AFM).
- 1 on-line section, open to all UW students (This section requires 2-3 TAs, paid for by the Dean of Arts).

Every Winter:

- 1 on-campus section, open to all UW students (This section requires 2-3 TAs, paid for by the Dean of Arts).

Enrolments:

On-campus section enrolments for INTST 101 since 2010 have been as follows:

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<td>Winter 2012</td>
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Fall 2012 130 (Section 1)
Fall 2012 170 (Section 2)
Winter 2013 114

Online section enrolments for INTST 101 since 2010 have been as follows:

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<thead>
<tr>
<th>Semester</th>
<th>Enrolments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter 2010</td>
<td>67 online</td>
</tr>
<tr>
<td>Winter 2011</td>
<td>70 online</td>
</tr>
<tr>
<td>Fall 2011</td>
<td>68 online</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>81 online</td>
</tr>
</tbody>
</table>

There has been success handling the growth in the core course, INTST 101. International Studies in total—for the past two years—has taught approximately 475 students per year. Compared to the 2010 total of 138/year, this represents more than a 224% growth in core course enrolments since the last report.

From employing ~ 2-3 TAs per year (prior to 2010), International Studies now employs ~ 10-12 TAs per year, providing valuable experience and resume/CV-building for some of our top senior undergrads.

c. There has also been continued growth in the numbers of those graduating with the ISO/ISM.

<table>
<thead>
<tr>
<th>Year</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2</td>
</tr>
<tr>
<td>2007</td>
<td>16</td>
</tr>
<tr>
<td>2008</td>
<td>20</td>
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<tr>
<td>2009</td>
<td>24</td>
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<tr>
<td>2010</td>
<td>38</td>
</tr>
<tr>
<td>2011</td>
<td>26</td>
</tr>
<tr>
<td>2012</td>
<td>50</td>
</tr>
</tbody>
</table>

In the 10 years 1999-2009, an average of 13.8 students per year graduated with the ISO; in the past 3 years, from 2010-2012, an average of 38 students per year have graduated with the ISO/ISM. This represents an increase of 175% of those graduating with this credential.

d. The textbook mentioned in the last Strategic Review has been published. *Introduction to International Studies* came out with Oxford University Press in Fall 2012.
2) Recommendations Not Acted Upon, But Action Planned

- none

3) Recommendations No Longer Considered Appropriate

- none

4) New Ideas

a. The ISM continues to serve a constituency at the University: those who wish to add the word “International” to their diploma, but without the commitment required by a Major in such disciplines as Political Science or History. The ISM is open to any student at UW, and is taken by a very diverse group of majors. It remains highly relevant to UW’s self-declared “Internationalization/Globalization” mandate.

b. The growth in those graduating with the ISM credential is heartening, but the real opportunity seems to revolve around the core course. The only limits to its growth are those necessitated by course caps and TA funds: indeed, a follow-up 102 course could easily be created, leading to a coherent and content-full year-long experience in international studies for the students. The sky is the limit, in terms of the potential growth of this course.

c. There has been informal discussion of what to do with Interdisciplinary Programs moving forward, especially in terms of forging alliances with established traditional departments. For example, Legal Studies is now with Sociology. If this is made UW policy, the question arises as to natural partners for International Studies. Philosophy would make a natural fit. (We have a number of faculty with international- or global research interests, plus Philosophy has helped the Director out informally with International Studies over the years, making for some connection already.) But grouping International Studies with foreign languages might also make some sense (this is what, e.g., Texas A + M has done in the past 2 years—putting International Studies together with all the foreign languages to create a new “super-department” of International Studies (wherein they have 800 majors!)). Some thought might be put into such considerations prior to the next, or as part of the next, strategic review.

d. The online course ought to be updated to keep up with changing international content, and there will be planning for this over the next couple of years. This task would require course relief for the instructor.
Two Year Progress Report:
Non-Departmental Programs in the Faculty of Science

The self-study of the review of non-departmental programs was completed in September 2010 and the site visit was conducted December 6 and 7, 2010. The review team submitted its report on February 15, 2011, and Science’s response was received by the Associate Vice President Academic on April 25, 2011. The academic program review report was approved by Senate Undergraduate Council on May 10, 2011 and was presented to Senate on June 20, 2011. This Two Year Report was received by the Associate Vice President Academic on May 13, 2013 and describes progress related to the non-departmental undergraduate programs since the program review in 2010.

The specific programs reported on are the following:

- Biotechnology/Chartered Accountancy
- Biotechnology/Economics
- Science and Business
- Computational Science (regular and co-operative)
- Environmental Sciences/Ecology (regular and co-operative)
- Honours Science
- Three-Year General Science
- Joint Science-Arts Major (BSc)

Our self-study presented 23 program-specific and general recommendations for improvement. The consultants confirmed, and in some cases, amplified the issues through their probing discussions with students, staff, and faculty and presented their own set of 23 recommendations. We distilled a series of 24 initiatives from the combined 46 recommendations for improvement. A number of these initiatives have already been incorporated into the job responsibilities of a new full-time position in the Science Undergraduate Office – Science’s Student Success Officer – who was hired in August 2011 and charged with developing and implementing Faculty-level success initiatives, as well as participating in institutionally-developed initiatives from the central Student Success Office.

Biotechnology/Chartered Accountancy | Biotechnology/Economics | Science and Business

The dominant issues identified by the students in the Science and Business Programs centred on mentoring and networking. There were already a number of mentoring and networking initiatives in place at the time of the site visit, but clearly students wanted more. Initiatives #1, #3 and #4 dealt with enhancement of mentoring programs: improvement of the existing one for Biotechnology/Chartered Accountancy students and creation of a new one specifically for Biotechnology/Economics students. Related to the above, Initiative #2 was to ensure that a “What I Wish I Knew in First Year” (or a similar) event was regularly organized for students.
**Mentoring and Networking**

There already was a type of peer mentorship program available to Biotechnology/Chartered Accountancy students at the time of the site visit, whereby senior students were connected with more junior (first- and second-year) students. Also, the Science and Business Resource Centre (SBRC) had their Student Ambassador Program, which was launched in response to the 2004 self-study and program review. Also at the time of the site visit, there existed several successful events organized by the Science and Business Resource Centre, notably the annual student/alumni dinner and the annual Fusion Conference. The latter event brings members of all years together with like-minded students from several nearby universities; students are challenged by business-oriented case studies exposed to high profile speakers from the business community.

The new or enhanced initiatives following the 2010 program review are significant. A new Mentorship Program for Biotechnology/Chartered Accountancy, Biotechnology/Economics and Science and Business students was launched in Winter 2013 by the SBRC using program Ambassadors. First-year students are matched/paired with senior student ambassadors who act as “mentors”.

There is also a newly organized JobMine Event, which is focussed on second-year students preparing to go on their first co-op terms. At this event, scheduled in October, ambassadors address any questions that these students have with respect to JobMine and how the system works. This event is meant to supplement course material in PD1, by providing real-life examples from JobMine and tips from upper-year students who have repeated experience with the application process. Most 2A students attend this event. An additional career-oriented mentoring activity is carried out by upper-year ambassadors, who read through second-year students’ résumés, and then follow up with mock job interviews. This initiative is coordinated with the JobMine Event. In addition to mock interviews the Associate Director follows up with students individually to offer résumé critique and career development advice through this “mybusiness personal branding” exercise.

The “What I Wish I Knew in First Year” event caters to new first year students and is run every year in September by the SBRC and the student ambassador team. This event discusses several aspects of university life, including academics, university culture, on- and off-campus activities and extra-curricular involvement, addressing many of the questions that first year Biotechnology/Chartered Accountancy, Biotechnology/Economics or Science and Business students may have. The turn-out for this event has been progressively increasing over the years. In 2012, this event attracted close to 60 students.

Two other social events organized by the Science and Business Students Association (SBSA) include a “Beginning-of-Term” event and an “End-of-Term” event. Attendance is strong at these events and includes students from all three programs. Finally, program ambassadors host a dodge ball event, which is intended to restore a sense of balance for students during the hectic weeks of midterm exams and co-op interviews. This event has been organized twice so far.
Thus, there have been a number of recently implemented opportunities for enhanced mentoring and networking for Biotechnology/Chartered Accountancy, Biotechnology/Economics and Science and Business students. Participation has been satisfactory and these initiatives demonstrate signs of addressing past student concerns concerning mentoring and networking opportunities in these programs. In fact, these students enjoy more combined academic and social programming than students from any other Science program. Given the breadth of activity, a Coordinating Committee was established. This committee meets monthly and includes students from each of the three programs and one representative from each of the program committees (Ambassadors, SBSA and Fusion). Student representatives act as liaisons between the students, the program committees and the SBRC. This committee’s main purpose is to ensure that all events function smoothly and to solicit feedback from students on the various events.

Curricular issues
Comments from students in the program identified several curricular issues, most of which were in the process of being resolved at the time of the site visit. Initiative #5 indicated that the Associate Director of the Biotechnology/Chartered Accountancy, Biotechnology/Economics and Science and Business programs would continue to monitor content and learning outcomes of key courses in the Science and Business and Biotechnology/Economics program – the SCBUS 123, 223, 323 and 423 workshop courses. Discussions with the instructors in the various workshop courses have brought in a variety of positive changes in the workshop courses. A newly developed SCBUS 225 is taken by students in the Biotechnology/Chartered Accountancy program and has content and outcomes specific to that program.

Initiative #6 called for a review of the structure, content and anticipated outcomes of the Biotechnology/Economics program. Students expressed a need for enhanced mathematical/quantitative skills and incorporation of ethics into the program content, either as a stand-alone course or perhaps within one or more of the workshop courses. The curriculum of the Biotechnology/Economics program has not yet been changed to address these two student concerns. It is worth noting that, in the view of the program’s Associate Director, those students wanting extra mathematical skills are a very small minority. Discussions have recently been started with the Chair of the Department of Economics regarding changes to the Economics part of the Biotechnology/Economics program to confirm that the content and program outcomes are meeting students’ needs.

Science and Business recruiting and enrollment
There were more changes in the Science and Business program following the 2004 self-study than any of the other non-departmental programs. Generally speaking, the program’s curricular structure at the time of the 2010 site-visit was considered to be in need of only minor, if any, changes. The most significant comments on the program centred on declining enrollments and what could be done to make the program more visible and attractive to high school students. In response, Initiative #7 focussed on exploring the feasibility of an on-campus experience for prospective Science and Business students. The result was the Science and Business Shadow Program, held for the first time in November 2012. This program attracted 15
high school students, who were taken to a first-year Biology lecture, Chemistry lecture, as well as the first Science and Business Workshop (SCBUS 123), to expose them to what their first year in Science and Business might look like. High school students were also invited to participate in a workshop case study session. This shadow day is currently being considered for further expansion by including other selected Science programs. Based on current application numbers, the interest in the Science and Business program for Fall 2013 admission is encouraging.

At the time of the site visit, all “X and Business” program directors were meeting to discuss possible coordination of their recruiting efforts as well as sharing of certain components of their curricular structures. Initiative #8 indicated Science should continue to engage in this campus-wide discussion. Even though the institutional effort to coordinate the “X and Business” programs has not materialized into the goals mentioned above, the discussion did lead to establishment of “Director Talks” whereby the directors of each “X and Business” program delivered a talk on career development for “X and Business” graduates in the global context.

Initiative #9 was to survey or bring together a focus group to explore possible barriers to more successful recruitment into the Science and Business program, with the ultimate goal of developing a strategy for the possible implementation into the next recruitment cycle. This issue was partially addressed, mitigating the impact of the co-op only option for the Science and Business on recruitment. Shortly after the program review, it was decided to once again offer a regular version of Science and Business for entry into the program, thus increasing the appeal of the Science and Business program to a broader range of prospective applicants. Students were once again admitted to a regular version of the Science and Business program starting in the Fall 2012 term.

Another effort related to recruitment is the continued production of the Science and Business Magazine. Every year the SBRC publishes two editions of the “scibus.ca” magazine – a Graduate and Alumni Edition in the winter, and a Students’ Edition (previously known as the High School Edition) in the summer. These magazines have been received with enthusiasm by current and prospective students. They showcase the program - what it has to offer, as well as what current students and alumni are doing. In January 2013, the 15th edition of the magazine (Graduate and Alumni Edition) was published.

Computational Science
The consultants noted the significant problem with this program, namely “...relatively few students, and numbers have been dwindling in recent years...” The consultants recommended three courses of action: “(1) termination of the program, (2) alternate modes of delivery (as an option or minor), or (3) advertisement and careful revision of the program structure and/or content.” Careful consideration of the situation led to the only practical solution - Initiative #10, which was to inactivate the Computational Science program prior to the next admissions cycle. Students currently enrolled in the program would be allowed to graduate from this program. Admission to the program was discontinued following the 2011-2012 academic year.
Environmental Science

The Environmental Sciences/Ecology program that was reviewed by the Consultants was discontinued at the end of the 2009-2010 academic year. In its place two new department-based Environmental Science programs sharing a common first year emerged: Environmental Science/Ecology Specialization (directed from the Department of Biology) and Environmental Science/Geoscience Specialization (directed from the Department of Earth and Environmental Sciences). Recognizing this, the Consultants’ recommendations led to Initiative #11 which was to have program advisors from Biology and Earth and Environmental Sciences meet with the Coordinator of Recruiting and Marketing, to review current plans to promote these new programs so as to attract healthy enrollments. Initiative #12 indicated that program advisors in Biology and Earth and Environmental Sciences meet with students to explore potential strategies to address their needs and interests.

There has been progress with Initiative #12. Advisors have met with the new incoming students each year to provide them with information about the Ecology and Geosciences specialization of the program, course requirements, deadlines for the coming year, and information about their home departments. Students were also told that the program advisors have an open door policy to consult with students on a one-on-one basis whenever needed. A questionnaire was sent out each year to all students in the program asking for their comments, suggestions, recommendations, and criticisms so that potential improvements to the program would be identified. Social activities have included a pizza night where a guest speaker met with students, followed by a wide-ranging discussion on adapting to university life, courses selection and other issues. The sudden passing away of our Coordinator for Marketing and Recruitment, Richard Vollans, in Fall 2011 put discussions (Initiative #11) about program promotion on hold. With a new coordinator now in place, we are able to follow-up with the required discussion.

Honours Science and Three-Year General Science programs

The Honours Science program is the largest non-departmental program in the Faculty of Science. The students enjoy the curricular flexibility built into this program but a number of concerns were raised related to a lack of an effective peer network (including mentoring) and career advice, as well as inadequate opportunities to conduct research and develop professional relationships with faculty in upper years of the program. Following the site visit, the consultants made four recommendations: (1) enhance opportunities for student-faculty interactions within the program; (2) enhance opportunities for peer-to-peer interactions throughout the program; (3) create a senior-level research-oriented course or workshop ‘capstone’ that all Honours Science students must take; and (4) introduce a mandatory annual meeting for all students with a program advisor. As a result, we identified several linked initiatives to further explore and address these concerns. Similar issues were identified in the General Science program, and therefore some of the initiatives related to that program were piggy-backed with those from the Honours Science program.

Several initiatives fall into the “community building” category. Initiative #13 was to encourage Honours Science and Three-Year General Science students to form student clubs or a joint club,
and to provide appropriate space. Science Society Executive members were invited to discuss this issue. Assuming success with the previous initiative, Initiative #14 was to assist the newly-formed club(s) to stage the first annual event bringing Honours Science and Three-Year General Science students and their Science instructors together. Initiative 15 (for Honours Science students) and Initiative 20 (for General Science students) related to development of peer mentoring programs.

The Faculty of Science created a new administrative portfolio, Associate Dean of Science (Student Relations), in September 2012 to enhance engagement with our students and pursue special projects related to improving the quality of the undergraduate experience. Together with the recently created Science Student Success Officer, students from the Honours Science program were approached on several occasions in 2011 and 2012 about whether a separate club was an attractive proposition. Honours Science and General Science students have always been able to participate freely in the Science Society, as well as in most of the discipline-related clubs under the Science Society umbrella. It is through the club events that students can also meet the professors who are invited to attend their events. The existence of an effective club clearly has to be desired from the student themselves and the students consulted were not markedly enthused at the idea.

To better appreciate the issues that are challenging our students, first and second year students were surveyed in Winter 2013 for their understanding of academic procedures and university support resources, their involvement in organizations outside of class, and opinions on how orientation could be improved. The results are being used to inform the events for orientation and the development of an online community for Science students. This site, called “SciSpace” will collate information on advisors, important dates, integrity, student clubs etc. as well as link to other resources on campus such as the Student Success Office and Career Action. The information will be organized into “Academics, Getting Involved and Next Steps”. Students are contributing to the content and design of this online community. For example, they are making videos on how to get the most out of lectures and lab and sharing their success strategies. Incoming students will have access to this site in the summer before their arrival so they can assess opportunities to get involved as well as transition into university studies more easily. The site will be useful to in-program students as well, particularly by aiding communication with academic units, the registrar’s office, student clubs and support resources on campus. Finally there is interest in expanding the activities of the current Science Student Help Team (SSHT), with some student mentors providing assistance at the team office while others make links with incoming students. The “links” would be made at orientation and provide a base for incoming students to make friends and learn about opportunities at uWaterloo. The possibility of providing an online access to SSHT via the SciSpace site is also being investigated.

