**University of Waterloo\**

**BOARD OF GOVERNORS**

**Tuesday 4 June 2013**

**Meeting**

1:30 p.m.
Engineering 5, Room 3101

**Dinner**

(for governors and vice-presidents)
Immediately following the meeting
University Club

*Note: directions/parking information enclosed*

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Page</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30</td>
<td>Remarks from the Chair</td>
<td>Oral</td>
<td>Information</td>
</tr>
<tr>
<td>1:40</td>
<td>Agenda/Additional Agenda Items</td>
<td>Oral</td>
<td>Decision</td>
</tr>
</tbody>
</table>
| 1:45 | **Consent Agenda**

*Motion: To approve and/or receive for information by consent items 3 and 4 below.*

3. Minutes of the 2 April 2013 Meeting [enclosed] | Decision |

4. Report of the President
   a. Recognition and Commendation | 1-2 | Information |
   b. Sabbatical/Administrative Leaves and Administrative Appointments/Reappointments | 3-8 | Decision/Information |

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Page</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Business Arising from the Minutes</td>
<td>Oral</td>
<td>Information</td>
</tr>
<tr>
<td>1:50</td>
<td>a. Co-operative Education &amp; Career Action</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 2:00 | 6. Report of the President
   a. Strategic Plan 2013-17 and Next Steps
   • Q&A Period | 9 | Information |
| 2:40 | 7. Report of the Vice-President, Administration & Finance
   a. Tuition Fee Increases and Incidental Fee Changes | 31-35 | Decision |
| 3:00 | 8. Report of the Vice-President, Academic & Provost
   a. 2013-14 Operating Budget | 36-40 | Decision |
   b. Sabbatical, Tenure and Promotion Processes | Oral | Information |
   c. Undergraduate Admissions Update | Oral | Information |
| 3:50 | BREAK |
| 4:05 | 9. 2013 Killam Prize Winner: Professor Paul Thagard, Department of Philosophy | Oral | Information |
   • Q&A Period | Oral | Information/Discussion |
| 4:35 | 11. Reports from Committees
   a. Audit | 41 | Decision/Information |
<p>| 4:45 | b. Building &amp; Properties | 42-43 | Decision/Information |
| 4:55 | c. Finance &amp; Investment | 44-56 | Decision/Information |
| 5:05 | d. Pension &amp; Benefits | 57-73 | Decision/Information |</p>
<table>
<thead>
<tr>
<th>Page</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>74-77</td>
<td>Decision</td>
</tr>
</tbody>
</table>

### CONFIDENTIAL SESSION

5:25 **Consent Agenda**

*Motion:* To approve by consent items 13 and 14 below.

13. Minutes of the 2 April 2013 Meeting [enclosed]  
14. Report of the President  
   a. New Appointments with Tenure

### Regular Agenda

5:30 15. Business Arising from the Minutes  
   a. Report of the Vice-President, Advancement

5:40 16. Reports from Committees  
   a. Finance & Investment  
   b. Governance

5:50 17. Other Business

6:00 18. Report from the Governance Committee [to be distributed]  

6:20 BREAK — governors and vice-presidents to make their way to the University Club for dinner

6:40 **DINNER — University Club**  
   (Board to reconvene in Open Session)

19. Remarks from the Chair  
20. Remarks from the President

21. Strategic Plan (continued)  
   Oral  
   Information

**Note:** To allow the board to complete a number of matters quickly and to devote more of its attention to major items of business, the agenda has been divided between items that are to be approved and/or received for information by consent and those that are to be presented individually for discussion and decision and/or information.

A consent agenda is not intended to prevent discussion of any matter by the board, but items listed under the consent sections will not be discussed at the meeting unless a governor so requests. Governors are supplied with the appropriate documentation for each item and all items will be approved by means of one omnibus motion. The board will then move immediately to consideration of the items on the regular agenda.

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Please convey regrets to Tracy Dietrich at (519) 888-4567, x36125 or tdietrich@uwaterloo.ca
FOR INFORMATION

Recognition and Commendation

Professor James Forrest of the Department of Physics and Astronomy has won the prestigious Brockhouse Medal, along with Professor Kari Dalnki-Veress from McMaster University, in recognition of their shared accomplishments in the field of soft condensed matter physics. “This award acknowledges Professor Forrest’s commitment to excellence, and is indicative of both importance of his work and the respect he has of other scientists in his field,” said Terry McMahon, dean of the Faculty of Science. “The Faculty of Science appreciates his contribution, and I congratulate him on this notable recognition.” The Brockhouse Medal, which is sponsored jointly by the Division of Condensed Matter and Materials Physics and the Canadian Association of Physicists (CAP), recognizes excellence in research contributions to condensed matter and materials physics. It is named in honour of Professor Bertram Brockhouse, whose outstanding contributions to research in condensed matter physics in Canada were recognized with the 1994 Nobel Prize for Physics. Both professors will be presented with the 2013 CAP Brockhouse Medal at the 2013 CAP Congress taking place in Montreal from 27 May through 31.

Emily Peat, fourth year civil engineering student and owner of EcoPlace Organics, a local organic food delivery service, won first place at the Nicol Entrepreneurial Awards held in Ottawa on 26 March. Peat represented the University of Waterloo at the national competition after being selected in a cross-campus competition held at the Conrad Centre in February. Her win marks the first time since 2007 that the University of Waterloo has taken the top prize at the Nicol Awards. “The Nicol competition provided me with the opportunity to discuss my business plan with successful entrepreneurs and experts in different areas of business,” said Peat. “It forced me to think through exactly what my plan is for moving forward and growing. I am grateful for the experience.” She completed a co-op term in Conrad’s Enterprise Co-op program and also took BET 300: Foundations of Venture Creations, run out of the Conrad Centre. Peat also recently won $20,000 at the Ontario Centres of Excellence Social Enterprise Student Competition on 21 March and was a top four finalist at the National Business and Technology Conference on 8 March.