The Career View Mirror project was a joint initiative between Science and the Centre for Career Action, in which Science alumni share information on their careers and key skills needed to be successful. There are 71 profiles as of April 2013. Although it is too early to know its impact in helping students visualize and assess career opportunities in Science (including for those students in Honours Science and the General Science programs). All signs are that this will
become a success. Along with Career View Mirror, discussions were held with the Centre for Career Action to devise ways of better tracking the summer and permanent employment paths of our regular students (Initiative 23), but there has been no progress yet on this initiative.

Several initiatives relate to program issues. Initiative 16 was to explore the feasibility of a capstone experience for Honours Science students. The Associate Dean (Student Relations) engaged students in discussion of this topic and to date, there has been no clear progress on this initiative after several false starts. It remains unclear as to whether Honours Science students see value in such an experience, given the diversity of interests, experiences and expectations represented in the student body. How to resource such an initiative is a separate but very significant question. Students will be surveyed in the near future to further explore this issue.

Initiative 17 was to assess the feasibility of developing and implementing a strategy to ensure that in the first year of their program, all first-year Honours Science students meet with an academic advisor, or at least become aware of certain serious situations when they should speak with an advisor. Given the number of students in the Honours Science program, all years combined, and the small group of advisors already working at full capacity in the Science Undergraduate Office, a mandatory annual meeting is not feasible. However, electronically-based strategies to communicate more effectively with Science students – “virtual advising” to assist in their academic decision-making – have been ramped up in the Science Undergraduate Office and the lessening of walk-in traffic suggests we are meeting with success. The Associate Dean (Student Relations) is working with the Student Success Office to develop a web portal to guide students in developing a success plan and help them access university support services. The site may also provide faculty-specific information on programs, seminars, defenses and weekly events and thus become a convenient venue for effective communication with Science students.

A number of initiatives were focussed specifically on the Three-Year General Science program, which enrolls the greatest diversity of students of any Science program: high achievers wishing to fast-track (albeit a minority as they tend to stay in an Honours program even if they do not complete it), struggling students on the verge of being required to withdraw, many part-time students, and a higher proportion adult and online learners. Because the academic requirements to remain in this program are less rigorous than for an honours-level program, there is also a perception by many students in this program that they are “third-class citizens” in the Faculty of Science.

Initiative 18 was to critically examine the structure of advisement responsibilities associated with the Three-Year General Science program, in order to better serve these students. Science hired its Science Student Success Officer in August of 2011 and a large part of his mandate is to engage the struggling students in the Faculty, many of whom are enrolled in the General Science program. Efforts are meeting with success and we are seeing students who previously would have been required to withdraw being able to continue studies. There has also been a sharing of advising for these students, formerly done by the Associate Dean of Science,
Undergraduate Studies, now also done by the Academic Services and Admissions Officer, thus allowing greater availability of service to these students. Science is about to launch a revised website (Initiative #19) aimed at issues relevant especially to the General Science program.

**Joint Science-Arts Major**
There were no issues identified with the Joint Science-Arts Major program. Initiative 21 was to have the Faculty of Science continue to support students in their pursuit of joint programs involving an Arts major.

**Other initiatives inspired by the review of non-departmental programs**
In addition to the Career View Mirror project and employment tracking (Initiative #23), the Faculty of Science was encouraged to develop department-level teaching awards in the units which currently had none (i.e. Earth and Environmental Sciences, Chemistry, Pharmacy). The unit heads were reminded of this early in 2013 to consider developing their own teaching awards (Initiative #24), which could also serve to identify nominees for the Faculty-level Excellence in Science Teaching Award (ESTA) competition. The Faculty of Science has also enthusiastically embraced the campus-wide Teaching Fellows initiative. The program in Science is managed by a Senior Teaching Fellow, and there is a Teaching Fellow appointed in each of the four departments and two professional schools.

**Conclusion**
The consultants recognized that significant challenges related to administration of non-departmental programs derived largely from limited staff resources, and they supported the provision of more resources. The Faculty of Science responded decisively: the hiring of a Science Student Success Officer, the creation of a new administrative appointment - Associate Dean of Science (Student Relations), and significant attention being paid to the layout of administrative space and student facilities in the new Science building, to be completed in late 2015. A number of priority issues remain, mostly those associated with peer mentoring and socializing in the Honours Science and Three Year General Sciences programs, and a “capstone” experience for Honours Science students.
Recognition and Commendation
Vijay Ganesh, an assistant professor in electrical and computer engineering, is the recipient of funding from the Google Research Awards Program 2013 for his proposal entitled “From Functional Regressions to Security Testing.” The Google “unrestricted gift” awards support the work of faculty members at top universities around the world. Ganesh is planning to use the funds to hire master’s and doctoral candidates to assist him with his research into computer security testing. In his proposal, he plans to leverage functional tests that humans routinely write to automatically construct tests for security properties of computer systems. He says he’s honoured to receive the Google award. “Every year hundreds of faculty apply from all over the world. Only about 10 per cent are successful in receiving the award,” he adds. He received the same award in 2011 in the software engineering category when he was a scientist at MIT. That award was for “String SMT solvers for theories over strings and regular expressions.” SMT solvers are computer programs that automatically solve certain kinds of mathematical formulas. They are useful in software testing, formal verification, program analysis and synthesis. The award was transferred to Waterloo engineering when he joined the faculty in September 2012. [21 August 2013 Daily Bulletin]

The director of the Centre for Teaching Excellence, Donna Ellis, has won the 2013 Robert J. Menges Award for Outstanding Research in Educational Development, an award given out by the Professional and Organizational Development Network in Higher Education. She received the award for her conference session entitled “Why Students Avoid Risking Engagement with Innovative Instructional Methods.” The work was based on her recently defended dissertation. The award was established and first awarded at the 2000 POD conference in Vancouver. The award criteria include: “quality of the research question, design, and discussion of the results; internal coherence; alignment with the Professional & Organizational Development Network Strategic Plan; and value to advancing the field of professional development.” The award committee in particular commended Ellis’ proposal “for its rigorous research and its potential impact on the field of faculty development.” She will be presented with the award in November at the annual POD Conference in Pittsburgh. [30 July 2013 Daily Bulletin]

Tourism Cares, the tourism industry’s leading non-profit organization whose mission involves “preserving the travel industry for future generations” has announced the recipients of $2,000 scholarships to Canadian students studying travel, tourism, and hospitality in Canada. Jasveen Rattan, a PhD candidate in Recreation and Leisure Studies, was named as one of the recipients of the scholarships. The scholarships are funded by Tourism Cares, the National Tour Association, the American Society of Travel Agents, and the International Air Transport Association. Since 2005, 26 Canadians have been awarded scholarships through Tourism Cares. The academic scholarship recipients are also invited to attend the Tourism Cares Mentoring Program at the annual NTA/UMA Travel Exchange in February of 2014 in Los Angeles, California. The program gives students the opportunity to shadow professional mentors, build their professional network, and attend industry workshops. [16 July 2013 Daily Bulletin]

Waterloo’s “Ideas start here” video received a silver award in the recruitment videos category at the 2013 Council for Advancement and Support of Education (CASE) Circle of Excellence Awards, a CASE program that honours exemplary advancement programs and activities worldwide. The video competed in a field of 48 entries from universities across Canada and the US. It was selected for the award by a panel of independent judges who recognized Waterloo’s “advancement program as one that demonstrates superior accomplishments that have lasting impact, operates at the highest levels of professionalism, and delivers exceptional results.” Beth Bohnert (Marketing and Undergraduate Recruitment) developed the concept and script, Matt Regehr (Creative Services) produced it, and Aaron Miller (Communications and Public Affairs) was the narrator. [9 July 2013 CASE letter]
Tenure and Promotion of Faculty Members
The 2012/13 tenure and promotion cycle carried out under Policy 77 has resulted in the following individuals being awarded tenure and/or promoted, effective 1 July 2013.

Awarded Tenure and Promoted to Associate Professor
Marc Aucoin, Chemical Engineering
Jonathan Baugh, Chemistry
Anne Bordeleau, Architecture
Naveen Chandrashekar, Mechanical and Mechatronics Engineering
Zhongwei Chen, Chemical Engineering
Kyle Daun, Mechanical and Mechatronics Engineering
Jay Dolmage, English Language and Literature
Matthew Doyle, Economics
Richard Eibach, Psychology
Sebastian Fischmeister, Electrical and Computer Engineering
Ricardo Fukasawa, Combinatorics and Optimization
David Hawthorn, Physics and Astronomy
Daniel Henstra, Political Science
Jesse Hoey, Computer Science
Alan Huang, Accounting and Finance
Jamie Joseph, Pharmacy
Spiro Karigiannis, Pure Mathematics
Luna Khirfan, Planning
Patrick Lam, Electrical and Computer Engineering
Stéphanie Lluis, Economics
Daniel McCarthy, Environment and Resource Studies
Patrick Mitran, Electrical and Computer Engineering
Mikko Packalen, Economics
Zhu (Joe) Qian, Planning
Simarjeet Saini, Electrical and Computer Engineering
John Sbardellati, History
Theo Stratopoulos, Accounting and Finance
Xiaowu (Shirley) Tang, Chemistry
Russell Thompson, Physics and Astronomy
Rebecca Tierney-Hynes, English Language and Literature
Tara Vinodrai, Geography and Environmental Management
Johanna Wandel, Geography and Environmental Management
Shawn Wettig, Pharmacy
Dinghai Xu, Economics

Awarded Tenure
Ting Tsui, Chemical Engineering

Promoted to Professor
Terri Meyer Boake, Architecture
Krzysztof Czarnecki, Electrical and Computer Engineering
Serge D’Alessio, Applied Mathematics
James Danckert, Psychology
Hans DeSterck, Applied Mathematics
Troy Glover, Recreation and Leisure Studies
Rhona Hanning, Public Health and Health Systems
Karim Karim, Electrical and Computer Engineering
Jochen Konemann, Combinatorics and Optimization
Yu-Ru Liu, Pure Mathematics
Qing-bin Lu, Physics and Astronomy
Kshirasagar Naik, Electrical and Computer Engineering
Ashwin Nayak, Combinatorics and Optimization
Mark Seasons, Planning
Hamid Tizhoosh, Systems Design Engineering
John Yeow, Systems Design Engineering
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointments

BARNETT-COWAN, Michael, Assistant Professor, Department of Kinesiology, September 1, 2013 – June 30, 2016. Honours BA, Psychology, Minor in Philosophy, University of Guelph, 2002; MA Experimental Psychology, York University, 2005; PhD Experimental Psychology, York University, 2009. Dr. Barnett-Cowan’s research is very well aligned with the department in the research area of neuroscience. He is an excellent fit within the department with potential for collaborations across disciplines.

KIRKPATRICK, Sharon, Assistant Professor, School of Public Health and Health Systems, September 1, 2013 – June 30, 2016. Bachelor of Kinesiology, McMaster University, 1996; Bachelor of Applied Science, Honours Applied Human Nutrition, University of Guelph, 2000; Master of Health Science, Community Nutrition, University of Toronto, 2002; PhD, Nutritional Sciences, University of Toronto, 2008. Dr. Kirkpatrick’s research in the field of human nutrition policy and practice will complement the School of Public Health and Health Systems. She is a good fit to the teaching requirements for the health promotion program and the public health practice and population based health promotion programs.

MEYER, Samantha, Assistant Professor, School of Public Health and Health Systems, September 1, 2013 – June 30, 2016. Honours BA, Anthropology, McMaster University, 2006; PhD, Public Health, Flinders University, 2011. Dr. Meyers research in the fields of food security, food products and community health is a good fit with the new health promotion program and public health practice and population based health promotion programs.

Definite-term Appointments

BASKERVILLE, Bruce, Research Associate Professor, School of Public Health and Health Systems (Propel Centre for Population Health Impact), September 7, 2013 – August 31, 2016. Honours BA, Psychology, Carleton University, 1986; MA, Health Administration, University of Ottawa, 1992; PhD, Health Studies and Gerontology, University of Waterloo, 2009. Dr. Baskerville’s major responsibilities are related to research, evaluation and knowledge exchange activities to further Propel’s strategic plan and include research in the areas of tobacco control, chronic disease prevention at a population level, and policy and practice partnerships with other organizations.

RAFFERTY, Zara, Lecturer, Department of Recreation and Leisure Studies, August 1, 2013 – April 30, 2015. BA, Recreation and Leisure Studies, University of Waterloo, 2007; MA, Recreation and Leisure Studies, 2010; BEd, Faculty of Education, Wilfrid Laurier University, 2010. Ms Rafferty previously worked with the Centre for Teaching Excellence as a faculty liaison, helping instructors integrate technology into their teaching through innovative learning activities. Her previous teaching opportunities in the department included active learning opportunities such as peer-led activity-based learning. The teaching focus for this appointment will include aging and leisure, social psychology of leisure, leisure and well-being therapeutic recreation, play, creativity
and child development. She brings broad based expertise related to leisure studies coupled with some specific therapeutic recreation focus that makes her an ideal fit for this position.

**SATVAT, Elham**, Assistant Professor, School of Public Health and Health Systems, September 1, 2014 – August 30, 2016. BA, Honors Psychology, Wilfrid Laurier University, 2003; MSc, Psychology, Wilfrid Laurier University, 2004; PhD, Psychology, Wilfrid Laurier University, 2009. Dr. Satvat’s expertise is a good fit with the School in the areas of gerontology and neuroscience and her research is aligned with other faculty with whom she will be collaborating and teaching courses.

**YESSIS, Jennifer**, Research Assistant Professor, School of Public Health and Health Systems (Propel Centre for Population Health Impact), September 13, 2013 – September 12, 2016. Honours BSc, Biology and Psychology, McMaster University, 1992; MSc, Health Studies, University of Waterloo, 1995; PhD, Philosophy and Health Studies and Gerontology, University of Waterloo, 2001. Dr. Yessis’ major responsibilities are related to research, evaluation and knowledge exchange activities to further Propel’s strategic plan and include research in the areas of tobacco control, chronic disease prevention at a population level, evaluation research and evidence to action, and policy and practice partnerships with other organizations.

**Visiting Appointment**

**ROMAGOSA, Francesca**, Associate Professor, Department of Recreation and Leisure Studies, July 1, 2013 – October 31, 2013.

**Adjunct Appointments**

**Undergraduate Instruction**

**ELLIOTT, Jacobi**, Lecturer, School of Public Health and Health Systems, September 1, 2013 – December 31, 2013.


**GATES, Michelle**, Lecturer, School of Public Health and Health Systems, September 1, 2013 – December 31, 2013.

**LEIFFERS, Jessica**, Lecturer, School of Public Health and Health Systems, September 1, 2013 – December 31, 2013.


**Graduate Instruction**

**HYNDMAN, Brian**, Lecturer, School of Public Health and Health Systems, September 1, 2013 – December 31, 2013.

**REBELATTO, Steven**, Assistant Professor, School of Public Health and Health Systems, September 1, 2013 – December 31, 2013.

**Graduate Supervision**

**COSTA, Andrew**, Assistant Professor, School of Public Health and Health Systems, September 1, 2013 – December 31, 2013.
LEMIEX, Christopher, Lecturer, Department of Recreation and Leisure Studies, July 1, 2013 – June 30, 2014.

Graduate Supervision and Research
ARAMINI, Jeffery, Assistant Professor, School of Public Health and Health Systems, May 1, 2013 – April 30, 2014.


LAW, Michael, Assistant Professor, School of Public Health and Health Systems, July 1, 2013 – June 30, 2015.

WILLIS, Cameron, Assistant Professor, School of Public Health and Health Systems, August 1, 2013 – July 31, 2014.

Post-doctoral Fellow to Research Appointments
AKRAM, Sakineh, Kinesiology, May 1, 2013 – August 30, 2013.

MINAKER, Leia, Faculty of Applied Health Sciences, August 7, 2013 – August 6, 2014.

VAN OOTE GHEM, Karen, Department of Kinesiology, May 1, 2013 – August 30, 2013.

B. ADMINISTRATIVE APPOINTMENTS
BIGELOW, Philip, Associate Director, Graduate Research Programs, School of Public Health and Health Systems, July 1, 2013 – June 30, 2014.

GARCIA, John, Interim Director, School of Public Health and Health Systems, July 1, 2013 – June 30, 2014.

JESSUP, Linda, Associate Director, Undergraduate Studies, School of Public Health and Health Systems, July 1, 2013 – June 30, 2018.

MOCK, Steven, Director, RBC Retirement Centre, Department of Recreation and Leisure Studies, May 1, 2013 – April 30, 2017.

STAINES, Richard, Associate Chair, Graduate Studies, Department of Kinesiology, July 1, 2013 – June 30, 2016.

TYAS, Suzanne, Associate Dean, Research, Faculty of Applied Health Sciences, September 1, 2013 – August 31, 2014.

C. SABBATICAL LEAVES
GIANGREGORIO, Lora, Associate Professor, Department of Kinesiology, September 1, 2013 – August 31, 2014, 93.3% salary.

PRENTICE, Stephen, Associate Professor, Department of Kinesiology, September 1, 2013 – August 31, 2014, 100% salary.
For Approval by the Board of Governors

MYERS, Anita, Professor, School of Public Health and Health Systems, July 1, 2014 – December 31, 2014, 85% salary.

SABBATICAL LEAVE CHANGE

PARRY, Diana, Associate Professor, Department of Recreation and Leisure Studies, from January 1, 2014 – December 31, 2014 to January 1, 2014 – June 30, 2014, 100% salary.

Susan J. Elliott
Dean, Applied Health Sciences
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointments

MAINWARING, Cetta (BA 2005 University of Texas, MA 2006 City University, PhD 2012 University of Oxford), Assistant Professor, Department of Sociology and Legal Studies, September 1, 2013 to June 30, 2016. Dr. Mainwaring completed her PhD in International Relations from the prestigious Centre on Migration, Policy and Society at Oxford. Her expertise on migration patterns, policies, and politics in the European Union is ideally suited to our new position in Immigration/Migration/Diaspora Studies. Dr. Mainwaring is at the forefront of integrating sociological methods of field research into international relations scholarship and her new comparative research on the use of Visa regulations to manage population migrations in Europe, North America, and elsewhere is pathbreaking. She has published four refereed articles and six book chapters.

THOMPSON, Jessica (BFA 1998 York University, MFA 2011 State University of New York-Buffalo), Assistant Professor, Department of Fine Arts, September 1, 2013 to June 30, 2016. Ms Thompson’s artistic practice focuses on sound, performance and mobile technologies. Her work investigates spatial and social conditions within the urban environment. She has exhibited extensively, including in Copenhagen, New York, Hong Kong and Oslo. Ms Thompson has also taught courses in sound art at Brock University and the University of Buffalo. She has strong pedagogical administrative experience with the Ontario College of Art and Design extension program and with industry partners. Ms Thompson’s research area will complement and expand the existing digital art component of the Fine Arts program and will form a key foundation to the Stratford programs.

TINGLEY, Jane (BFA 1999 University of Manitoba, MFA 2006 Concordia University), Assistant Professor, Department of Fine Arts, September 1, 2013 to June 30, 2016. Ms Tingley has an extensive artistic practice in hybrid media with an emphasis on digital interactivity. Her work explores how the body can have meaningful interactions with technological environments or systems. She has exhibited internationally and she is now working collaboratively on a number of international projects. Ms Tingley has also worked for several years at Hexagram-Concordia, an intensive interdisciplinary research centre that fosters high-level work across Fine Arts, Computer Science, Engineering and the Humanities in new media art, design and technology. She will broaden the scope of digital art already taught in Fine Arts and will form a key foundation to the Stratford programs.

VOORHEES, Gerald (BS 2002 University of Texas-Austin, PhD 2008 University of Iowa), Assistant Professor, Department of Drama and Speech Communication, September 1, 2013 to June 30, 2016. Dr. Voorhees’ areas of expertise include critical-cultural rhetorical studies of digital media and popular culture; the intersection of identity, agency and cultural difference in digital games and new media; and contemporary rhetorical theory and criticism. He is the lead editor of two books recently published on digital games, and the author of several articles addressing digital culture, rhetoric, and neoliberal multiculturalism. Dr. Voorhees will be teaching courses at UW-Stratford, and in the Speech Communication program in the Department of Drama and Speech Communication.

Probationary-term Appointment Dates Changes

KAMINSKAIA, Svetlana, Assistant Professor, Department of French Studies, from July 1, 2010 to June 30, 2013 to July 1, 2010 to June 30, 2015.
SCHULENBERG, Jennifer, Assistant Professor, Department of Sociology and Legal Studies, from July 1, 2011 to June 30, 2014 to July 1, 2011 to June 30, 2015.

**Probationary-term Reappointments**

BLATHERWICK, David (MA 1989 Université du Québec à Montréal), Assistant Professor, Department of Fine Arts, July 1, 2013 to June 30, 2016.

THOMPSON, James (PhD 2008 Queen’s University), Assistant Professor, School of Accounting and Finance, July 1, 2013 to June 30, 2016.

WAINBERG, James (PhD 2010 University of Massachusetts), Assistant Professor, School of Accounting and Finance, July 1, 2013 to June 30, 2016.

WHITE, Katherine (PhD 2007 Brown University), Assistant Professor, Department of Psychology, July 1, 2013 to June 30, 2016.

**Definite-term Appointments**

CEGYS, Paul (BA 2008 University of Toronto, MSc 2011 Lund University), Lecturer, Department of Drama and Speech Communication, July 1, 2013 to June 30, 2016. Mr. Cegys has a MSc in Sustainability Science and Environmental Studies, a BA in Drama, and significant expertise in theatre design with a specialty in lighting design. He has worked in countries including Canada, India, Sweden, the Netherlands, Belgium, and Poland; and for theatre companies including the Canadian Stage Company, Soulpepper, Theatre Aquarius, and La Monnaie (Royal Opera House, Brussels). In addition to an extensive background in theatre design broadly, Mr. Cegys also brings a rich base of knowledge related to design aesthetics and new lighting and projection technologies. He will teach courses in theatre design, technical production, and stage management; and will contribute to productions and creative work in the department.

NGUYEN, Kim (BS 2002 Old Dominion University, PhD 2008 University of Iowa), Assistant Professor, Department of Drama and Speech Communication, September 1, 2013 to August 31, 2016. Dr. Nguyen studies the rhetoric of war, which she approaches through critical and cultural studies perspectives. More specifically, she examines the ways in which the subject is constituted through discourse, the relationship between racialized/national identity and the politics endemic in globalization, and the remembrance of war through its victimized subjects. She has published several articles addressing rhetoric, war, collective memory, and racial and national identity. Dr. Nguyen will be teaching courses in the Arts and Business program and in the Speech Communication program in the Department of Drama and Speech Communication.

NUNEZ, Camelia (BA 2005 University of Waterloo, MA 2009 University of Western Ontario, MBET 2013 University of Waterloo, PhD expected 2013 University of Western Ontario), Lecturer, Department of Spanish and Latin American Studies, September 1, 2013 to April 30, 2014. Working in the area of multilingualism and applied linguistics, Ms Nunez’ research has taken her in an exciting new direction. Working with a team of computer scientists, she has been able to apply her linguistic knowledge to create a virtual space where language learners can develop and improve upon their communicative skills in the target language by engaging in text-based conversations that closely mimic real-life situations. She is covering an eight month leave in the department, and during that time she will teach language and linguistic courses, while also running a community service learning group.
Definite-term Reappointment
MASUTANI, Koji (BA 2005), Artist in Residence, Dean of Arts, July 1, 2013 to August 31, 2014.

Adjunct Appointments

Instruction
BUCHSPIES, Sebastian, Lecturer, Department of Germanic and Slavic Studies, September 1, 2013 to April 30, 2014.

FERRARESE, Patrizia, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

FLANIK, William, Lecturer, Department of Political Science, September 1, 2013 to December 31, 2013.

GREWAL, Jyothika, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

HERITZ, Joanne, Lecturer, Department of Political Science, September 1, 2013 to December 31, 2013.

JONES, Catherine, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

KHOLDI, Amir-Shahram, Lecturer, Department of History, September 1, 2013 to December 31, 2013.

KODOLOV, Oleg, Lecturer, Department of Political Science, September 1, 2013 to December 31, 2013.

LONEY, Grace, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

QAISER, Shadab, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

RAY, Nicholas, Lecturer, Department of Philosophy, September 1, 2013 to December 31, 2013.

RUMPF, Britta, Lecturer, Department of Germanic and Slavic Studies, September 1, 2013 to April 30, 2014.

ZAFAR, Aazar, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

Graduate Supervision
OCHOCKA, Joanna, Associate Professor, Department of Sociology and Legal Studies, September 1, 2013 to August 31, 2016.

STENTON, Douglas, Assistant Professor, Department of Anthropology, July 1, 2013 to June 30, 2016.
Adjunct Reappointments

Instruction

ADMAS, Russell, Assistant Professor, Department of Anthropology, September 1, 2013 to December 31, 2013.

AMARSINGAM, Amarnath, Lecturer, Department of Sociology and Legal Studies, September 1, 2013 to December 31, 2013.

ANDRES, Greg, Lecturer, Department of Philosophy, September 1, 2013 to December 31, 2013.

ATOCHE, Cristina, Lecturer, Department of Spanish and Latin American Studies, September 1, 2013 to December 31, 2013.

AFROS, Elena, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

BAINS, Navdeep, Lecturer, Department of Political Science, July 1, 2013 to June 30, 2014.

BASHIR, Mohsin, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

BIRKE, Lisa, Lecturer, Department of Fine Arts, September 1, 2013 to December 31, 2013.

BRIGGS, Catherine, Assistant Professor, Department of History, September 1, 2013 to December 31, 2013.

CALDERON-CALLEJAS, Betty, Lecturer, Department of Spanish and Latin American Studies, September 1, 2013 to December 31, 2013.

CORRIGAN, Alan, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

Cyr, Dylan, Lecturer, Department of History, September 1, 2013 to December 31, 2013.

DAGG, Anne Innis, Associate Professor, Independent Studies, September 1, 2013 to August 31, 2014.

DEVEAU, Danielle, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

DIGNAN, Paul, Lecturer, Department of Fine Arts, September 1, 2013 to December 31, 2013.

DONOVAN, Anne-Marie, Lecturer, Department of Drama and Speech Communications, September 1, 2013 to December 31, 2013.

DUCHARMЕ, Robert, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

FATIMA, Nafeez, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

FLERAS, Augie, Professor, Department of Sociology and Legal Studies, September 1, 2013 to December 31, 2013.
GEORGE, Ryan, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

GINGRICH, Nadine, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

HA, David, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

HARRIGAN, Patrick (Distinguished Professor Emeritus), Professor, Department of History, September 1, 2013 to December 31, 2013.

HERAUF, Herb, Lecturer, School of Accounting and Finance, May 1, 2013 to August 31, 2013.

HILL, Heather, Lecturer, Department of Drama and Speech Communication, September 1, 2013 to December 31, 2013.

HOOD, Kevin, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

JAIMES-DAMINGUEZ, Luis, Lecturer, Department of Spanish and Latin American Studies, September 1, 2013 to December 31, 2013.

JAVED, Hira, Lecturer, Faculty of Arts (Stratford Programs), September 1, 2013 to December 31, 2013.

JEFFERSON, Robert, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

KHIMJEE, Husein, Assistant Professor, Department of Religious Studies, September 1, 2013 to April 30, 2014.

KOROVKIN, Tanya, Professor, Department of Political Science, September 1, 2013 to December 31, 2013.

KRELLER, Paul, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

KUMASE, Wokia, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

LAIKEN, Stan, Professor, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

LAM, Ibis, Lecturer, Department of Spanish and Latin American Studies, September 1, 2013 to December 31, 2013.

LIAQAT, Zara, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

LIN, David, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

MALONE, Toby, Lecturer, Department of Drama and Speech Communication, September 1, 2013 to December 31, 2013.
MANNING, Thomas, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

MATU, Anca, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

MCARTHUR, Kathryn, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

MCCARLEY, Bruce, Lecturer, School of Accounting and Finance, May 1, 2013 to August 31, 2013.

MCCAULEY, Eva, Lecturer, Department of Fine Arts, September 1, 2013 to December 31, 2013.

MCCLINCHY, Barry, Associate Professor, Department of Sociology and Legal Studies, September 1, 2013 to June 30, 2014.

MCGEE, Edward, Professor, Independent Studies, September 1, 2013 to August 31, 2014.

MEADOWS, Craig, Lecturer, Department of Fine Arts, September 1, 2013 to December 31, 2013.

MILINYKEVYCH, Viktoriya, Lecturer, Department of Germanic and Slavic Studies, September 1, 2013 to December 31, 2013.

MOTA, Fatima, Lecturer, Department of Spanish and Latin American Studies, September 1, 2013 to December 31, 2013.

NABERT-CHUBB, Rebecca, Lecturer, Department of Political Science, September 1, 2013 to December 31, 2013.

OLDHAM, Andrew, Lecturer, School of Accounting and Finance, May 1, 2013 to August 31, 2013.

RAMIREZ, Helen, Lecturer, Women’s Studies, September 1, 2013 to December 31, 2013.

RICHARDS, Edward, Assistant Professor, Department of Philosophy, September 1, 2013 to December 31, 2013.

RIVA, Lori, Lecturer, Department of Fine Arts, September 1, 2013 to December 31, 2013.

ROGOZYNISKI, Daniel, Lecturer, School of Accounting and Finance, September 1, 2013 to December 31, 2013.

ROTH, Wendy, Lecturer, Department of Economics, September 1, 2013 to December 31, 213.

SCHWEITZER, David, Assistant Professor, Department of History, September 1, 2013 to December 31, 2013.

SILVER, Cassandra, Lecturer, Department of Drama and Speech Communication, September 1, 2013 to December 31, 2013.

SLETHAUG, Gordon, Professor, Department of English Language and Literature, September 1, 2013 to December 31, 2013.
SNYDER, Carrie, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

STUBBS, Andy, Lecturer, Department of English Language and Literature, September 1, 2013 to December 31, 2013.

STUMPF, Andrew, Lecturer, Department of Philosophy, September 1, 2013 to December 31, 2013.

TRUONG, Khuong, Lecturer, Department of Economics, September 1, 2013 to December 31, 2013.

WATSON, Patrick, Lecturer, Department of Sociology and Legal Studies, September 1, 2013 to December 31, 21013.

Miscellaneous (research, consultations, etc.)

EATON, Sarah, Assistant Professor, Department of Political Science, August 1, 2013 to September 30, 2014.

FLERAS, Augie, Professor, Department of Sociology and Legal Studies, September 1, 2013 to August 31, 2016.

KEEPING, Lisa, Associate Professor, Department of Psychology, September 1, 2012 to August 31, 2014.

SMITH, Larry, Associate Professor, Department of Economics, May 1, 2013 to April 30, 2014.

Visiting Appointments

BOERO, Dina, Visiting Researcher, Department of Classical Studies, September 1, 2013 to April 30, 2014.

BURIC, Helena, Visiting Lecturer, Department of Germanic and Slavic Studies, September 1, 2013 to April 30, 2014.

YU, Yingmin, Visiting Scholar, School of Accounting and Finance, September 1, 2013 to February 1, 2014.

Post-doctoral Fellow Appointment

FRANCHI, Roberta, Department of Classical Studies, September 1, 2013 to April 30, 2014.

Staff to Faculty Appointments

GLOVER, Adam, Lecturer, Department of Drama and Speech Communication (Stratford Programs), September 1, 2013 to December 31, 2013.

THOMPSON, Andrew, Lecturer, Department of Political Science, September 1, 2013 to December 31, 2013.

Graduate Student to Part-time Lecturer Appointments

AMERY, Behnoush, Department of Economics, September 1, 2013 to December 31, 2013.

EVANS, Natalie, Department of Philosophy, May 1, 2013 to August 31, 2013.
FLAGLER, Jenny, Department of Sociology and Legal Studies, September 1, 2013 to December 31, 2013.

HOLUKOFF, Kurt, Department of Philosophy, September 1, 2013 to December 31, 2013.

OYSTRAKH, Mykhaylo, Department of Economics, September 1, 2013 to December 31, 2013.

PLANTE, Courtney, Department of Psychology, September 1, 2013 to December 31, 2013.

SMITHWICK, Neal, Department of Sociology and Legal Studies, September 1, 2013 to December 31, 2013.

TSE, Crystal, Department of Psychology, September 1, 2013 to December 31, 2013.

VALTCHANOV, Deltcho, Department of Psychology, September 1, 2013 to December 31, 2013.

ZELAYA, Mauricio, Department of Economics, September 1, 2013 to December 31, 2013.

B. ADMINISTRATIVE APPOINTMENTS

FRASER, Doreen, Associate Chair, Graduate Studies, Department of Philosophy, July 1, 2013 to June 30, 2014.

GORMAN, Daniel, Associate Chair, Graduate Studies, Department of History, July 1, 2013 to June 30, 2014.

HAYES, Geoffrey, Associate Chair, Undergraduate Studies, Department of History, September 1, 2013 to August 31, 2014.