The winners of the 2013 Evolve Sustainable Design Competition were announced recently, with Waterloo architecture and engineering students Renee Hum-Hsiao, Elaina Poleto, Keegan Steeper, Joanne Yau and Thomas Yuan receiving first prize for their design of an environmentally sustainable bank branch of the future. The winning team received $5,000 and an opportunity to meet with some of Canada’s top architecture professionals at B+H Architects. In addition, the University of Waterloo student team of Alice Chen, Alan King Bowden, Andrea Ng, Alice Song and Mina Vedut received an honourable mention and a $2,500 prize. The competition challenged architecture and engineering students to work together in interdisciplinary teams to design a net-zero energy and water-wise bank branch of the future that incorporates innovative yet practical concepts for achieving extreme energy efficiency, includes renewable power and minimizes the branch’s water. Students were asked to explore the design and function of a typical bank branch and develop ways to minimize its energy and water use, while providing a platform for employees, clients and the community to learn about how sustainable building practices can be made part of everyday life. “The winning submissions used a great balance of technology and passive design – strategies that maximize the benefits of natural light, heat and ventilation – to meet the goals of the competition,” said Douglas Birkenshaw, principal at B+H. “The dedication and quality of submissions by all of the students was inspiring.” The winning team’s design features included hydronic radiant floors powered by geothermal systems to heat the building, photovoltaic cells integrated into
windows to generate electricity, grey water filtration systems, and a system that distributed natural sunlight through fibre optic tubing to interior spaces. The contest was sponsored by RBC and B+H. [22 April 2013 Daily Bulletin]

A team of four Waterloo environmental engineering students took first place in Task 3 at the 22nd annual International Environmental Design Contest held early April at New Mexico State University. The competition was organized by the WERC Consortium and the Institute for Energy & the Environment. Held annually since 1991, the contest draws hundreds of college and university students from across the United States and around the world. Student teams design solutions for real-world problems while developing fully operational bench-scale solutions that are then presented to panels of judges comprised of environmental professionals. The teams prepare four different presentations: written, oral, poster and a bench-scale model. The team also received 2nd place among all tasks when judged by the other contestants for the bench-scale and poster presentations. Team members included Lindsay Bowman, Victoria Chennette, Beth Hamley and Laurel Hoffarth. The team was supported by Shoeleh Shams, a PhD candidate in civil & environmental engineering, and Jon Sykes, who was the faculty advisor. The team’s project, entitled “Nitrate Removal in Rural Drinking Water Using Electrocoagulation,” presented the design, testing and implementation of a treatment system for nitrate removal from groundwater. The project details the prominence of groundwater used as a source of drinking water, the potentially devastating health effects when contaminated by nitrate, and alternative methods to remove nitrate. The team’s solution to use electrocoagulation as the preferred alternative was an innovative choice that proved to be successful within the competition. [22 April 2013 Daily Bulletin]

The University of Waterloo Nanorobotics Group (UW_NRG) took first prize in the Mobile Microrobotics Challenge (“in which microrobots on the order of the diameter of a human hair face off in tests of autonomy and mobility”) at the 6-10 May IEEE International Conference on Robotics and Automation held in Karlsruhe, Germany. This is the second time the team, made up of undergraduate students from nanotechnology engineering supported by colleagues in computer science and arts, has won the competition, beating graduate and post-doctoral candidates from top international institutions. The team used “advanced micro-scale technology” to control the speed and agility of its competitive microrobot “with unmatched precision,” finishing three runs with a final average time of .33 seconds. “The implications of this performance can lead to progressive leaps in the development of micro-scale applications from targeted drug delivery and minimally invasive surgery to advanced electronics manufacturing,” says a statement from UW_NRG. [16 May 2013 Daily Bulletin]

Chau-Minh Phan, PhD student in the School of Optometry and Vision Science, placed third at the provincial finals of the Three-Minute Thesis competition, held recently at Queen’s University. Thirty graduate students from 16 Ontario universities were competing to become the first to win the championship trophy for their school. The winner of the provincial finals was University of Toronto medical biophysics PhD student Jasdeep Saggar, who presented “Hypoxia-activated pro-drugs: A novel approach for breast cancer.” She received $1,000. In second place was University of Toronto computer science PhD student Abraham Heifets with “How can we make better medicines? Computer tools for chemistry.” Five judges were enlisted to score each participant in three categories – comprehension, communication and engagement. The judging panel included Rob Baker, guitarist for the Tragically Hip, marathon swimmer Vicki Keith, lawyer Hugh Christie, economist Donald Drummond, and Peter Gooch of the Council of Ontario Universities. Chau-Minh Phan’s presentation was entitled “Treatment of Fungal Eye Infections using contact lenses and nanoparticles.” [23 April 2013 Daily Bulletin]
1. Sabbatical/Administrative Leaves

UW Policy 3, Sabbatical and Other Leaves for Faculty Members [excerpts below, full text available at: http://www.adm.uwaterloo.ca/infosec/Policies/policy3.htm], sets out the purpose of leaves for faculty members as well as the requirements/responsibilities of faculty who are granted such leave.

The granting of a leave depends on the University’s assessment of the value of such leave to the institution as well as to the individual, and on whether teaching and other responsibilities of the applicant can be adequately provided for in her/his absence. A faculty member who is granted a sabbatical or other leave is expected to return to duties in the University for at least one year and upon return will be expected to submit a brief report to the Department Chair regarding scholarly activities while on leave.

The purpose of a sabbatical leave is to contribute to professional development, enabling members to keep abreast of emerging developments in their particular fields and enhancing their effectiveness as teachers, researchers and scholars. Such leaves also help to prevent the development of closed or parochial environments by making it possible for faculty members to travel to differing locales where special research equipment may be available or specific discipline advances have been accomplished. Sabbaticals provide an opportunity for intellectual growth and enrichment as well as for scholarly renewal and reassessment.