OREND, Brian, Associate Chair, Undergraduate Studies, Department of Philosophy, July 1, 2013 to June 30, 2014.

RYAN, Robert, International Exchange Officer, Dean of Arts Office, July 1, 2013 to June 30, 2014.

ADMINISTRATIVE APPOINTMENT DATE CHANGES

DEA, Shannon, Associate Chair, Undergraduate Studies, Department of Philosophy, from July 1, 2011 to June 30, 2014 to July 1, 2011 to June 30, 2013.

OREND, Brian, Associate Chair, Graduate Studies, Department of Philosophy, from July 1, 2012 to June 30, 2015 to July 1, 2012 to June 30, 2013.

C. RESIGNATION

EATON, Sarah, Assistant Professor, Department of Political Science, effective July 31, 2013.

D. SABBATICAL LEAVES

For Approval by the Board of Governors

ANDISON, Lois, Associate Professor, Department of Fine Arts, January 1, 2014 to June 30, 2014, 85% salary.

ITIER, Roxanne, Assistant Professor, Department of Psychology, January 1, 2014 to June 30, 2014, full salary.
KIRTON, Doug, Associate Professor, Department of Fine Arts, January 1, 2014 to December 31, 2014, 85% salary.

MCARTHUR, Murray, Associate Professor, Department of English Language & Literature, January 1, 2014 to June 30, 2014, full salary.

MCGUIRK, Kevin, Associate Professor, Department of English Language & Literature, January 1, 2014 to December 31, 2014, full salary.

NIMUBONA, Alain-Désiré, Assistant Professor, Department of Economics, March 1, 2014 to August 31, 2014, 85% salary.

O’GORMAN, Marcel, Associate Professor, Department of English Language & Literature, January 1, 2014 to June 30, 2014, 85% salary.

ROBERTS, Julia, Associate Professor, Department of History, January 1, 2014 to June 30, 2014, 85% salary.

TURRI, John, Assistant Professor, Department of Philosophy, January 1, 2014 to June 30, 2014, full salary.

WHITE, Katherine, Assistant Professor, Department of Psychology, January 1, 2014 to June 30, 2014, full salary.

Douglas M. Peers
Dean, Arts
A. APPOINTMENTS

Tenured
BERMAN, Ila, Professor, School of Architecture, September 1, 2013. Doctor of Design in Architecture Harvard University 1993; Master of Design Studies in Architecture Harvard University 1991; Bachelor of Architecture Carleton University 1983. The School of Architecture welcomes its new Director Ila Berman who holds a doctorate from Harvard University and was formerly director of the School of Architecture at California College of Art. Her research and writing in contemporary architectural and urban theory adds strength in contemporary design and criticism to a program with a deep commitment to the culture of architecture. Her work in outreach projects reinforces the role of Waterloo architecture in the urban, cultural and economic development of Cambridge and Waterloo Region.

Probationary-term Appointments
BAJCSY, Michal, Assistant Professor, Department of Electrical & Computer Engineering and Institute for Quantum Computing, January 1, 2014 – June 30, 2017. PhD Harvard University 2010; MSc Massachusetts Institute of Technology 2006; BS Harvard University 2001. Dr. Bajcsy was with the MIT-Harvard Center for Ultracold Atoms during his graduate studies. In 2010 he joined Stanford University as a postdoctoral scholar. He is a renowned expert in nano-photonic structure, quantum and nonlinear optics. Dr. Bajcsy has made strong contributions to laser-based atom cooling and has demonstrated all-optical switching with few hundred photon pulses.

EL KHAFIF, Mona, Associate Professor, School of Architecture, September 1, 2013 – June 30, 2016. Dr. techn. (PhD) Technical University of Vienna 2008; Dipl.Ing. (BArch/MArch) RWTH Aachen, Germany 1996. Dr. El Khafif has been a practicing architect involved in some of the largest cultural projects in Europe. Her current academic research operates at multiple scales, examining the interdisciplinary aspects of urban regeneration strategies and urban ecologies. She has been exploring the use of digital information systems in urban and architectural design. Dr. El Khafif’s experience in developing research programs and methods will be of tremendous value to the students in the Master of Architecture program.

CHILANA, Parmit, Assistant Professor, Department of Management Sciences, September 1, 2013 – June 30, 2016. PhD University of Washington 2013; MS University of Illinois at Urbana-Champaign 2006; BSc Simon Fraser University 2005. Dr. Chilana’s research area is human computer interaction. She has designed and tested a system for library information help as a part of her PhD dissertation. Dr. Chilana will be teaching a graduate and an undergraduate course in her area of expertise.

Probationary-term Reappointments

DIMITROV, Stanko, Assistant Professor, Department of Management Sciences, July 1, 2013 – June 30, 2016. PhD University of Michigan 2010; MSc University of Michigan 2006; BSc University of Michigan 2004.

LI, Yuning, Associate Professor, Department of Chemical Engineering, July 1, 2013 – June 30, 2016. PhD Japan Advanced Institute of Science and Technology, Japan 1999; MS Dalian University of Technology, China 1988; BS Dalian University of Technology 1985.
RICARDEZ-SANDOVAL, Luis Alberto, Assistant Professor, Department of Chemical Engineering, July 1, 2014 – June 30, 2017. PhD University of Waterloo 2008; MASc Instituto Tecnologico de Celaya, Mexico 2000, BASc Instituto Tecnologico de Orizaba 1997.

Definite-term Appointments
BARLATT, Ada, Assistant Professor, Department of Management Sciences, September 1, 2013 – August 31, 2014. PhD University of Michigan 2009; MSE University of Michigan 2006; BS Rutgers, The State University of New Jersey 2004. Dr. Barlatt’s area of expertise is resource planning. She has experience as an instructor in many areas of operations research. She was an assistant professor in management sciences for three years. She has continued supervising students and teaching for us.

KASHEF, Rasha, Lecturer, Department of Management Sciences, September 1, 2013 – August 31, 2014. PhD University of Waterloo 2008; MSc Arab Academy for Science and Technology 2004; BSc Alexandria University 2001. Dr. Kashef has background in electrical and software engineering. She has been an instructor in the math faculty as well as in management sciences. Dr. Kashef is quite capable of teaching a variety of operation research and information system courses.

LEE, Czang-Ho, Research Assistant Professor, Department of Electrical & Computer Engineering, June 1, 2013 – July 31, 2014. PhD University of Waterloo 2006; MSc Kangwon National University, South Korea 1998; BSc Kangwon National University 1996. Dr. Lee is a specialist in electronic materials growth and device processing with extensive experience with silicon-based materials and devices. Prior to rejoining the University of Waterloo in 2012, he was a senior research engineer for Samsung performing research in high-performance transistors and photovoltaic devices. He is currently leading projects in the development of high performance OLED displays and nanowire photovoltaics in the Giga-to-Nanoelectronics Lab and Prof. William Wong’s group.

Definite-term Reappointment
HU, Anming, Research Assistant Professor, Department of Mechanical & Mechatronics Engineering, January 1, 2014 – December 31, 2014.

Visiting Appointments
AKBARI, Vajihe, Scholar, Department of Chemical Engineering, August 1, 2013 – February 15, 2014.


AYDIN, Osman Musa, Scholar, Department of Mechanical & Mechatronics Engineering, June 1, 2013 – August 31, 2013.


CELENTE, Gleison, Scholar, Department of Chemical Engineering, May 1, 2013 – August 15, 2013.


CHANG, Ying, Scholar, Department of Mechanical & Mechatronics Engineering, September 1, 2013 – August 31, 2014.


CHOTVISUT, Yada, Scholar, Department of Chemical Engineering, August 1, 2013 – December 31, 2013.

EL-HAG, Ayman, Associate Professor, Department of Electrical & Computer Engineering, June 10, 2013 – September 10, 2013.

EL-SHARKAWY, Rania, Associate Professor, Department of Electrical & Computer Engineering, August 1, 2013 – August 31, 2013.

FINAS, Mathieu, Scholar, Department of Civil & Environmental Engineering, September 1, 2013 – December 31, 2103.


HE, Yinghui, Scholar, Department of Chemical Engineering, June 3, 2013 – August 31, 2013.


HUO, Huan (Angela), Associate Professor, Department of Management Sciences, January 1, 2013 – April 30, 2014.

JI, Yong-Sheng, Scholar, Department of Mechanical & Mechatronics Engineering, June 1, 2013 – May 31, 2014.

JAKSUVEJ, Jiradee, Scholar, Department of Chemical Engineering, August 1, 2013 – December 31, 2013.

JIN, Yang, Scholar, Department of Mechanical & Mechatronics Engineering, September 1, 2013 – August 31, 2014.

KAMALI, Mahtab, Researcher, Department of Electrical & Computer Engineering, August 1, 2013 – April 25, 2014.

LARSON, Nicole, Scholar, Department of Civil & Environmental Engineering, June 1, 2013 – August 30, 2013.

LIU, Guihua, Scholar, Department of Chemical Engineering, July 7, 2013 – February 7, 2014.

LIU, Jiange, Researcher, Department of Systems Design Engineering, September 1, 2013 – August 31, 2015.

LIU, Yibo, Scholar, Department of Chemical Engineering, July 9, 2013 – July 8, 2014.

LIU, Zhe-Fu, Scholar, Department of Chemical Engineering, September 1, 2013 – August 31, 2014.


LUMMAETEE, Kanjana, Scholar, Department of Chemical Engineering, August 1, 2013 – December 31, 2013.

MALAIBARI, Zuhair, Scholar, Department of Chemical Engineering, June 1, 2013 – August 31, 2013.


NADAL, Jeremy, Scholar, Department of Electrical & Computer Engineering, June 1, 2013 – September 1, 2013.


QUINN, Jesse, Scholar, Department of Chemical Engineering, June 17, 2013 – July 31, 2013.


SCHULZE, Steffan, Scholar, Department of Chemical Engineering, September 1, 2013 – March 31, 2014.

SHI, Zhiguo, Associate Professor, Department of Electrical & Computer Engineering, November 15, 2013 – May 14, 2014.


SUN, Shaofan, Scholar, Department of Chemical Engineering, September 1, 2013 – August 31, 2015.


WANG, Hairong, Scholar, Department of Chemical Engineering, September 1, 2013 – August 31, 2014.


WEI, Guobing, Scholar, Department of Mechanical & Mechatronics Engineering, September 1, 2013 – February 28, 2015.

WU, Fanhong, Scholar, Department of Chemical Engineering, July 31, 2013 – March 31, 2014.

WU, Michael, Scholar, Department of Chemical Engineering, May 1, 2013 – August 31, 2013.

YU, Zhao, Scholar, Department of Civil & Environmental Engineering, June 1, 2013 – June 30, 2013.

ZHANG, Jian, Scholar, Department of Management Sciences Engineering, September 1, 2013 – August 31, 2014.

ZHANG, Lei, Scholar, Department of Chemical Engineering, July 8, 2013 – July 7, 2016.

ZHANG, Zhiqiang, Scholar, Department of Mechanical & Mechatronics, September 1, 2013 – August 31, 2014.

ZHAO, Xinxin, Scholar, Department of Systems Design Engineering, September 1, 2013 – August 31, 2014.

ZHOU, Yong, Scholar, Department of Chemical Engineering, June 10, 2013 – September 15, 2013.


Visiting Reappointments
LIU, Yan, Scholar, Department of Chemical Engineering, May 1, 2013 – June 30, 2013.


YANG, Xiaohua, Scholar, Department of Management Sciences, April 1, 2013 – April 30, 2013.

Adjunct Appointments

Instructio


BETTIO, Walter, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

BRESLER, Liana, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

DAL CASTEL, Charles, Lecturer, Department of Chemical Engineering, May 1, 2013 – August 31, 2013.

DAULT, Gary, Associate Professor, School of Architecture, May 1, 2013 – August 31, 2013.

LEVITT, Janna, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

MCNAIR, Robert, Lecturer, School of Architecture, May 1, 2013 – August 31, 2013.

NEALE, Adam, Lecturer, Department of Electrical & Computer Engineering, September 1, 2013 – December 31, 2013.

SCHELLINGERHOUDT, David, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

SCOTT, Tim, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

SHELLEY, Elise, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

SPREMULI, Matthew, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

SUGDEN, Kevin, Lecturer, School of Architecture, May 1, 2013 – August 31, 2013.

SYME, Paul, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

THOMPSON, Hugh, Lecturer, School of Architecture, May 1, 2013 – August 31, 2013.

VERDE, Marco, Assistant Professor, School of Architecture, September 1, 2012 – December 30, 2012.

WOODWORTH, William, Lecturer, School of Architecture, May 1, 2013 – August 31, 2013.

Graduate Supervision

NAYLOR, David, Professor, Department of Mechanical & Mechatronics Engineering, September 1, 2013 – August 31, 2016.

Graduate Supervision and Research

DAIN, Steven, Associate Professor, Department of Electrical & Computer Engineering, June 1, 2013 – May 31, 2016.

SOARES, Joao, Professor, Department of Chemical Engineering, July 1, 2013 – June 30, 2015.

Research

CICCOTELLI, William, Assistant Professor, Department of Management Sciences, May 1, 2013 – April 30, 2017.

OWEN, William, Assistant Professor, Department of Mechanical & Mechatronics Engineering, September 1, 2013 – August 31, 2016.

Adjunct Reappointments

Instruction

AL-HAMMOUD, Rania, Lecturer, Department of Civil & Environment Engineering, September 1, 2013 – December 31, 2013.

CHANG, Wayne, Lecturer, Conrad Centre for Business, Entrepreneurship and Technology, Faculty of Engineering, May 1, 2013 – August 31, 2013.

GRIFFITHS-FULTON, Karl, Lecturer, Department of Systems Design Engineering, September 1, 2013 – December 31, 2013.

HUNT, Lloyd, Associate Professor, School of Architecture, May 1, 2013 – August 312, 2013.


LANGELIER, Brian, Lecturer, Department of Mechanical & Mechatronics Engineering, May 1, 2013 – August 31, 2013.

LUZAR, Briggitte, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

ROSS, Barbara, Assistant Professor, School of Architecture, May 1, 2013 – August 31, 2013.

Graduate Supervision

ALVAREZ-CUENCA, Manuel, Professor, Department of Chemical Engineering, June 1, 2013 – May 31, 2016.

Graduate Supervision and Research

ATTALLA, Mohamed, Researcher, Department of Civil & Environmental Engineering, August 1, 2013 – July 31, 2015.

KOUWEN, Nick, Professor, Department of Civil & Environmental Engineering, July 1, 2013 – June 30, 2106.

KOMLJENOVIC, Dragan, Professor, Department of Civil & Environmental Engineering, July 1, 2013 – June 30, 2015.
Cross Appointments
CROISET, Eric, Professor, Department of Chemical Engineering to the Department of Mechanical & Mechatronics Engineering, June 1, 2013 – May 31, 2016.

IOANNIDIS, Marios, Professor, Department of Chemical Engineering to the Department of Earth and Environmental Sciences, Faculty of Science, January 1, 2013 – December 31, 2104.

PRITZKER, Mark, Professor, Department of Chemical Engineering to the Department of Mechanical & Mechatronics Engineering, May 1, 2013 – April 30, 2016.

SAFAVI-Naeini, Safieddin, Professor, Department of Electrical & Computer Engineering to the Department of Mechanical & Mechatronics Engineering, May 1, 2013 – April 30, 2016.

Graduate Student to Part-time Lecturer Appointment
MATHEW, Manoj, Department of Chemical Engineering, September 1, 2013 – December 31, 2013.

B. ADMINISTRATIVE APPOINTMENTS
ARMITAGE, Howard, Associate Director, Virtual Incubation Program (VIP), Conrad Centre for Business, Entrepreneurship & Technology, Faculty of Engineering, November 1, 2012 – October 31, 2013.

BERMAN, Ila, Director, School of Architecture, January 1, 2014 – December 31, 2017.

CASCANTE, Giovanni, Associate Chair, Graduate Studies, Department of Civil & Environmental Engineering, July 1, 2013 – June 30, 2016.

GAUDET, Vincent, Associate Chair, Undergraduate Studies, Department of Electrical & Computer Engineering, September 1, 2013 – August 31, 2016.

HELLINGA, Bruce, Associate Dean, Graduate Studies and International Agreements, July 1, 2013 – June 30, 2016.


UNGER, Andre, Chair, Geological Engineering Board, Department of Civil & Environmental Engineering, July 1, 2013 – April 30, 2016.

ADMINISTRATIVE REAPPOINTMENTS
ANDERSON, Bill, Director, Admissions, Undergraduate Studies, Faculty of Engineering January 1, 2014 – December 31, 2016.

HALDENBY, Eric, Director, School of Architecture, July 1, 2013 – December 31, 2013.

JAYRAM, Shesha, Director, High Voltage Lab, Department of Electrical & Computer Engineering, May 1, 2013 – April 30, 2016.

SAFAYENI, Frank, Chair, Department of Management Sciences, September 1, 2013 – May 31, 2014.


C. RESIGNATION
JERVIS, Eric, Professor, Department of Chemical Engineering, August 31, 2013.

D. RETIREMENT
SEDRA, Adel, Professor, Department of Electrical & Computer Engineering, July 1, 2013.

E. SABBATICAL LEAVES
KOFMAN, Jonathan, Associate Professor, Department of Systems Design Engineering, September 1, 2013 – August 31, 2014, 85% salary.

For Approval by the Board of Governors
BRODLAND, Wayne, Professor, Department of Civil & Environmental Engineering, January 1, 2014 – December 31, 2014, 95.4% salary.

GARG, Siddharth, Assistant Professor, Department of Electrical & Computer Engineering, January 1, 2014 – June 30, 2014, 100% salary.

GORBET, Maude, Assistant Professor, Department of Systems Design Engineering, January 1, 2014 – June 30, 2014, 100% salary.

LEGGE, Raymond, Professor, Department of Chemical Engineering, January 1, 2014 – June 30, 2014, 100% salary and January 1, 2015 – June 30, 2015, 100% salary.

MCKAY, Kenneth, Professor, Department of Management Sciences, January 1, 2014 – December 31, 2014, 100% salary.


SAINI, Simarjeet, Associate Professor, Department of Electrical & Computer Engineering, January 1, 2014 – December 31, 2014, 85% salary.

TSUI, Ting, Associate Professor, Department of Chemical Engineering, January 1, 2014 – December 31, 2014, 85% salary.

WARD, Paul, Associate Professor, Department of Electrical & Computer Engineering, January 1, 2014 – June 30, 2014, 100% salary.

Pearl Sullivan
Dean, Engineering
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointments

ASANIN DEAN, Jennifer, Assistant Professor, School of Planning, September 1, 2013 to June 30, 2016. [HBA, University of Toronto, 2006; MA, University of Toronto, 2007; PhD, McMaster University, 2011.] Dr. Dean’s work focuses on the relationship between environment and human health, with particular attention to marginalized populations (recent immigrants, at-risk youth) and is, therefore, a great fit in one of the School’s key themes – Environment and Health. Her appointment will contribute to the expansion and enhancement of research currently underway by colleagues in the School with her expertise in the public health dimensions of planning practice and research.

MITCHELL, Carrie, Assistant Professor, School of Planning, September 1, 2013 to June 30, 2016. [HBA, University of Guelph, 2000; MSc, University of Toronto, 2003; PhD University of Toronto, 2008.] Dr. Mitchell’s doctoral research focused on the impacts of urban change on informal labour, exploring how shifts to the political economy and built environment (in Hanoi, Vietnam) have altered the lives and livelihood of informal waste recyclers in the city. Her research interests lie with exploring how adaptation planning intersects with urban sustainability through the lens of urban services and she brings an international focus to her work which is of significant value to the School.

THISTLETHWAITE, Jason, Assistant Professor, School of Environment, Enterprise and Development, July 1, 2014 to June 30, 2017. [HBA, University of Western Ontario, 2005; MA, University of Western Ontario, 2006; PhD, University of Waterloo, 2011.] Dr. Thistlethwaite has held a Postdoctoral Fellowship (since his graduation in 2011) in Climate Change Adaptation and Financial Risk at the Institute for Catastrophic Loss Reduction at the University of Western Ontario. He serves as Director of the Climate Change Adaptation Project, an important national initiative identifying Canada’s climate change adaptation priorities, and his research interests are focused within the fields of public policy, international relations, business-government relations and corporate social responsibility. Dr. Thistlethwaite’s principal focus on government-business interactions in relation to climate change policy is a very strong fit in SEED’s existing teaching and research areas.

Visiting Appointment

DORADO-BANACLOCHE, Silvia, Associate Professor, School of Environment, Enterprise and Development, September 1, 2013 to June 30, 2014.

Adjunct Appointments

Instruction

ANTADZE, Nino, Lecturer, School of Planning, September 1, 2013 to December 31, 2013.

BRADT, Tyler, Studio Facilitator, School of Planning, September 1, 2013 to December 31, 2013.

ESOPENKO, Megan, Studio Facilitator, School of Planning, September 1, 2013 to December 31, 2013.

FERGUSON, Philip, Lecturer, School of Planning, September 1, 2013 to December 31, 2013.

FREIBURGER, Scott, Lecturer, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.
FRIESEN, Milton, Lecturer, School of Planning, September 1, 2013 to December 31, 2013.

HADFIELD, Chris, Professor, Faculty of Environment, September 1, 2013 to August 31, 2016.

HOOYKAAS, Amanda, Lecturer, Faculty of Environment, September 1, 2013 to December 31, 2013.

JOHANNSON, Lynn, Lecturer, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

MALLECK, Geoffrey, Lecturer, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

MENDOZA, Julio, Lecturer, School of Planning, September 1, 2013 to December 31, 2013.

MOORE, Leith, Lecturer, School of Planning, September 1, 2013 to December 31, 2013.

MORTSCH, Linda, Assistant Professor, Department of Geography and Environmental Management, July 1, 2013 to June 30, 2016.

NATHWANI, Jatin, Professor, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

RAIMBAULT, Beverly, Lecturer, Faculty of Environment, September 1, 2013 to December 31, 2013.

RATCLIFFE, William, Assistant Professor, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

ROBERTS, John, Lecturer, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

Graduate Supervision

DEVLIN, John, Associate Professor, Department of Geography and Environmental Management, May 1, 2013 to April 30, 2016.

HUNSINGER, Jeremy, Assistant Professor, School of Planning, November 1, 2012 to September 30, 2015.

MALLECK, Geoffrey, Lecturer, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

Graduate Supervision and Research

HALL, Brent, Professor, School of Planning, September 1, 2013 to August 31, 2016.

MORTSCH, Linda, Assistant Professor, Department of Geography and Environmental Management, July 1, 2013 to June 30, 2016.

Research

HADFIELD, Chris, Professor, Faculty of Environment, September 1, 2013 to August 31, 2016.

Cross Appointments

DIAS, Goretty, Assistant Professor, School of Environment, Enterprise and Development to the Department of Environment and Resource Studies, July 1, 2013 to June 30, 2018.
EMELKO, Monica, Associate Professor, Department of Civil and Environmental Engineering to the School of Planning, January 1, 2013 to December 31, 2016.

SCOTT, K. Andrea, Assistant Professor, Department of Systems Design Engineering to the Department of Geography and Environmental Management, July 1, 2013 to June 30, 2016.

**Change in Appointment**
McLEVEY, John, Assistant Professor, Faculty of Environment (Centre for Knowledge Integration), probationary-term appointment start date changed from September 1, 2013 to July 1, 2013 (ending June 30, 2016.)

**Graduate Student to Part-time Lecturer Appointments**
ANDRACHUK, Mark, Department of Geography and Environmental Management, September 1, 2013 to December 31, 2013.

DAVIDSON, Seanna, School of Environment, Enterprise and Development, September 1, 2013 to December 31, 2013.

GARTNER, Candice, Department of Geography and Environmental Management, September 1, 2013 to December 31, 2013.

SILVER, Amber, Department of Geography and Environmental Management, September 1, 2013 to December 31, 2013.

SURDU, Cristina, Department of Geography and Environmental Management, September 1, 2013 to December 31, 2013.

**B. ADMINISTRATIVE APPOINTMENT**
SHIPLEY, Robert, Acting Director, School of Planning, July 1, 2013 to December 31, 2013.

**C. ADMINISTRATIVE REAPPOINTMENTS**
JERNIGAN, Ed, Director, Centre for Knowledge Integration, September 1, 2013 to August 31, 2014.

JERNIGAN, Ed, Director, Waterloo Unlimited, September 1, 2013 to July 31, 2016.

**D. SABBATICAL LEAVE**
*For Approval by the Board of Governors*
CLARKE, Amelia, Assistant Professor, School of Environment, Enterprise and Development, January 1, 2014 to June 30, 2014, 100% salary.

André Roy
Dean
A. APPOINTMENTS

Probationary-term Reappointments

HOLMES, Reid (BSc 2002, MSc 2004, both from the University of British Columbia; PhD 2008, University of Calgary), Assistant Professor, David R. Cheriton School of Computer Science, July 1, 2013 – June 30, 2016.

KATZ, Eric (BS 1999, Ohio State University; PhD 2004, Stanford University), Assistant Professor, Dept. of Combinatorics and Optimization, July 1, 2014 – June 30, 2017.

Definite-term Appointment

GAO, Pu, Research Assistant Professor, Dept. of Combinatorics and Optimization, May 1, 2014 – April 30, 2017. Dr. Gao will teach one course per year and conduct independent research and supervise graduate students.

Definite-term Reappointments

ALENCAR, Paulo, Research Professor, David R. Cheriton School of Computer Science, July 1, 2013 – June 30, 2015.

ROH, Patrick, Lecturer, Dept. of Combinatorics and Optimization, May 1, 2014 – April 30, 2015.

SAFAYENI, Suzanne, Lecturer, David R. Cheriton School of Computer Science, September 1, 2014 – August 31, 2016.

Visiting Appointments


NIELSEN, Jesper, Researcher, David R. Cheriton School of Computer Science, October 21, 2013 – April 18, 2014.


Adjunct Appointments

Instruction

Research
REICHARDT, Ben, Assistant Professor, David R. Cheriton School of Computer Science, February 2, 2013 – June 30, 2015.

Adjunct Reappointments

Instruction
BROWN, Janice, Lecturer, David R. Cheriton School of Computer Science, September 1, 2013 – December 31, 2013.
GAO, Pu, Lecturer, Dept. of Combinatorics and Optimization, September 1, 2013 – December 31, 2013.
IKOVIC, Igor, Lecturer, David R. Cheriton School of Computer Science, September 1, 2013 – December 31, 2013.
KOU, Tian, Lecturer, David R. Cheriton School of Computer Science, September 1, 2013 – December 31, 2013.
LANCTOT, Kevin, Lecturer, David R. Cheriton School of Computer Science, September 1, 2013 – December 31, 2013.
SAKHNINI, Victoria, Lecturer, David R. Cheriton School of Computer Science, September 1, 2013 – December 31, 2013.
WALGATE, Jon, Lecturer, Dept. of Combinatorics and Optimization, September 1, 2013 – December 31, 2013.
Research

HOFFMAN, Peter, Professor, Dept. of Pure Mathematics, September 1, 2013 – August 31, 2016.

LIPSHITZ, Stanley, Professor, Dept. of Applied Mathematics, June 1, 2013 – May 31, 2016.

McLENAGHAN, Raymond, Professor, Dept. of Applied Mathematics, September 1, 2013 – August 31, 2016.

Graduate Committee

METZLER, Adam, Assistant Professor, Dept. of Statistics and Actuarial Science, August 1, 2013 – July 31, 2016.

Cross Appointments

LUTKENHAUS, Norbert, Professor, Dept. of Physics and Astronomy /IQC to the Dept. of Applied Mathematics, May 1, 2013 – April 30, 2016.


Cross Reappointments

BEDI, Sanjeev, Professor, Dept. of Mechanical and Mechatronics Engineering to the David R. Cheriton School of Computer Science, March 1, 2012 – June 30, 2015.

CHILDIS, Andrew, Associate Professor, Dept. of Combinatorics and Optimization to the David R. Cheriton School of Computer Science, February 29, 2012 – June 30, 2015.


FORSYTH, Peter, Professor, David R. Cheriton School of Computer Science to the Dept. of Applied Mathematics, May 1, 2013 – April 30, 2016.


HEWITT, Conrad, Associate Professor, St. Jerome’s University to the Dept. of Applied Mathematics, May 1, 2013 – April 30, 2016.

LaFLAMME, Raymond, Professor, Dept. of Physics and Astronomy/IQC to the Dept. of Applied Mathematics, May 1, 2013 – April 30, 2016.

MENEZES, Alfred, Professor, Dept. of Combinatorics and Optimization to the David R. Cheriton School of Computer Science, April 1, 2013 – June 30, 2015.

ORCHARD, Jeffery, Associate Professor, David R. Cheriton School of Computer Science to the Dept. of Applied Mathematics, May 1, 2013 – April 30, 2016.

Graduate Student to Part-time Lecturer Appointments


Graduate Student to Part-time Lecturer Reappointments


PROSSER, Mark, David R. Cheriton School of Computer Science, September 1, 2013 – December 31, 2013.

Post-doctoral Fellow to Part-time Lecturer Appointments


NELSON, Peter, Dept. of Combinatorics and Optimization, May 1, 2014 – August 31, 2015.


Post-doctoral Fellow to Part-time Lecturer Reappointments
FRIGGSTAD, Zachary, Dept. of Combinatorics and Optimization, September 1, 2013 – August 31, 2014.


B. ADMINISTRATIVE APPOINTMENTS
COOK, Martin, Co-Director, Survey Research Centre, Dept. of Sociology and Legal Studies, July 1, 2013 – June 30, 2015.


ZENG, Leilei, Associate Chair, Undergraduate Affairs, Dept. of Statistics and Actuarial Science, September 1, 2013 – August 31, 2015.

C. RESIGNATION
LANSON, Natalie, Assistant Professor, Dept. of Applied Mathematics, effective June 30, 2013.

D. RETIREMENT
BROWN, Stephen, Professor, Dept. of Statistics and Actuarial Science, effective August 31, 2013.

Ian P. Goulden
Dean, Mathematics
A. APPOINTMENTS

Probationary-term Appointments

SCIAINI, A. Gérman, Associate Professor, Department of Chemistry, January 1, 2014 to June 30, 2017. [B.Sc., University of Buenos Aires (2001); Ph.D., University of Buenos Aires (2006).]

Dr. Sciaini was recently group leader at the Max-Planck Research Department for Structural Dynamics and Department of Physics at the University of Hamburg where his research focused on ultrafast high-resolution electron microscopy and ultrafast electron/x-ray diffraction. His research on ultrafast chemical physics will continue at the University of Waterloo and will further strengthen the Department of Chemistry’s initiative in chemical structure and dynamics, solution catalysis and materials research. His expertise in developing advanced instrumentation to follow ultrafast chemical events with atom motion will strengthen the department’s soft and solid state matter research.

SCHIPPER, Derek, Assistant Professor, Department of Chemistry, October 1, 2013 to June 30, 2017. [B.Sc., University of Prince Edward Island (2006); Ph.D., University of Ottawa (2011).]

Dr. Schipper was recently a NSERC postdoctoral fellow in the Department of Chemistry at the Massachusetts Institute of Technology where he focused on the chemistry and materials science of conjugated ladder polymers and novel aromatic systems. His research area is in the design, synthesis and exploration of novel organic-based electronic materials, especially in the area of novel energy materials. Dr. Schipper’s research complements the expertise in materials research in the department and broadens the scope of the area of organic-based materials on campus. He will be involved in the new Materials and Nanosciences program.

Probationary-term Reappointment

BRODERICK, Avery E., Assistant Professor, Department of Physics and Astronomy, July 1, 2014 to June 30, 2017. [B.Sc., SUNY Stony Brook (1999); Ph.D., Caltech (2004).]

Definite-term Appointments

PINHEIRO, Marcel, Lecturer, Department of Biology, August 1, 2013 to July 31, 2016. [B.Sc., University of Waterloo (2005); M.Sc., University of Waterloo (2007); Ph.D., University of Waterloo (2013).] Dr. Pinheiro has been hired as a lecturer in Invertebrate Biology/Parasitology. He completed his training at Waterloo, with Dr. Niels Bols as his Ph.D. advisor. His area of research was invertebrate and fish physiology, specifically the interactions of ciliates with fish viruses. Dr. Pinheiro will be teaching an introductory biology overview course, as well as developing courses in invertebrate biology and parasitology.

REZANEZHAD, Fereidoun, Research Assistant Professor, Department of Earth and Environmental Sciences, May 1, 2013 to April 30, 2016. [B.Sc., University of Tabriz, Iran (1998); M.Sc., University of Sistan and Baluchestan, Iran (2000); Ph.D., University of Heidelberg, Germany (2007).] Research focuses on soil physics applied to the subsurface environment with particular emphasis on analyses and measurement of physical, chemical, and hydraulic properties of soils associated with the subsurface (vadose zone and deep groundwater), and groundwater and surface water interactions, contaminant and reactive transport, soil and wastewater treatment, and eco-hydrological controls in watershed element cycling.

Definite-term Reappointment

Appointment Change
DALTON, Kristine, appointment changed from definite-term Lecturer to probationary-term Assistant Professor, School of Optometry and Vision Science, as Ph.D. requirements have been met. This change is effective June 1, 2013 (to June 30, 2016).

Adjunct Appointments
Undergraduate Instruction
ABU-GHAZALAH, Rashid, Lecturer, School of Pharmacy, September 1, 2013 to December 31, 2013.