... the granting of sabbatical leave is contingent upon the faculty member’s department being able to make the necessary arrangements to accommodate such an absence, and also upon the financial resources of the University in any given year. Should problems arise in any of the above, it may be necessary to postpone individual requests until such time as all the conditions can be satisfied.

- Sabbatical Leaves
  - Basir, Otman, Electrical and Computer Engineering, September 1, 2013 to August 31, 2014 at 85% salary
    
    *I plan to spend four months of my sabbatical leave in Libya to cooperate with Libyan researchers in conducting research in advanced computing. I will spend the rest of my sabbatical leave with the ONE-ITS group at the University of Toronto to conduct research in Intelligent Transportation Systems. I plan to maintain active engagement with my students to ensure their productivity in publishing their research work and advancing their research projects. I plan to complete the writing of one book on sensor management.*

  - Bizheva, Kostadinka, Physics and Astronomy, September 1, 2013 to February 28, 2014 at 100% salary
    
    *My leave will be used to a) jump start a recently funded collaborative CHRP project “Intraoperative Optical Coherence Tomography for corneal transplant surgery in Keratoconus”; b) prepare new collaborative grant applications (NIH, CIHR, HFSP) as the principle applicant with submission dates Sept-Nov 2013; c) visit Dr. Bui at the University of Melbourne for a collaborative study on animal glaucoma model.*

  - Calamai, Paul, Systems Design Engineering, September 1, 2013 to August 31, 2014 at 100% salary
    
    *Society’s response to a number of pressing problems involves engineered or scientifically-based design. In face of today’s social and environmental challenges traditional rule-of-thumb or accepted practice approaches to such problems can result in designs that under-perform or are inappropriate. The focus of this leave will be on formulating these design problems using...*
configuration optimization so that characteristics, size, shape, and relative position of this design components can be optimized to meet these challenges.

Cañizares, Claudio, Electrical and Computer Engineering, March 1, 2014 to August 31, 2014 at 100% salary
During my sabbatical I will work on eight research grants and contracts in the areas of smart grids, microgrids and power system analysis with seventeen graduate students and four researchers. As well as my commitments to these research projects, I will be catching up on several pending publications. I will also continue to strengthen collaborations with colleagues in Italy, Chile, Australia and Brazil.

Chan, Timothy, Computer Science, September 1, 2013 to August 31, 2014 at 100% salary
I will continue my research on fundamental problems in computational geometry, geometric data structures, and algorithms.

Danckert, James, Psychology, September 1, 2013 to February 28, 2014 at 100% salary
There are two purposes to my leave: first to learn a new technique (transcranial magnetic stimulation) and second to establish a new collaboration with a world leader in my field (Dr. Jason Mattingley). Both aims will be achieved by travel to Australia to the University of Queensland to learn TMS and conduct novel research with Dr. Mattingley.

Dea, Shannon, Philosophy, September 1, 2013 to August 31, 2014 at 85% salary
I will use this leave to finish my monograph on Charles Sanders Peirce and early modern philosophy, as well as a textbook on the Philosophy of sex. I will also develop four or five recent conference talks into journal articles. I will spend the leave at University of Sheffield, where I will participate in a new three-year project there on pragmatism and idealism.

Dimitrov, Stanko, Management Sciences, November 1, 2013 to April 30, 2014 at 100% salary
With my collaborators, I will finish current research projects on pricing in advertising and work on developing approximation algorithms for Markov decision processes. I expect to submit between 4 and 7 papers for publication by the end of my sabbatical.

Douglas, Peter, Chemical Engineering, September 1, 2013 to August 31, 2014 at 100% salary
I plan to spend my sabbatical working with graduate students and industrial partners catching up on research on modelling, control and optimisation of CCS (Carbon Capture and Storage) systems. I currently have 5 PhD and 1 MASc students that I am co-supervising.

Drescher, Michael, Planning, July 1, 2013 to December 31, 2013 at 100% salary
The focus of my leave will include research into private land conservation initiatives and into climate change effects on forest regeneration. Another focus will be increased engagement with local/regional conservation organizations to create new research opportunities with direct relevance to conservation related stakeholder groups.

Flanagan, John, Optometry and Vision Science, September 1, 2013 to August 31, 2014 at 100% salary
To better understand the glaucomas I will develop new skills in cellular and molecular biology, particularly with respect to glial activation and neuroprotection. I will work with Dr. Jeremy Sivak, UofT and colleagues at UC Berkeley. I will complete unfinished manuscripts, develop a new web based glaucoma text, and attempt to add to my CIHR funding.

Giangregorio, Lora, Kinesiology, September 1, 2013 to August 31, 2014 at 93.3% salary
I will focus on implementation of a CIHR-funded multicentre trial in Ontario, British Columbia and Melbourne, Australia. I will also finalize knowledge syntheses and research to inform the development exercise recommendations for individuals with osteoporosis, a knowledge
A translation project I am working on in partnership with Osteoporosis Canada. I will also focus on professional development via reading and working with collaborators and knowledge users.

**Jernigan, Edward**, Environment, Centre for Knowledge Integration, August 1, 2014 to July 31, 2016 at 100% salary
Continue to develop and sustain outreach programs including Waterloo Unlimited and Shad Valley, mentor and support incoming Director of Knowledge Integration and new faculty hires, assist university and Faculty of Environment in development efforts toward sustainable funding models for Unlimited and Knowledge Integration.

**Kofman, Jonathan**, Systems Design Engineering, September 1, 2013 to August 31, 2014 at 85% salary
The sabbatical period will be spent on graduate student supervision, conducting research in 3D imaging techniques and rehabilitation and assistive technology, preparing grant applications and publishing research in refereed journals and conferences. I will also develop collaborative relationships with potential industry partners toward commercialization of 3D imaging technology, and toward new collaborative research projects and grant applications in 3D systems.

**Lakshminarayanan, Vasudevan**, Optometry and Vision Science, September 1, 2013 to August 31, 2014 at 94% salary
I will be spending my sabbatical leave as an American Association for Advancement of Science (AAAS), Science and Technology Policy Fellow in Washington, DC working on science and education policy issues. In addition I will be completing a book on optics with biomedical applications.