BARNES, Derek J., Lecturer, School of Optometry and Vision Science, September 1, 2013 to December 31, 2013.

BOHLOULI-ZANJANI, Parisa, Lecturer, Department of Physics and Astronomy, May 1, 2013 to August 31, 2013.

COOK, Rachel, Lecturer, Department of Biology, September 1, 2013 to December 31, 2013.

SULLIVAN, Michael, Lecturer, School of Pharmacy, May 1, 2013 to August 31, 2013.

Graduate Supervision
CHARLET, Laurent, Professor, Department of Earth and Environmental Sciences, April 1, 2013 to March 31, 2016.

HARTMANN, Jens, Professor, Department of Earth and Environmental Sciences, April 1, 2013 to March 31, 2016.

KALTCHENKO, Alexei, Associate Professor, Department of Physics and Astronomy, June 1, 2013 to May 31, 2016.

REARDON, Eric J., Professor, Department of Earth and Environmental Sciences, May 1, 2012 to April 30, 2016.

SPENCER, Gaynor, Associate Professor, Department of Biology, June 1, 2013 to May 31, 2016.

TETREAULT, Gerald R., Assistant Professor, Department of Biology, May 1, 2013 to April 30, 2016.

WILHELM-MAUCH, Frank, Professor, Department of Physics and Astronomy, July 1, 2013 to June 30, 2016.

Graduate Supervision and Research
BOLS, Niels C., Professor, Department of Biology, September 1, 2013 to August 31, 2016.

GRUBER, Aaron J., Assistant Professor, Department of Biology, August 1, 2013 to July 31, 2016.

ITO, Rutsuko, Assistant Professor, Department of Biology, August 1, 2013 to July 31, 2016.

TAYLOR, William D. (Bill), Professor, Department of Biology, September 1, 2013 to August 31, 2016.

Adjunct Reappointments
Undergraduate Instruction
GILBERT, Dara, Lecturer, Department of Chemistry, September 1, 2013 to December 31, 2013.
Undergraduate Instruction, Graduate Supervision and Research

DeHART, Pieter A.P., Assistant Professor, Department of Biology, October 1, 2013 to September 30, 2016.

Graduate Supervision

LINNEN, Robert L., Professor, Department of Earth and Environmental Sciences, July 1, 2013 to June 30, 2016.

McMARTIN, Isabelle, Professor, Department of Earth and Environmental Sciences, June 1, 2013 to May 31, 2016.

SPOELSTRA, John, Assistant Professor, Department of Earth and Environmental Sciences, May 1, 2013 to April 30, 2016.

THORLEIFSON, Harvey, Professor, Department of Earth and Environmental Sciences, May 1, 2013 to April 30, 2014.

Graduate Supervision and Research

HEWITT, L. Mark, Assistant Professor, Department of Biology, October 1, 2013 to September 30, 2016.

PETE RSON, Carol A. (Distinguished Professor Emeritus), Professor, Department of Biology, November 1, 2012 to October 31, 2015.

SMOKOROWSKI, Karen E., Assistant Professor, Department of Biology, October 1, 2013 to September 30, 2016.

TROPE, Graham E., Professor, School of Optometry and Vision Science, October 1, 2013 to September 30, 2016.

Graduate Supervision, Research and Other

SCRIMGEOUR, Garry J., Professor, Department of Biology, July 1, 2013 to June 30, 2016.

SMITH, D. Scott, Associate Professor, Department of Biology, August 1, 2013 to July 31, 2016.

Research

LeROY, Robert, Professor, Department of Chemistry, June 1, 2013 to August 31, 2016.

Graduate Instruction, Graduate Supervision and Research

MYERS, Robert C., Professor, Department of Physics and Astronomy, September 1, 2013 to August 31, 2018.

Other

HO, Danny, Assistant Professor, School of Pharmacy, March 1, 2013 to February 28, 2016.

McCOURT, Frederick (Distinguished Professor Emeritus), Professor, Department of Chemistry, Department of Chemical Engineering and Department of Electrical and Computer Engineering, May 1, 2013 to April 30, 2014.

Cross Appointments

IOANNIDIS, Marios, Professor, Department of Chemical Engineering to the Department of Earth and Environmental Sciences, January 1, 2013 to December 31, 2014.

MIAO, Guo-Xing, Assistant Professor, Department of Electrical and Computing Engineering to the Department of Physics and Astronomy, September 1, 2012 to August 31, 2015.
WASILEWSKI, Zbigniew, Professor, Department of Electrical and Computer Engineering to the Department of Physics and Astronomy, May 1, 2013 to April 30, 2016.

Staff to Faculty Reappointments
DINH, Tan N., Lecturer, Faculty of Science, September 1, 2013 to December 31, 2013.

SHANKAR, Sunita, Lecturer, School of Optometry and Vision Science, September 1, 2013 to December 31, 2013.

Graduate Student to Part-time Lecturer Reappointments
NAZARI NEJAD, Saman, Lecturer, School of Pharmacy, September 1, 2013 to December 31, 2013.

NESAN, Dinushan, Lecturer, Department of Biology, September 1, 2013 to December 31, 2013.

B. ADMINISTRATIVE REAPPOINTMENTS
GORECKI, Tadeusz, Associate Dean, Co-operative Education, Faculty of Science, September 1, 2013 to August 31, 2014.

WAITE, Nancy, Associate Director, Practice-Based Education, School of Pharmacy, March 1, 2013 to February 28, 2016.

C. RESIGNATIONS
VIJAYAN, Mathilakath M., Professor, Department of Biology, effective September 1, 2013.

WILHELM-MAUCH, Frank, Professor, Department of Physics and Astronomy, effective July 1, 2013.

D. RETIREMENTS
BOLS, Niels, Professor, Department of Biology, effective September 1, 2013.

MAYFIELD, Colin, Professor, Department of Biology, effective September 30, 2013.

REARDON, Eric, Professor, Department of Earth and Environmental Sciences, effective May 1, 2013.

TAYLOR, William, Professor, Department of Biology, effective September 1, 2013.

WARD, Owen, Professor, Department of Biology, effective September 1, 2013.

E. ADMINISTRATIVE LEAVE
For Approval by the Board of Governors
CHEN, Jeff Z.Y., Professor, Department of Physics and Astronomy, January 1, 2014 to April 30, 2014, 100% salary.

T.B. McMahon
Dean, Science
FOR INFORMATION

A. PROBATIONARY-TERM APPOINTMENTS
ASHCROFT, Rachelle, Assistant Professor, School of Social Work, August 1, 2013 to July 31, 2016.

SHAIKH, Arshi, Assistant Professor, Social Development Studies, August 1, 2013 to July 31, 2016.

B. ADMINISTRATIVE APPOINTMENT
TIN, Tony, Director, Library and Information Services, Lusi Wong Library, September 1, 2013

C. SABBATICAL LEAVE
D’AILLY, Hsiao, Associate Professor, Social Development Studies, September 1, 2013 to August 31, 2014, 100% salary.

Glenn F. Cartwright
Principal, Renison University College
FOR APPROVAL

Committee/Council Appointments/Appointment Change

Motion: To approve the following appointments/appointment change:

- **COU Academic Colleague:** Dan Brown as COU Academic Colleague (replacing Sheila Ager), term to 30 June 2014 [this is a change from COU Academic Colleague Alternate, term to 30 June 2014.]

- **Senate Finance Committee:** Glenn Cartwright as FUAC representative (replacing Katherine Bergman), term to 30 April 2014.

- **Senate Graduate & Research Council:** Mina Rohanizadegan as environment graduate student representative (replacing Nino Antadze), term to 30 April 2014.

- **Senate Long Range Planning Committee:** Bryan Tolson as FAUW Board of Directors representative (replacing Aimée Morrison), term to 30 June 2014.

- **University Committee on Student Appeals:** John Mielke as applied health sciences faculty representative (replacing Stephen Smith), term 1 January 2014 to 30 April 2015; Jenny Yao as science undergraduate student representative (replacing Amy Yang), term to 30 April 2014.
Senate Graduate & Research Council met on 10 June 2013 and agreed to forward the following items to Senate for approval. These items are recommended for inclusion in the regular agenda.

Further details are available at: [https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council](https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council)

**FOR APPROVAL**

AMENDMENTS TO GRADUATE STUDIES CALENDAR – REVISIONS TO REGULATIONS FOR DOCTORAL THESSES

**Motion:** To approve the amendments to the graduate studies calendar pertaining to external examiners of doctoral theses and to thesis defence decisions for doctoral theses, as described in Attachment 1.

**Rationale:** The proposed amendments pertaining to external examiners aim to enhance the university’s existing guideline for determining conflict of interest and are in line with similar regulations at other Canadian universities and the Tri-council’s statement on conflict of interest. The amendment to reduce the allowed time limits under the ‘Accepted Conditionally’ decision for doctoral theses is meant to facilitate doctoral completion and mitigate unnecessary protraction of students’ doctoral defenses.

/sg
George Dixon
Vice-President, University Research

Sue Horton
Associate Provost, Graduate Studies
June 3, 2013

To: Mike Grivicic, Secretary, Senate Graduate & Research Council

From: Lynn Judge, Director, Graduate Academic Services

Re: Senate Graduate & Research Council – Items for Approval – Graduate Studies Calendar

PhD Thesis Examining Committee - External Examiners of Doctoral Theses

Thesis Defence - Decisions

The following are changes for approval and to be listed in the Graduate Studies Calendar:

1) PhD Thesis Examining Committee - External Examiners of Doctoral Theses

At Graduate Operations Committee meetings held earlier this year, a proposal was presented for enhancing the guideline for determining conflict of interest, recommendation and approval regulation for the external examiners of doctoral theses. The proposed changes were informed by regulations at other Canadian universities and the Tri-council’s statement on conflict of interest. The proposed revisions for the PhD Thesis Examining Committee regulation as recorded in the Graduate Studies Calendar are highlighted below.

**PhD Thesis Examining Committee**

The Examining Committee consists of a minimum of five members: an external examiner, either the supervisor and three other members of the university, or the co-supervisors and two other members of the university. At least one of the non-supervising members must be from the home department, and at least one must be external to the home department (referred to as the internal-external). Normally, UW members of the Examining Committee will be drawn from the student’s Advisory Committee.

In some specialized fields, identifying an internal-external who is able to make a meaningful contribution to the examination is problematic. In such circumstances, the requirement that at least one of the UW members of the Examining Committee be external to the department may be waived by the Faculty Associate Dean (Graduate Studies). Holding an adjunct or cross appointment in the home department does not preclude serving as an internal-external.

The external examiner must be at arm's length from the candidate’s thesis, candidate and supervisor(s). Normally, this means the external examiner is free of potential conflict of interest for the past seven years with the candidate, supervisor(s), and examination committee members if they have played a collaborative role in the candidate’s thesis. This includes full disclosure of all past affiliation is required to assist in confirming an arm’s-length relationship. Recommendations to the Faculty Associate Dean (Graduate Studies) concerning external examiners must be accompanied by a curriculum vitae and a conflict-of-interest statement. The Associate Dean is responsible for determining whether the external examiner proposed is at arm's length.

The external examiner must hold a doctorate and be knowledgeable in the field of the candidate’s research. In addition, to ensure fairness and impartiality, the external examiner must be at arm's length from the candidate’s thesis, candidate and supervisor(s), and must not be in a potential conflict of interest with regards to the outcome of the thesis examination. There is a conflict of interest when:

- A proposed external examiner is, or was in the last six years, from the same university,
organization or department, or belongs or belonged, in the last six years, to the same research unit as the supervisor(s) or candidate; or

- There is an administrative or family link between the proposed external examiner and the supervisor(s) or candidate (e.g., head of the department, dean of the faculty, etc.); or

- A proposed external examiner is an industrial or government representative or professional who is or was in the last six years directly involved in collaborative activities with the supervisor(s) or candidate; or

- A proposed external examiner is a former research supervisor or graduate student of the supervisor(s) or candidate; or

- A proposed external examiner has collaborated or published with the supervisor(s) or candidate within the past six years; or

- A proposed external examiner is a planned future research supervisor or employer of the candidate or plans to collaborate or publish with the candidate in the foreseeable future; or

- The proposed external examiner is uncomfortable with reviewing the proposal due to previous conflicts or any other reason (e.g., past student or supervisor, even if more than six years ago, or personal conflict); or

- The Faculty Associate Dean, Graduate Studies, has reason to believe that a specific proposed external examiner should not be involved in the review.

- In cases where the candidate’s thesis research has involved collaborations with other local members of the examining committee beyond the supervisor(s) within the past six years, the external examiner must be free of potential conflict of interest under the guidelines above with those members as well.

Recommendation of an individual to serve as external examiner is made by the supervisor(s) or graduate officer/associate chair, graduate studies, as appropriate. Recommendations to the Faculty Associate Dean (Graduate Studies) concerning external examiners must be accompanied by a curriculum vitae covering the past six years and a conflict-of-interest statement, as well as full disclosure of any past affiliations involving the candidate and supervisor(s) to assist in confirming an arm’s-length relationship. The Faculty Associate Dean is responsible for determining whether the external examiner proposed is at arm’s length and the contact for the external examiner up to the time of the defence.

2) **Thesis Defence - Decision**

At Graduate Operations Committee meetings held earlier this year, doctoral defence decisions were reviewed. A change to the time limit from one calendar year to four months under the *Accepted Conditionally* decision category was proposed. The regulation change is highlighted below.

**Decision**

The decision of the PhD Thesis Examining Committee is based both on the thesis and on the candidate's ability to defend it.

Four decisions are open to the PhD Thesis Examining Committee:
A. Accepted
Thesis may require typographical and/or minor editorial corrections to be made to the satisfaction of the supervisor normally within one month.

B. Accepted Conditionally
Thesis is acceptable but requires content changes that do not require re-examination. The PhD Thesis Examining Committee's report must include a brief outline of the nature of the changes required and must indicate the time by which the changes are to be completed. In any case, changes must be completed to the Committee's satisfaction within one calendar year four months of the date of the defence or the student must withdraw from the program.

C. Decision Deferred
Thesis requires modifications of a substantial nature, the need for which makes the acceptability of the thesis questionable. The PhD Thesis Examining Committee's report must contain a brief outline of the modifications expected and should indicate the time by which the changes are to be completed. The revised thesis must be re-submitted to the Associate Dean (Graduate Studies) of the Faculty for re-examination. Normally, the re-examination will follow the same procedures as for the initial submission except that the display period may be reduced or eliminated at the discretion of the Associate Dean. Normally, the same PhD Thesis Examining Committee will serve. A decision to defer is open only once for each candidate.

D. Rejected
Thesis is rejected. The PhD Thesis Examining Committee shall report the reasons for rejection. A student whose doctoral thesis has been rejected will be required to withdraw from the PhD program. The departmental Graduate Officer/Associate Chair will confirm in writing the decision of the PhD Thesis Examining Committee to the student and the requirement to withdraw within one week of the date of the examination.

If the PhD Thesis Examining Committee is not prepared to reach a decision concerning the thesis at the time of the thesis defence, it is the responsibility of the Chair to determine what additional information is required by the Committee to reach a decision, to arrange to obtain this information for the Committee, and to call another meeting of the Committee as soon as the required information is in his or her hands. It is also the responsibility of the Chair to inform the candidate that the decision is pending. Candidates should not normally be required to present themselves before the PhD Thesis Examining Committee at the second meeting.

If all but one member of the Committee agree on a decision, the decision shall be that of the majority, except when the one dissenting vote is that of the External Examiner and the External Examiner is present. In this case, the occurrence must be reported to the Associate Dean (Graduate Studies) of the Faculty concerned who will inform the Associate Provost, Graduate Studies. The Associate Provost will seek the advice of the Associate Deans (Graduate Studies) and come to a decision, which will be reported back to the PhD candidate and the Chair of the PhD Thesis Examining Committee. In very exceptional cases, the Associate Provost, Graduate Studies may wish to take the matter before the Senate Graduate and Research Council, which is specifically given authority to make such decisions.

If two or more dissenting votes are recorded, the case must be referred to the Associate Dean (Graduate Studies) of the Faculty who will ascertain what is needed to reach a consensus.
Senate Undergraduate Council met on 18 June 2013 and agreed to forward the following items to Senate for approval. Council recommends that these items be included in the regular agenda. Items recommended for inclusion in the consent agenda are contained within a separate report.

Please note: the Bachelor of Applied Science, Biomedical Engineering program is recommended to Senate for approval, subject to approval by Senate Undergraduate Council at its meeting on 10 September 2013. Further details are available at: uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council.

FOR APPROVAL

NEW ACADEMIC PROGRAMS  [effective 1 September 2014]

► Faculty of Engineering
  Bachelor of Applied Science, Biomedical Engineering (Co-op)

  1. Motion: To approve the proposed plan in attachment #1.

  Rationale: The new undergraduate biomedical engineering program is intended to meet the needs of students interested in this rapidly growing field. This program will be unique in Canada due to its strong focus on the modelling and design of biomedical systems to develop innovative technologies and engineering solutions to health-related problems.

  The graduate engineers will have the technical skills required to model complex biomedical systems, interpret biomedical experimental results and design and develop innovative technologies in close collaboration with the biomedical community. The graduates will have the interdisciplinary background to act as collaborators between biologists, medical professionals and engineers in different fields. Through their multidisciplinary training, graduates will be able to work in research hospitals, academic centres, industry as well as government and/or regulatory agencies.

  Graduates will be ideally suited to contribute directly to the biomedical and health economy of Canada, but with a well-rounded education allowing for wide range of career possibilities. The basic facts about the program are:

  • it is an interdisciplinary program with emphasis on biomedical systems
  • the program will be a regular co-op engineering program
  • a cohort of 40 students at the initial start up to 90 students with a desired start date of September 2014
  • while inspired from the systems design curriculum, the biomedical engineering program will be specific from 2A and thus will have its own biomedical engineering curriculum
  • A specific implementation plan whereby for the first two years of the program (Fall 2014 and Fall 2015) the BME and SYDE first year student cohort will be taught together in 1A. As student intake increases to 90 into the BME program and faculty complement is being hired, the SYDE and BME 1A cohort will eventually be taught as separate classes.

► Faculty of Science
  Bachelor of Science, Honours Chemistry (Computational Specialization) (Regular and Co-op)

  2. Motion: To approve the following proposed plan:

  Regular
  Continuation in Honours Chemistry (Computational Specialization) requires a cumulative overall average of 60% and a cumulative average of 60% in each of the major subjects, namely Chemistry
and Computer Science. In order to graduate in Honours Chemistry (Computational Specialization), the following requirements must be successfully completed:

1. 23.0 units, including a maximum of 3.0 lab units.
2. Four courses (2.0 units) chosen from CHEM 221, 265, 310, 313, 323, 331, 357, 360.
3. Completion of any two (2) of the following lab sequences (2×0.75 units = 1.5 units).
   (a) CHEM 310L and CHEM 313L
   (b) CHEM 220L and CHEM 224L
   (c) CHEM 265L and either CHEM 335L or CHEM 360L
4. Five courses (2.5 units) chosen from the following list of electives, of which at least two courses (1.0 unit) must be CHEM labelled courses. Substitutions may be made with prior approval of the plan advisor.
   BIOL 366, BIOL 382, CHEM 404, CHEM 430 (Protein Chemistry and Proteomics), CHEM 430 (Nucleic Acids: Structure and Function), CHEM 440 (Computer Modelling), CHEM 440 (Molecular Dynamics and Its Applications), CHEM 450 (Thermodynamics II), CHEM 450 (Properties of Bulk and Nanomaterials), CHEM 450 (Topics in Computational Chemistry), CHEM 450 (Computational Physical Chemistry), CHEM 450 (Statistical Mechanics) or PHYS 359, CHEM 460 (Computer Modelling), CHEM 460 (Transition Metals in Organic Chemistry), CHEM 494A/B*, NE 451, NE 452.
   *CHEM 494A/B must both be taken in order to receive credit. They count as two elective choices (1.0 unit).
5. One course (0.5 units) chosen from CS 230, 330, 338, 467, 473, 475.
6. Completion of the English Language Proficiency Examination (ELPE).
7. No more than 3.0 "SCI-labelled" units will be allowed toward this Academic Plan.
8. Failure in more than two CHEM lecture courses will result in the requirement to withdraw from the Academic Plan. Students may petition for re-admission; such re-admission is at the discretion of the Chemistry Undergraduate Committee. There must be exceptional circumstances to justify re-admission.

**Year One**

**Fall**
- CHEM 120/120L Physical and Chemical Properties of Matter/Laboratory
- CS 115 Introduction to Computer Science 1
- MATH 114 Linear Algebra for Science
- MATH 127 Calculus 1 for the Sciences
- PHYS 121/121L Mechanics /Laboratory

**Winter**
- CHEM 123/123L Chemical Reactions, Equilibria and Kinetics/Laboratory
- CHEM 140 Introduction to Scientific Calculations
- CS 116 Introduction to Computer Science 2
- MATH 128 Calculus 2 for the Sciences
- PHYS 122/122L Waves, Electricity and Magnetism/Laboratory

**Year Two**

**Fall**
- CHEM 209 Introductory Spectroscopy and Structure
- CHEM 220 Analytical Chemistry 1/Laboratory
- CHEM 240 Mathematical Methods for Chemistry
- CHEM 250L Physical Chemistry Laboratory 1
- CHEM 264 Organic Chemistry 1
- CS 234 Data Types and Structures

*Students interested in lab sequence 4(b), described above, should take CHEM 220L this term.*
Winter
CHEM 212 Structure and Bonding
CHEM 233 Fundamentals of Biochemistry or CHEM 237 Introductory Biochemistry
CHEM 254 Introductory Chemical Thermodynamics
Two electives (1.0 unit)
Students interested in lab sequence 4(b), described above, should take CHEM 224L this term. Those interested in lab sequence 4(c) should take CHEM 265, in place of an elective, as well as CHEM 265L.

Year Three
Fall
CHEM 350L Physical Chemistry Laboratory 2
CHEM 356 Introductory Quantum Mechanics
CS 370 Numerical Computation
Three electives (1.5 units)
Students interested in lab sequence 4(a), described above, should take CHEM 310, in place of an elective, as well as CHEM 310L this term. Those interested in taking CHEM 335L next term, as part of lab sequence 4(c), should take CHEM 331 in place of an elective.

Winter
CHEM 340 Introductory Computational Chemistry
CHEM 350 Chemical Kinetics
Three electives (1.5 units)
Students interested in lab sequence 4(a), described above, should take CHEM 313, in place of an elective, as well as CHEM 313L this term. Those interested in lab sequence 4(c) should take either CHEM 357 or CHEM 360, in place of an elective, as well as CHEM 335L or CHEM 360L.

Year Four
CHEM 440 Computational Chemistry or NE 451 Simulation Methods in Nanotechnology
Engineering
Nine electives (4.5 units)

Co-operative
This academic plan integrates five four-month work terms and extends over four and two-thirds years. Detailed information on co-op program requirements are listed in the Co-operative Education and Career Action section of the calendar and in the Science Faculty work term report guidelines. Students work and study in alternate terms starting at the end of the 2A term. There is a double work term between terms 3B and 4A. Continuation in Honours Co-operative Chemistry (Computational Specialization) requires a cumulative overall average of 60% and a cumulative average of 60% in each of the major subjects, namely Chemistry and Computer Science. In order to graduate in Honours Chemistry (Computational Specialization), the following requirements must be successfully completed:

1. 23.0 units, including a maximum of 3.0 lab units.
2. Four courses (2.0 units) chosen from CHEM 221, 265, 310, 313, 323, 331, 357, 360.
3. Completion of any two (2) of the following lab sequences (2×0.75 units = 1.5 units).
   (a) CHEM 310L and CHEM 313L
   (b) CHEM 220L and CHEM 224L
   (c) CHEM 265L and either CHEM 335L or CHEM 360L
4. Five courses (2.5 units) chosen from the following list of electives, of which at least two courses (1.0 unit) must be CHEM labelled courses. Substitutions may be made with prior approval of the plan advisor.
   BIOL 366, BIOL 382, CHEM 404, CHEM 430 (Protein Chemistry and Proteomics), CHEM 430 (Nucleic Acids: Structure and Function), CHEM 440 (Computer Modelling), CHEM 440
(Molecular Dynamics and Its Applications), CHEM 450 (Thermodynamics II), CHEM 450 (Properties of Bulk and Nanomaterials), CHEM 450 (Topics in Computational Chemistry), CHEM 450 (Computational Physical Chemistry), CHEM 450 (Statistical Mechanics) or PHYS 359, CHEM 460 (Computer Modelling), CHEM 460 (Transition Metals in Organic Chemistry), CHEM 494A/B*, NE 451, NE 452
*CHEM 494A/B must both be taken in order to receive credit. They count as two elective choices (1.0 unit).

5. One course (0.5 units) chosen from CS 230, 330, 338, 467, 473, 475.
6. Completion of the English Language Proficiency Examination (ELPE).
7. No more than 3.0 "SCI-labelled" units will be allowed toward this Academic Plan.
8. Failure in more than two CHEM lecture courses will result in the requirement to withdraw from the Academic Plan. Students may petition for re-admission; such re-admission is at the discretion of the Chemistry Undergraduate Committee. There must be exceptional circumstances to justify re-admission.

**Year 1A (Fall)**
CHEM 120/120L Physical and Chemical Properties of Matter/Laboratory
CS 115 Introduction to Computer Science 1
MATH 114 Linear Algebra for Science
MATH 127 Calculus 1 for the Sciences
PHYS 121/121L Mechanics /Laboratory

**Year 1B (Winter)**
CHEM 123/123L Chemical Reactions, Equilibria and Kinetics/Laboratory
CHEM 140 Introduction to Scientific Calculations
CS 116 Introduction to Computer Science 2
MATH 128 Calculus 2 for the Sciences
PHYS 122/122L Waves, Electricity and Magnetism/Laboratory

**Year 2A (Fall)**
CHEM 209 Introductory Spectroscopy and Structure
CHEM 220 Analytical Chemistry 1/Laboratory
CHEM 240 Mathematical Methods for Chemistry
CHEM 250L Physical Chemistry Laboratory 1
CHEM 264 Organic Chemistry 1
CS 234 Data Types and Structures
*Students interested in lab sequence 4(b), described above, should take CHEM 220L this term.*

**Year 2B (Spring)**
CHEM 212 Structure and Bonding
CHEM 233 Fundamentals of Biochemistry or CHEM 237 Introductory Biochemistry
CHEM 254 Introductory Chemical Thermodynamics
Two electives (1.0 unit)
*Students interested in lab sequence 4(b), described above, should take CHEM 224L this term.*
Those interested in lab sequence 4(c) should take CHEM 265, in place of an elective, as well as CHEM 265L.

**Year 3A (Winter)**
CHEM 340 Introductory Computational Chemistry
CHEM 350 Chemical Kinetics
Three electives (1.5 units)
Students interested in lab sequence 4(a), described above, should take CHEM 313, in place of an elective, as well as CHEM 313L this term. Those interested in lab sequence 4(c) should take either CHEM 357 or CHEM 360, in place of an elective, as well as CHEM 335L or CHEM 360L.

Year 3B (Fall)
CHEM 350L Physical Chemistry Laboratory 2
CHEM 356 Introductory Quantum Mechanics
CS 370 Numerical Computation
Three electives (1.5 units)

Students interested in lab sequence 4(a), described above, should take CHEM 310, in place of an elective, as well as CHEM 310L this term. Those interested in taking CHEM 335L next term, as part of lab sequence 4(c), should take CHEM 331 in place of an elective.

Year Four (Fall and Winter)
CHEM 440 Computational Chemistry or NE 451 Simulation Methods in Nanotechnology Engineering
Nine electives (4.5 units)

**Rationale:** Computational chemistry is an important and emerging theme in modern chemistry, and the faculty wishes to offer a computationally-focused chemistry plan to replace the honours computational science/chemistry specialization, which was inactivated in 2012. Compared to its predecessor, this new plan is not only more strongly focused on chemistry, incorporating almost 1,000 hours of chemistry instruction (the minimum amount of chemistry instruction, as defined by the Canadian Society for Chemistry), but is also much more flexible. The increase in flexibility was achieved because the new plan requires fewer MATH, CS, and non-chemistry science courses. By design, the plan has sufficient flexibility to allow students to delay the start of the required CS courses until year two (e.g., for students who transfer into the program after year one from any physical sciences plan) and many options for upper year course selections. This flexibility will enable students to transfer into or out of the plan with minimal disruption.

**ACADEMIC PLAN INACTIVATION**

• Faculty of Arts
  • Arts and Business
  • Global Engagement Specialization  [effective 1 September 2014]

3. Motion: To approve the inactivation of the plan.

**Rationale:** Despite being in place since fall 2009, only thirteen students have pursued the Global Engagement Specialization. At a time when the university is facing financial constraints, the feasible option is to eliminate the specialization rather than make changes in the hope of attracting more students.

/kjj
Mario Coniglio
5 September 2013
Associate Vice-President, Academic
Biomedical Engineering

Biomedical engineering lies at the interface of engineering and life sciences. Using engineering and design principles, a biomedical engineer works towards the advancement of biology and medicine, developing innovative technologies and solutions to health-related problems, such as new tools and models to diagnose, monitor, treat and prevent disease.

The undergraduate program in Biomedical Engineering, housed in the department of Systems Design Engineering at Waterloo, is a stand-alone engineering program. The program provides an integrated systems approach to the study of biomedical engineering, where basic knowledge and skills such as biology, mechanics, physics, chemistry, system analysis and design are taught in the context of biomedical related applications while taking into consideration the complexity of biomedical systems. Three theme areas have been identified, which are served by both core and technical elective courses in the program.

1. Biomedical signals
   - medical imaging
   - biosignals
   - neuroscience
   - diagnostics (pattern recognition)
2. Biomechanics
   - biofluid mechanics
   - tissue mechanics
   - musculoskeletal biomechanics
   - sports engineering
   - rehabilitation engineering
3. Biomedical devices
   - assistive devices
   - implants
   - prostheses and orthoses
   - biomechatronics
   - design for elderly
   - biomedical technologies
   - therapeutics

The Engineering Profession

Each province within Canada has its own Professional Engineering Association. The Canadian Engineering Accreditation Board (CEAB) is a national organization that has representation from all of the Provincial Professional Engineering Associations. The CEAB determines what types of courses must be contained in a university engineering program in order for the program to meet the standards of Canadian engineering. The Biomedical Engineering program is not yet accredited as this can only be done once the first students have graduated. Given Waterloo Engineering experience in CEAB accreditation and the fact that the Biomedical Engineering curriculum has been designed to satisfy the strict standards of the CEAB, it is therefore expected to be recognized as a fully qualified Engineering program when it undergoes review in 2020.

The Biomedical Engineering program at the University of Waterloo is specifically oriented towards developing graduates who can solve problems lying at the interface of technology and human biological systems. Therefore, if you are technically oriented and also have a strong parallel interest in problems related to health and human physiology, Biomedical Engineering may be the right program for you.

The Biomedical Engineering program is quite challenging as it requires students to take five to six courses per term and the mandatory laboratory sessions associated with some of these courses. Thus, the average student in Biomedical Engineering is expected to work at least 50 hours per week as they gain further knowledge in life sciences, mechanics and electronics, develops competence in systems theory and design, and learn to apply these skills to solving biomedical problems.

Further information is available from:
Associate Chair for Biomedical Undergraduate Studies
Employment Opportunities

Biomedical Engineering is a very diverse and multidisciplinary field. A graduate from the Biomedical Engineering program will have the interdisciplinary background to act as an effective collaborator between biologists, medical professionals, and engineers in different fields. From the multidisciplinary training received in our department, a graduate from this program will be able to work in research hospitals, academic centres, industry as well as government and/or regulatory agencies. To some extent, the technical elective area chosen by the student in the third and fourth year will determine more specifically what they do upon graduation. Thus, there are many employment opportunities which a Biomedical Engineer may be involved with such as:

- biomedical data analysis
- biomedical image analysis and pattern recognition
- medical device product design, manufacturing, testing and management
- simulation and modeling of diseases and biological systems
- healthcare regulations
- design and engineering of sports equipment and testing
- research and development in medical devices and instrumentation

Undergraduate Curriculum in Biomedical Engineering

The Biomedical Engineering curriculum is specifically designed to provide students with a clear understanding of human physiological systems and systems analysis and theory, combined with a thorough knowledge of engineering and design principles. Life sciences and biomedical engineering design are taught right from the start of first year. The first three years of the program are intended to provide each student with a solid engineering background in areas relevant to biomedical issues.

Throughout these three years the student's ability to grasp real engineering problems is enhanced by courses in systems design methodology followed by a series of challenging problem-solving experiences in the Biomedical Design Workshops. A focus is then given to the whole curriculum and the student learns to apply the lecture material, to develop skills in solving biomedical problems while developing design and project management abilities.

The final year of the program is comprised mostly of elective courses, allowing the student to focus on one or more areas of study. This provides the required background for a future year of advanced study to the MASc degree, or for a rewarding career in industry or government with a Bachelor's degree (BASc).

Biomedical Engineering Undergraduate Core and Suggested Elective Curriculum (listed by terms)

The Biomedical Engineering undergraduate program consists of two course groupings:

1. Compulsory core courses within the program that prepare the student for practice in engineering and comprise 70 to 80 percent of the course load.
2. Elective courses that comprise 20 to 30 percent of the course load.