**Li, Pengfei**, Statistics and Actuarial Science, November 1, 2013 to April 30, 2014 at 100% salary
During my leave, I plan to finish three research projects: (1) hypothesis testing in correlated unordered pairs; (2) semi-parametric inference in a complex genetic model; (3) density estimation in a two-sample problem with ratio ordering constraint. I also plan to work with colleagues and students to identify new research topics, and visit collaborators to start new projects.

**Lin, Haiying**, Environment, Enterprise and Development, September 1, 2013 to February 28, 2014 at 100% salary
I will collaborate with colleagues [in London (ON), Paris, Hong Kong and China] on several research projects, including: characterizing strategic alliances for Eco-city initiatives; analyzing influencing factors of alliance size and their implications on alliance performance; analyzing drivers for businesses to adopt ISO standards and whether adoption of these standards can lead to better environmental performance; exploring the association between business environmental strategies and their alliance configuration choices.

**Ma, Bin**, Computer Science, September 1, 2013 to August 31, 2014 at 85% salary
I plan to dedicate a large amount of my research time on the protein de novo sequencing problem. I will visit several collaborators for short periods to conduct collaborative research projects (City University of Hong Kong, Xi’an Jioitang University, Nanyang Technology University). The remaining time will be spent in Waterloo doing research and supervising graduate students.

**Meiering, Elizabeth**, Chemistry, July 1, 2013 to December 31, 2013 at 100% salary
Develop new collaborative research on hisactophilin with Dr. Levy’s group. Explore protein research, the role of non-native interactions in folding and function. Work on a project on protein design and expression in bacteria. Write papers on a backlog of data that has accumulated from ongoing studies in my lab. These activities will be very valuable for the continued vitality of my research program.
Michela, John, Psychology, January 1, 2014 to December 31, 2014 at 85% salary
I will consolidate my research on leadership in the form of a book, primarily, and associated journal articles. I have been examining when and how a leader’s pronouncement of a “vision” for beneficial change motivates followers to action that supports the vision. My writings will explain the roles of follower voice or other input, personal values, and identity.

Mock, Steven, Recreation and Leisure Studies, January 1, 2014 to June 30, 2014 at 100% salary
I plan to analyze data and prepare manuscripts based on my SSHRC-funded study of LGBT-focused sport groups and prepare for the next grant application. I will also be taking on the directorship of the RBC Retirement Research Centre at UW in the fall of 2013, and the leave will allow me to invest additional time to supporting the centre.

Packalen, Mikko, Economics, September 1, 2013 to February 28, 2014 at 85% salary
I will continue research collaborations with Jay Bhattacharya (Stanford University) on the value and drivers of innovativeness in science and invention and with Tony Wirjanto (University of Waterloo) on statistical inference. I will spend the year at the Economics Department of Aalto University in Helsinki, which has a number of faculty whose research interests intersect with mine.

Power, Michael, Biology, September 1, 2013 to February 28, 2014 at 100% salary
Fulfilling publication obligations on salmonid ecology, arctic char, climate change, biodiversity and northern freshwater sponsored by the International Polar Year program. Also to launch a probable NSERC strategic network grant application for freshwater biodiversity.

Prentice, Stephen, Kinesiology, September 1, 2013 to August 31, 2014 at 100% salary
Focus on research endeavours addressing adaptability of human locomotion after current service and teaching duties. Bolster collaborations with national and international colleagues within the gait and posture research community. Here I intend on establishing specific empirical and analytical techniques as well as learning new paradigms. My intention is to better understand normal and pathological movements in various walking environments.

Revington, Dereck, Architecture, September 1, 2013 to August 31, 2014 at 94.7% salary
I won two major Public Art/Architectural Competitions in the City of Toronto: Illuminating the Prince Edward Viaduct and BlueGold Variations, Windermere Ave. The first is comparable in scale to the Lighting of the CN Tower and has a deadline for its completion in time for the opening of the PanAm Games in 2015. The second goes into production in the middle of May 2013. Both works deploy advanced digitally controlled LED technology, responsively indexing changes in temperature, wind velocity and ambient motion to transforming chromatic cycles. Design Development, production and installation of BlueGold Variations will span the duration of my sabbatical as will the Design Development, Specification and tendering of the engineering, lighting and digital controls for the illumination of the viaduct.

Safayeni, Frank, Management Sciences, September 1, 2013 to August 31, 2014 at 100% salary
I am planning to write a book on the impact of the categorical nature of language on formulation of theories and conduct of research in organizational science. More specifically, the book will illustrate many examples of shortcomings of current theories which are the result of ambiguities and the surplus meaning of the words used to describe the theory.

Siegel, David, Applied Mathematics, September 1, 2013 to August 31, 2014 at 85% salary
I plan to finish a number of outstanding projects, short visits to work with collaborators, attend conferences and to work on a monograph on mathematical aspects of chemical kinetics.
Sillato, Maria del Carmen, Spanish and Latin American Studies, January 1, 2014 to June 30, 2014 at 90.6% salary
During my leave I will advance in the production of a manuscript based on my present research project. The main goal of this project is to study the different genres and narrative/rhetorical strategies used by Argentine authors of the last thirty years in the reconstruction of past and present historical events in order to contribute to the preservation of the collective memory.

Spencer, Steven, Psychology, July 1, 2013 to June 30, 2014 at 100% salary
I will be developing an intervention to improve women’s performance in engineering, which is the subject of my current grant and methodological paper on interventions.

Teske-Wilson, Edlyn, Combinatorics and Optimization, September 1, 2013 to August 31, 2014 at 85% salary.
My leave will be spent at the University of Waterloo conducting research on Solving the Elliptic Curve Discrete Logarithm Problem using Semaev Polynomials and Groebner Basis Methods, research on Code-Based Cryptography and research on the Discrete Logarithm Problem in Characteristic Two Fields. Program Committee of Ants X. conferences: ECC 2013 in Belgium (September 2013) and Ants X in South Korea (August 2014).