A minimum of three complementary studies elective courses (CSEs) must be completed, in addition to the two complementary studies courses in the core program (BME 364 and BME 381), in subjects that complement the engineering curriculum (see the Complementary Studies Electives section below). A minimum of six technical elective courses must be completed in a particular technical discipline or disciplines appropriate to a student's interests (see the
Technical Elective Packages section below). Your course selections must meet CEAB requirements, including a minimum number of instruction hours in the various CEAB categories.

The current core course curriculum for Biomedical Engineering students is described below per term. Average hours per week are indicated in the columns Class for Lecture or Seminar (LEC or SEM), Tut for Tutorial (TUT), and Lab for Laboratory or Project (LAB or PRJ).

<table>
<thead>
<tr>
<th>Term</th>
<th>Course and Title</th>
<th>Weight</th>
<th>Class</th>
<th>Tut</th>
<th>Lab</th>
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<td>1A Fall</td>
<td><strong>BME 101</strong> Introduction to Biomedical Engineering</td>
<td>0.25</td>
<td>3</td>
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<td><strong>BME 101L</strong> Computer-Aided Design</td>
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<td><strong>BME 121</strong> Digital Computation</td>
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<td>1</td>
<td>3</td>
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<td><strong>BME 161</strong> Introduction to Biomedical Design</td>
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<td></td>
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<td><strong>BME 184L</strong> Engineering Biology Laboratory</td>
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<td><strong>SYDE 114</strong> Numerical and Applied Calculus</td>
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CEAB Requirements

To determine the suitability of elective courses, students should complete the CEAB Planner located under the Systems Design Engineering Undergraduate web site. In addition to meeting CEAB requirements, the student's course selections (as reported in their Planner) should be logical and defensible. Two CEAB Planners must be completed and submitted to the Associate Chair for Biomedical Undergraduate Studies, one planner for approval purposes in the student's 3A term, and one planner for graduation purposes at the end of the student's 4A term.

Students that have combinations of electives that result in a program that does not meet CEAB criteria will not be permitted to graduate.

Complementary Studies Electives (CSEs)

The Complementary Studies requirement gives students some breadth of studies related to their role as educated professionals in society. In addition to the two courses in the core program, at least three elective courses must be chosen to satisfy the Complementary Studies requirements. Only courses noted in Lists A, B, C, and D are Faculty-approved complementary studies elective courses to suit their program (and any course prerequisites).

Technical Studies Electives (TEs)

Each undergraduate student in Biomedical Engineering must complete at least six approved technical electives to meet graduation requirements. Students may arrange the sequencing of the technical elective courses to suit their program (and any course prerequisites).

The Department of Systems Design Engineering offers a wide variety of technical elective courses in the third and fourth year. In the Biomedical Engineering program, students are encouraged to design their own elective program to develop expertise in their particular interest area. Approved technical elective courses are available from Systems Design Engineering, from other Engineering departments, and from a wide list of technical courses in the faculties of Science and Mathematics. Only courses from Engineering and Computer Science will contribute towards CEAB hours in the categories of "Engineering Science" and "Engineering Design."

Technical Elective Packages

The Biomedical Engineering program committee has identified two technical elective areas within its current offerings. Additional information regarding elective packages may be obtained from the Associate Chair for Undergraduate Studies. Students may choose a technical elective package from the areas identified below to help them in their selection of technical electives. Choosing a specific elective package is not mandatory. Students do not receive any official notification on their transcript for completing an elective package. However, students may find it possible to arrange their electives in such a way as to complete the requirements for one or more Faculty of Engineering Approved Options. To do this, students with sufficiently high grades are encouraged, subject to approval from the Associate Chair for Undergraduate Studies, to supplement their program with extra courses or courses taken online or at another university.

Sports Engineering

Sports Engineering has grown from a hobby of Isaac Newton and Lord Rayleigh to a multi-billion dollar industry, and today's athlete is highly dependent on the design and performance of their equipment and training systems. The modern sports engineer must be familiar with a wide range of topics ranging from sport biomechanics and light-weight materials to mechatronic system dynamics and control.
The sports engineering package requires a two-term capstone project on the design of a new sports equipment or training device, plus two required courses in biomechanics and sports engineering. A complementary set of three more technical electives will give the sports engineering student the broad range of skills required for this emerging discipline.

Required courses in Biomedical Engineering:

- BME 461 and 462, the capstone design project. Students in Sports Engineering will focus their project on the design of a new sporting equipment or training device. The project must be pre-approved by the co-ordinator for Sports Engineering.
- BME XXX, Sports Engineering technical elective, which provides the necessary background on sports equipment design, training devices, and their interaction with the athlete.
- BME XXY, Biomechanics of Human Movement technical elective, which provides the necessary background on the musculoskeletal dynamics and optimal performance of athletes.

Three of the following courses must also be taken:

CIVE 422 Finite Element Analysis or ME 559 Finite Element Methods
ECE 417 or SYDE 575 Image Processing
KIN 340 Musculoskeletal Injuries in Work and Sport
KIN 341 Selected Topics in Sport and Work Injuries
MSCI 423 Managing New Product and Process Innovation
ME 524 or SYDE 553 Advanced Dynamics
ME 533 Non-metallic and Composite Materials
ME 555 Computer-Aided Design
ME 564 Aerodynamics
ME 566 Computational Fluid Dynamics for Engineering Design
SYDE 544 Biomedical Measurement and Signal Processing

Neuroscience

Neuroscience is a rapidly developing field with high relevance to medicine. Four of the ten highest-impact diseases in terms of years lost to disability are brain-related (World Health Organization, 2004, The Global Burden of Disease). Brain-inspired artificial systems are also emerging. Several Fortune-500 companies are pursuing computational brain modeling for the purpose of developing new brain-like technology.

Students focusing on neuroscience will draw from the core engineering and introductory biology courses, giving students a technical introduction to brain physiology, simulation, and analysis methods, and brain-computer interfaces.

The neuroscience course package consists of six specific required courses plus one additional course drawn from a list. The required courses include a two-term capstone project (BME 461 and 462), and two biology courses (BIOL 376 and 377) that cover a wide range of neuroscience topics, from molecular to large-system levels. There are also two engineering courses (SYDE 556 and 5XX) that cover modeling and analysis of neural systems, and brain-computer interfaces.

All of the following courses are required:

- BME 461 and 462, the capstone design project. Students in Neuroscience will focus their project on the design of a brain-like technology or a new device or model involving brain physiology or brain-computer interfaces. The project must be pre-approved by the co-ordinator for Neuroscience.
- BME 5XX Computational Neuroscience
- BIOL 376 Cellular Neurophysiology
- BIOL 377 Systems Neuroscience: From Neurons to Behaviour
- SYDE 556 Simulating Neurobiological Systems

One of the following courses must also be taken:
(Note: Biomedical Engineering students may lack prerequisites for many of these courses, and will have to obtain permission of the instructor. However, there are several Systems Design engineering (SYDE) courses in the list and other courses, where students will have the appropriate prerequisites, as shown with an asterisk beside it).
AMATH 382 or BIOL 382* Computational Modeling of Cellular Systems
AMATH 451* Introduction to Dynamical Systems
KIN 155* Introduction to Neuroscience for Kinesiology
KIN 301* Human Anatomy of the Central Nervous System
KIN 416 Neuromuscular Integration
KIN 456 Cognitive Dysfunction and Motor Skill
OPTOM 243 Neurophysiology of Vision
PHIL 256 or PSYCH 256* Introduction to Cognitive Science
PHIL 446 or PSYCH 446 Cognitive Modelling
PSYCH 207* Cognitive Processes
PSYCH 261 Physiological Psychology
PSYCH 307 Human Neuropsychology
PSYCH 396 Research in Behavioural Neuroscience
SYDE 372* Introduction to Pattern Recognition
SYDE 522* Machine Intelligence
SYDE 558* Fuzzy Logic and Neural Networks

**Faculty of Engineering Approved Options**

Following is a list of Faculty approved options.

- Biomechanics
- Computer Engineering
- Environmental Engineering
- International Studies in Engineering
- Management Sciences
- Mathematics
- Mechatronics
- Statistics
- Water Resources

Students who complete the requirements for these designated Options will receive a final academic transcript from the University of Waterloo with a statement that the Option has been successfully completed. Students should refer to the option section of the calendar for further information or contact the option co-ordinator.
MEMO

To: Members, Senate

cc: Ken McGillivray, Vice-President, Advancement

From: Erin Sargeant Greenwood, Associate Vice-President, Development

Date: August 19, 2013

Re: Gift Acceptance Policy

Please see proposed Gift Acceptance Policy attached for your information and discussion.

The Gift Acceptance Policy will serve the purpose previously met by the Provostial Statement on Donation Guidelines/Role of Advisory Bodies/Naming Principles & Procedures and by Policy 7: Approaches for Donations and Gifts-in-Kind. This document, upon approval, will replace the existing Policy 7 and the Provostial Statement will become defunct.

We look forward to questions and comments from senators and will provide additional information about Gift Acceptance Policies at the upcoming meeting.
Gift Acceptance Policy

Established: [Insert Effective Date]
Revised: N/A (New)
Mandatory Review Date: [The second anniversary of the establishment date and every five years thereafter.]
Supersedes: Policy 7: Approaches for Donations and Gifts-in-Kind; Provostial Statement on Donation Guidelines/Role of Advisory Bodies/Naming Principles & Procedures
Class: G
Responsible/Originating Department: Advancement
Executive Contact: Vice-President, Advancement

Related Policies, Guidelines & Procedures:
1. Policy 8: Information Security
2. Policy 10: Naming Opportunities
3. Policy 69: Conflict of Interest
4. Procedure 1: Contracts and Agreements – Excluding Research
5. Procedure 25: Contracts and Agreements – Zero or Unspecified Dollar Amounts
6. Procedure 26: Contracts and Agreements – Zero or Unspecified Dollar Amounts, Template Approved by Secretariat
7. Procedures re: University Contracts
8. Naming Opportunities Guidelines
9. Gift Acceptance Guidelines
10. Information and Privacy Statement

1. Introduction
According to the University of Waterloo Act 1972, the objects of the University of Waterloo are the pursuit of learning through scholarship, teaching and research within a spirit of free enquiry and expression. The university welcomes gifts made in accordance with this policy to help it achieve these objects.

2. Scope
This policy governs the solicitation by or on behalf of, donation to, receipt by and recognition of gifts (as defined in Appendix A) by the university, to the extent activities are not covered by Policy 10: Naming Opportunities and the Naming Opportunities Guidelines. This policy is intended to be read in conjunction with the Gift Acceptance Guidelines. Gifts made to Conrad Grebel University College, St. Jerome’s University, St. Paul’s University College, Renison University College and other charitable organizations with which the university has affiliations.
are made in accordance with the policies and procedures of those organizations and agreements for cooperation, if any, between such organizations and the university.

3. Purpose
The purpose of this policy is to guide members of the university community on matters of gift acceptance. This policy is intended to ensure the university can respond quickly and appropriately to all gift offers.

4. Principles Governing Gift Acceptance
- All gifts will be subject to review in accordance with this policy prior to acceptance.
- Acceptance of a gift will be conditional on compliance with university policy, procedures, guidelines, governance framework and applicable law, as well as consistency with the university’s objects, strategic plan, values and priorities.
- The university will not accept gifts that could reasonably compromise its public image, reputation or commitment to its objects, strategic plan, values and priorities.
- The university values and will protect its integrity and autonomy and the academic freedom of the members of the university community, and will not accept gifts when a condition of such acceptance would compromise these fundamental values.
- The university holds itself to the highest standards of ethical conduct in all of its external relationships and interactions, and reserves the right to decline a gift in any circumstance, including, but without limitation:
  - the donor applies unacceptable restrictions or conditions on the gift;
  - the gift will be unduly difficult or expensive to administer;
  - the gift exposes the university to legal risk or liability, including, but without limitation, risk or liability arising out of the contravention of applicable laws, such as the Human Rights Code (Ontario) or the Income Tax Act (Canada);
  - the gift is inconsistent with the university’s fundraising priorities, objects, strategic plan or values, including, but without limitation, protecting and fostering equity, diversity, academic freedom and academic integrity;
  - the gift is reasonably suspected to have come from illegal activities; or
  - the gift could improperly benefit any person.

5. Authority to Accept Gifts
The Board of Governors has delegated authority to the president to make decisions concerning the acceptance of gifts and he/she is accountable to the Board for such decisions. The president has the ultimate authority to make decisions to accept or reject gifts valued in excess of $2 million. The president may delegate his/her authority to accept or reject gifts valued at below $2 million to the vice-president, advancement.

6. Authority to Solicit, Negotiate and Receipt Gifts
The Office of Advancement has the primary authority to solicit, negotiate and receipt gifts on behalf of the university. It is also the responsibility of the Office of Advancement to ensure the highest standards of professionalism and ethics are followed in working with donors.

An individual outside of the Office of Advancement who wishes to engage in fundraising activity on behalf of the university must consult with the Office of Advancement and follow university policies, procedures and guidelines, including internal guidelines of the Office of Advancement, to ensure consistency, compliance and professionalism in all dealings with donors. An individual who is approached by a potential donor should refer such donor to the
Office of Advancement, or report the gift to the Office of Advancement and work with the Office of Advancement regarding the negotiation, documentation, acceptance and receipting of the gift.

If a gift accepted under this policy is intended to be documented in the form of a written agreement:

- the Office of Advancement must be engaged to assist with the writing and negotiation of the agreement;
- the agreement should follow the approved templates developed by the Office of Advancement in consultation with the Secretariat;
- if an approved template is not used or is altered, the gift agreement must be referred to the Secretariat for review or referral to external counsel;
- the agreement must be approved by the vice-president, advancement or his/her delegate;
- the agreement, or relevant aspects thereof, must be approved by the appropriate individuals or governing bodies, in accordance with university policies, procedures and guidelines;
- the agreement must be signed in accordance with the relevant signing procedure; and
- the agreement must also bear the signature of the most senior officer in the academic or academic support unit to which the gift is designated to the extent the relevant signing procedure does not already require that individual’s signature.

If a gift is determined by the Office of Advancement to be eligible for an official donation receipt in whole or in part, the Office of Advancement will issue such receipt on behalf of the university in compliance with the *Income Tax Act* (Canada), Canada Revenue Agency guidelines, and university policies, procedures and guidelines. No other individual is authorized to offer, promise or purport to issue an official donation receipt on behalf of the university.

7. **Fundraising Priorities**
Gift solicitation and acceptance is informed by and must advance the university’s objects, strategic plan, values and priorities as established by the *University of Waterloo Act 1972* or set by the collegial processes that govern decision-making at the university. In the context of the foregoing, the president will set fundraising priorities for the university in consultation with the vice-presidents and deans, with input and recommendations by the vice-president, advancement.

8. **Use of Professional Advisors by Donors**
The university cannot and does not provide any legal, accounting, tax, financial or other advice to donors with respect to gifts to the university. The university cannot suggest or endorse a third party as a source of professional advice. Donors are encouraged to discuss proposed gifts with an independent professional advisor of the donor’s choice and at his/her own expense to ensure the donor receives a full and accurate explanation of all aspects of the proposed gift. Where the university deems necessary, donors will be requested to provide the university with an acknowledgement that:

(a) The donor has obtained or has waived his/her/its right to obtain independent professional advice; and

(b) the University is released from any liability that may arise in relation to the making of the gift.

Donors may also be required to obtain, at their own expense, professional valuations for certain types of gift, in particular, gifts-in-kind, deferred gifts and gifts of securities in private
corporations. Further details regarding gift valuations can be found in the Gift Acceptance Guidelines.

9. Transparency
As a publicly-funded institution, the university is committed to principles of accountability and transparency and is subject to legislation governing access to information. Information regarding gifts to the university is public information, except to the extent its use or disclosure is restricted under Policy 8 or the Freedom of Information and Protection of Privacy Act (Ontario). Those fundraising on behalf of the university will inform potential donors of the foregoing when soliciting and negotiating gifts.

A list of all gifts of $250,000+ will be provided by the Office of Advancement to the Board of Governors and Senate annually.
Appendix A – Glossary

**Cash** – includes cash, cheque, credit card, payroll deduction and electronic fund transfer.

**Deferred gifts** – includes will bequests, life insurance policies, gift annuities and charitable remainder trusts.

**Gift** – has the meaning given to such term by the Canada Revenue Agency: a voluntary transfer of property without valuable consideration. In order to be characterized as a gift by the Canada Revenue Agency, a gift must satisfy the following conditions: (a) property is transferred by a donor to a registered charity; (b) the transfer is voluntary; and (c) the transfer is made without expectation of return. No benefit or advantage may be provided to the donor or to anyone designated by the donor, except where the benefit is of nominal value. Gifts may be in the form of cash, marketable securities, gifts-in-kind and deferred gifts.

**Gifts-in-kind** – a gift of property other than cash such as real (capital) property or personal property.

**Securities** – refers to privately or publicly held shares, flow-through shares, bonds, units of a mutual fund, stock options and charitable stock options.