Thompson, James, Accounting and Finance, September 1, 2013 to February 28, 2014 at 100% of salary
I intend to further my research on financial crises and regulation as it applies to financial stability. Various visits will be made to the Bank of Canada to converse with Canadian policy makers.

Vavasis, Stephen, Combinatorics and Optimization, September 1, 2013 to August 31, 2014 at 85% salary
I will investigate algorithms based on matrix factorization for problems in data mining and information retrieval. I will be based in Athens, Greece at an institute operated by the university. I will build my own previous work in this area, including joint work with N. Gillis.

• Administrative Leaves
Douglas, Peter, Chemical Engineering, September 1, 2014 to December 31, 2014, at 100% salary
[See description above, sabbatical leave September 1, 2013 to August 31, 2014]

Sillato, Maria del Carmen, Spanish and Latin American Studies, September 1, 2014 to December 31, 2014, at 100% salary
[See description above, sabbatical leave January 1, 2014 to June 30, 2014]

FOR INFORMATION

2. Administrative Appointments/Reappointments
Ager, Sheila, reappointment as Chair, Classical Studies, Faculty of Arts, May 1, 2013 to April 30, 2017.

Bruce, Gary, appointment as Chair, History, Faculty of Arts, January 1, 2014 to June 30, 2017.

Fieguth, Paul, reappointment as Chair, Systems Design Engineering, Faculty of Engineering, September 1, 2013 to August 31, 2017.

Furino, Steve, appointment as Associate Dean, Undergraduate Studies, Faculty of Mathematics, July 1, 2013 to June 30, 2016.
Helleiner, Eric, appointment as Acting Chair, Political Science, Faculty of Arts, July 1, 2013 to June 30, 2014.

Legge, Raymond, appointment as Associate Dean, Graduate Studies Office, July 1, 2013 to June 30, 2017.

Li, Yuying, appointment as Associate Dean, Graduate Studies, Faculty of Mathematics, July 1, 2013 to June 30, 2016.

Loucks, Wayne, reappointment as Associate Dean, Undergraduate Studies, Faculty of Engineering, July 1, 2013 to December 31, 2015.

MacDougall, Heather, appointment as Acting Chair, History, Faculty of Arts, July 1, 2013 to December 31, 2013.

McIlroy, William, appointment as Chair, Kinesiology, Faculty of Applied Health Sciences, July 1, 2013 to June 30, 2017.

Murphy, Paul, appointment as Director, School of Optometry and Vision Science and Associate Dean of Science for Optometry, Faculty of Science, April 1, 2013 to March 31, 2017.

Park, Robert, reappointment as Associate Dean, Computing, Faculty of Arts, July 1, 2013 to June 30, 2014.

Shipley, Robert, appointment as Acting Director, School of Planning, Faculty of Environment, July 1, 2013 to December 31, 2013.

Spafford, Marlee, appointment as Associate Dean, Undergraduate Studies, Faculty of Science, April 1, 2013 to March 31, 2016.

Administrative Appointment Changes
Boychuck, Gerry, appointment as Chair, Political Science, Faculty of Arts, change from January 1, 2012 to December 31, 2015 to January 1, 2012 to June 30, 2013, and July 1, 2014 to December 31, 2015.

Meiering, Elizabeth, appointment as Associate Dean, Graduate Studies Office, change from January 1, 2011 to December 31, 2014 to January 1, 2011 to June 30, 2013.
FOR INFORMATION

Introduction

I will invite discussion and comment throughout the course of my presentation, which will focus on two main areas.

Activity Review

I will provide a brief review of some of the major achievements and activities that the University of Waterloo has been involved with since our last meeting, including the awarding of Killam Prizes, my attendance at the 2013 Milken Global Conference, and a recap of the Executive Council retreat which took place last month.

Strategic Plan

My core area of focus at this time is the university’s new strategic plan. I will provide a review of the approval process to date – including Senate’s decisive endorsement of the plan – as well as an overview of our implementation plans.

Feridun Hamdullahpur
President
27 May 2013

Delivered by Courier

Members of the Board of Governors
University of Waterloo

Dear Governors:

I am pleased to attach a copy of the university’s proposed strategic plan to be discussed at the meeting of the board scheduled for 4 June.

The draft has been prepared following extensive consultation with the university community, and we are confident that:

- The plan sufficiently captures the strategic direction that the university ought to pursue over the next five years, and that it is written at the appropriate level of precision.
- The priorities of the university are properly and clearly identified.
- The “Values” section of the plan is an important statement by this university, and that it is an appropriate statement at this moment in the university’s evolution.
- The plan is a realistic, realizable plan, and that progress on meeting the objectives set out in the plan will be measurable through a set of clear, targeted metrics.

The university has benefited a great deal from input received from members of our Board of Governors. We look forward to continuing the conversation, both at the June board meeting and as the plan is refined and implemented over the course of the next five years.

Yours truly,

[Signature]

Dr. Logan Atkinson FCIS
Secretary of the University
The University of Waterloo was founded in the aspirational era following the Second World War, a time when the world was rapidly rebuilding and racing to create a new and better future. New industries and technologies were emerging, with space seen as the new frontier. Sophisticated practical skills were urgently needed, and Waterloo's unique approach to higher education was seen as the solution to this growing societal need. The mission was to educate graduates with impeccable academic knowledge and the ability to fast track into employment, a skill derived from work terms in their chosen field. Co-op education started in 1957 in engineering, then spread to science and mathematics, and subsequently to all other Faculties.

Recognizing the value of early computers as a teaching and research tool, Waterloo was an early adopter of the technology, and on the vanguard of the information age. Starting in the 1960s, information technology innovations flourished at the university, including WATFOR and WATFIV, early FORTRAN compilers that revolutionized efficient compilation and put Waterloo's computer science program on the international map. From there, Waterloo developed globally recognized high-technology expertise, which fuelled significant economic spin-offs. The growth of many start-up companies helped earn the region around the university a reputation as the “Silicon Valley of the North.”

Springing from Waterloo's unique history is a strong culture of innovation and a can-do attitude in its students, faculty and staff. A tradition of incorporating relevance and applicability into teaching and research programs is inspired by Waterloo's longstanding commitment to meet the intellectual and practical challenges that arise from societal change. A strong track record of engagement with industry — evolving from co-op and continuing through our research programs — fosters an innovative and entrepreneurial culture.

Waterloo's contribution to the world at large has taken many forms:

- **Producing outstanding and employment-ready graduates** as an outcome of world-renowned co-op programs, which blend academic learning with work experience. These programs act as a bridge between Waterloo and the world outside, underscoring relevance as one of the university's foundational principles. Academic knowledge, job readiness and confidence keep Waterloo graduates in high demand with employers. Over the last decade alone, 139,000 students in over 140 different programs registered for undergraduate co-op work-terms. In the last four years, Waterloo students undertook work terms in 97 different countries. In 2013, more than 17,500 students will develop their
talent and offer value to more than 3,000 co-op employers. This array of employers provides Waterloo students with a more diverse and stimulating range of workplace experiences than is available anywhere else.

- **Entrepreneurial successes** achieved by students, faculty and staff. OpenText, Maplesoft, Certicom and Teledyne DALSA are just a few of the well-known companies started by faculty members. Desire2Learn and Public History Inc. are entrepreneurial successes founded by Waterloo alumni. Undoubtedly the best-known business success associated with the university is BlackBerry (formerly Research in Motion). All of Waterloo’s past and potential entrepreneurs benefit from the university’s Intellectual Property (IP) policy whereby ideas or products commercialized by students, faculty or staff members belong solely to the creator. Entrepreneurial enterprises are further supported by strong connections between Waterloo research and industry.

- **Ongoing innovation and entrepreneurship.** Innovative and creative approaches to research, teaching and learning are sought from — and achieved by — Waterloo’s faculty and staff, and inspired in its students. For example, to support a growing number of students interested in entrepreneurship, the university in 2008 established VeloCity, a living-learning community of like-minded entrepreneurial students. At VeloCity, students have access to the latest technologies and are mentored by a network of entrepreneurial experts. In 2010 VeloCity Garage was set up to provide students and alumni with access to free space and expert mentoring to assist in advancing successful start-ups. From these initiatives, as of April 2013, 45 companies have been created, generating more than 250 jobs and attracting more than $90 million in investment capital. In 2012, the VeloCity Campus program began to expand entrepreneurial programs and mentorship to the broader student community.

- **Excellence in research.** Research and scholarship will continue to be a driving force for Waterloo’s professoriate. Currently, Waterloo has 26 active Fellows of the Royal Society of Canada, two Canada Excellence Research Chairs (CERCs), 62 Canada Research Chairs (CRCs) and, 23 industrial and endowed Chairs. According to Research Infosource, Waterloo has been Canada’s top ranked comprehensive research university for five consecutive years. As one of Canada’s 15 research-intensive universities, Waterloo can boast 34 Senate-approved centres or institutes of research across many disciplines. These include WatCAR, which focuses on the automobile industry, the Water Institute (WI), the Research Institute on Aging (RIA), the Propel Centre for Population Health Impact, the Games Institute and the Waterloo Institute of Sustainable Energy (WISE). These research ventures are underpinned by a distinguished professoriate whose reputation draws top-level graduates from around the world.

- **Persistently seeking out the cutting edge of discovery.** Waterloo is poised once
again to lead the world in the revolutionary fields of quantum computing and nanotechnology, which have the potential to transform the world as we know it — from how we share and store information, to the ways we diagnose and treat disease. The recently opened Mike & Ophelia Lazaridis Quantum-Nano Centre is home to the Institute for Quantum Computing (IQC) and the Waterloo Institute for Nanotechnology (WIN), which attract some of the finest minds in these fields.

- Applying Waterloo’s customary forward-looking vision to respond to key educational advances by incorporating innovation, relevance and value in curriculum development and delivery. This includes technology-enabled learning, allowing a growing number of courses to be accessible online to a broad set of learners in Ontario and beyond. A pioneer in distance education going back to 1968, Waterloo is now one of the largest institutions of online learning in Ontario, offering 297 online courses; five fully online undergraduate degree programs; and 11 approved online graduate programs with more in development. A major grant is allowing the Conrad Business, Entrepreneurship and Technology Centre to use advanced learning technology systems to create and deliver a unique Virtual Incubation Program to support the development of local, Canadian and international entrepreneurs.

- The ability to attract highly qualified students and a research-oriented professoriate from around the world brings an international dimension to Waterloo’s student body, to its research endeavours, and to its connectivity. This international dimension includes collaboration with global business enterprises, governmental agencies and other major academic institutions. It also accounts for the university’s involvement in social and environmental issues in Canada and in countries around the world.

International students from more than 90 countries make up 30 per cent of Waterloo’s graduate student body and 12 per cent of its undergraduates. In addition, the university has 350 educational and research agreements with institutions in 60 countries outside of Canada, and offers co-op opportunities in 90 countries. Waterloo students also have the opportunity to work abroad through the university’s co-op program, with approximately 700 international co-op work terms each year.

Little wonder that, for 21 consecutive years, Maclean’s magazine has named Waterloo Canada’s most innovative university; and for 14 of the past 21 years has named this institution most likely to produce “the leaders of tomorrow.” The university is proud of its many successes.

Responding to the challenges of rapidly changing social, environmental and economic conditions, the University has embarked on a comprehensive strategic planning process in order to identify new opportunities to serve society as effectively as possible, further advancing its reputation for excellence, innovation and relevance.

University of Waterloo: Strategic Plan: 2013-2017
STRATEGIC PLANNING PROCESS

Waterloo’s mission is charted in the University of Waterloo Act as “the pursuit of learning through scholarship, teaching and research within a spirit of free enquiry and expression.” Over the last several years, the university has been guided in this mission by the Sixth Decade Plan, formulated in 2006. At the midway juncture, a review of its goals and objectives was undertaken in the light of changing world conditions. The Mid-cycle Review involved a series of wide-ranging consultations with key stakeholder groups — students, faculty, staff, alumni, donors and selected community leaders.

The review highlighted priorities for the next five years that build on the university’s foundational pillars: academic excellence, research excellence and impact, co-operative education, graduate studies, internationalization, and entrepreneurship.

Three key areas were identified for advancement and now guide the university’s strategic direction for the future:

- Research excellence and impact
- Educational quality and teaching excellence
- Student opportunities and experience

INTO THE FUTURE

A singularly powerful and long-standing principle of the University of Waterloo is to anticipate the needs of society and respond effectively as challenges arise. This principle was a key motivator behind both the founding of this institution and its early commitment to creative thought, applied knowledge and experiential learning. Waterloo looks to the future with energy, enthusiasm and commitment to its core strengths, while identifying key new areas of discovery, innovation and application that will further elevate its reputation as a research powerhouse offering superior quality education.

Profound change — occurring at breakneck speed — is a defining characteristic of our era. Institutions that aspire to greatness must eagerly embrace change. In the future, successful universities will be defined by the ability to meet emerging challenges. In this regard, Waterloo will add to its record of success by mobilizing its strengths — research and scholarship and purposeful in-depth teaching and learning — in new ways and with a clear and accurate understanding of the world.

Relevance will be defined in global terms, not regional or national. Impact will be measured against higher standards not just of academic learning, but also of contribution to society’s well-being. This is where Waterloo excels, and will continue to do so with unwavering commitment.
1. **Groundbreaking Research**

Landmark research — addressing major challenges that arise from the interaction of social, economic, scientific, technological, health and policy issues — calls for input and collaboration from the finest scholars. Waterloo has built a reputation for excellence in research across all six of its Faculties and in many disciplines.

For example, the university’s renown in the fields of computer science, discrete mathematics, cryptography and biostatistics has emerged from the Faculty of Mathematics. The Faculty of Science is recognized for prominence in the natural sciences including ecotoxicology, aquatic biology, analytical and materials chemistry, earth sciences, condensed matter physics and astronomy; as well as in the applied sciences including neuroscience, ocular pathology, technology and optics and drug delivery within the Schools of Optometry and Pharmacy.

In the Faculty of Engineering, more than 1,000 industry and government partners support leading-edge research in information and computer technologies, automotive, sensors and intelligent infrastructure, water treatment, biomedical devices and biotechnology, nano- and micro-technologies, design, modeling and systems optimization. The Faculty of Applied Health Sciences is a global leader in the development of strategies that improve well-being through advanced research in chronic disease prevention and management, healthy active aging, youth health, public health policy and practice, nutrition, and human movement.

Waterloo’s Faculty of Arts is changing the landscape of social sciences and humanities research by harnessing new technologies and methodologies to traditional modes of analysis so as to generate new insights into the human condition in areas including finance and accounting, social psychology, digital media, science and technology studies, languages, literature and culture, international governance and public policy.

Within the Faculty of Environment, interdisciplinary groups collaborate with other Faculties to solve climate change, water, energy, food systems, ecological restoration, and urban planning issues through science and policy. The Faculty’s new teaching and research initiatives in green entrepreneurship and corporate social responsibility are setting a new agenda for social entrepreneurship and innovation.

Pressing and emerging global challenges will increasingly be addressed through collaboration across disciplines. Waterloo will continue to support and nurture the interdisciplinary culture that fuels our globally-recognized research institutes.

The Institute for Quantum Computing (IQC) brings together mathematics and physics, positioning Waterloo as an authoritative source of insight, analysis and commentary on quantum information. Researchers from science and engineering come together in the
**Waterloo Institute for Nanotechnology** (WIN), where they undertake groundbreaking research into the observation and manipulation of matter at the atomic scale to further our scientific understanding, and to devise applications that will lead to new materials and devices in such fields as biomaterials, medicine and electronics.

More than 125 Waterloo researchers from many disciplines collaborate in the **Water Institute** (WI), engaging in research both scientific and management-related to ensure the sustainability of global water resources. The **Games Institute** is set to begin interdisciplinary research into game-related interactions and technologies, as well as to improve understanding of social and behavioural ramifications of gaming. And the new **Research Institute for Aging** (RIA) will draw on the expertise of researchers, educators, caregivers, seniors and families in order to build an inclusive knowledge base to support the development of innovative and relevant educational and training programs.

Building on this foundation of excellence, Waterloo’s research capabilities will continue to thrive, fuelling this institution’s growth. Basic, foundational research of the highest calibre will continue to be undertaken by faculty and students. Research activities and output will continue to be integrated into both co-op and non-co-op programs. Research and scholarship will continue to be a driving force for Waterloo’s professoriate.

The original knowledge created within Waterloo will achieve even greater relevance as it is promoted and disseminated throughout an industrial and business community urgently seeking innovative concepts to commercialize. This longstanding Waterloo tradition will be the pillar that will ensure this institution’s future as a leader in research productivity, application and commercialization.

**Goal:** Increase the worldwide impact and recognition of University of Waterloo research

**Objectives:**
- Enable conditions which support research excellence and impact
- Identify and seize opportunities to lead in new/emerging areas
- Increase interdisciplinary and transdisciplinary research at the global, national and local scale
- Strengthen the relationship between research and teaching at the undergraduate level
- Build wider awareness and understanding of Waterloo’s research productivity and impact

**These objectives will be achieved by:**
- Attracting and retaining premier level scholars, researchers and staff
- Fostering a supportive environment for research by facilitating access to adequate funding resources, information, space and facilities
• Providing strategic expertise to maximize research grant success
• Diversifying funding resources beyond Tri-Council sources
• Encouraging research networks which build on partnerships with internationally recognized universities
• Providing and facilitating opportunities for interdisciplinary and transdisciplinary research
• Providing opportunities for undergraduate students to engage in research, across all disciplines
• Celebrating the research successes of students, faculty, staff and alumni
• Pursuing prestigious national and international awards for faculty
• Creating a new marketing and communications initiative to build profile for the wide and varied accomplishments of the Waterloo research community
• Continuing to be an effective pipeline for high-quality research to meet the needs of business, industry, government and civil society

2. Unrivalled Entrepreneurship Opportunities

Innovation in teaching, research and scholarship, and experiential learning — best exemplified by co-op education — are longstanding pillars of this institution. Together they have underpinned Waterloo’s distinctive success in entrepreneurial pursuits. Waterloo is uniquely placed among universities to address the growing societal need for both commercial and non-commercial knowledge discovery and entrepreneurial output.

Entrepreneurship is promoted both in academic programs and in practice at Waterloo. The university offers a unique graduate degree in the subject through the Conrad Business, Entrepreneurship and Technology Centre. The centre also manages a rapidly growing Enterprise Co-op program combining academic student and entrepreneurship work terms, which has seen a 10-fold increase in undergraduate demand in the last three years. At the undergraduate level, Waterloo takes an unconventional approach to Business education by linking it to specific disciplines as in degree programs including: Arts and Business, Environment and Business, Computer Science and Business Administration, Recreation and Business and Science and Business. The latest addition to these binary degrees is Recreation and Sports Business. Our co-op program is perhaps the most fruitful educational format for new practical knowledge and product development, as work term opportunities allow students to observe and participate in innovation in the marketplace or laboratory.

Waterloo has created a vibrant ecosystem of entrepreneurship within the university. Entrepreneurial practices are encouraged and range from start-ups devised by student innovators, to radical knowledge discovery in the fields of quantum computing and nanotechnology that promise new applications in the industrial arena. Student entrepreneurship, which has tended to focus on software development, is nurtured in
the living-learning environment of VeloCity, and operationalized in the start-up space at VeloCity Garage. For students, faculty and staff ready to bring their innovation to market, the University of Waterloo Commercialization Office (WatCo) can assist in developing patents and identifying sources of venture capital. The new Accelerator Centre at Waterloo’s Stratford Campus provides mentorship, educational programs and support services to local start-up companies in the field of technical and digital media.

In addition to its leadership in promoting technological innovation, Waterloo is also a catalyst for social innovation and social entrepreneurship through the Waterloo Institute for Social Innovation and Resilience, the Waterloo Institute for Complexity and Innovation and its partnership with the Centre for International Governance Innovation.

Intellectual property and commercialized innovations originating from students, faculty or staff remain the property of the innovator and not the university. This policy, which is not typical of the academic world, has proven to be a key factor in the vibrant growth of entrepreneurship at Waterloo.

Waterloo’s enduring search for innovation and relevance has produced a culture of entrepreneurship. This unique culture now promises to become a truly defining characteristic of Waterloo’s future profile.

Goal: Solidify Waterloo’s global leadership in entrepreneurship education and practice

Objectives:
- Enhance student opportunities to participate in entrepreneurial activities
- Build relationships and generate opportunities with the regional entrepreneurial community
- Advance commercialization, and other forms of utilization of leading edge entrepreneurial research and intellectual property
- Promote innovation and entrepreneurship that spans a wide range of needs, including social, political, health, environmental and technological
- Make entrepreneurship a key element of the Waterloo brand

These objectives will be achieved by:
- Increasing the number of students who participate in entrepreneurial work opportunities as part of experiential learning
- Supporting entrepreneurial activities leading to start-up company creation
- Facilitating student, faculty and staff entrepreneurship in a broad range of fields, including social entrepreneurship (not-for-profit)
- Encouraging, supporting and promoting student, faculty and staff entrepreneurship
- Encouraging research into entrepreneurship
- Developing learning opportunities to address entrepreneurship in relevant
courses
- Strengthening entrepreneurship linkages with co-op education
- Promoting awareness of Waterloo’s leadership in entrepreneurship externally
- Leveraging the entrepreneurial skills of alumni

3. **Innovation in Experiential Learning: Co-operative Education and Beyond**

Co-op education programs at Waterloo have undoubtedly been one of the most powerful incentives that draw students to the university. In blending alternating intervals of academic learning on campus with periods of experiential learning as an employee, the student is given a full and relevant educational experience. The graduating co-op student thus has a comprehensive understanding of how an organization works and what it requires of an employee, which proves to be a valuable attribute in acquiring employment upon graduation.

Waterloo can rightfully boast the largest co-op education program of any university in the world. The university intends to widen the learning experience to include work-related activities, whether or not financially compensated, wherever the activity offers a genuine learning experience of a work situation. Included in this type of experiential learning will be entrepreneurial pursuits, clinical internships and practicums required in programs such as psychology, social work and optometry; and community service and fieldwork activities which expose the student to the practical application of academic theory.

**Goal:** Be the world-leading university in co-op education and other forms of experiential and work-integrated learning

**Objectives:**
- Educate outstanding graduates whose skills are in high demand globally
- Enlarge the resource base of professionally credentialized and/or discipline-relevant employers
- Achieve a closer integration of research opportunities and co-op work terms
- Expand experiential learning to include service-based activities and international programs
- Ensure that co-op education continues as a major component of Waterloo’s brand

**These objectives will be achieved by:**
- Enhancing the interaction between the university and the co-op employer base
- Integrating more effectively the outcome of a student’s work term into the student’s academic program

University of Waterloo: Strategic Plan: 2013-2017
• Increasing opportunities for students’ first work terms
• Increasing awareness of the value of co-op and other forms of experiential learning among potential students and employers
• Increasing the number of research-oriented work terms
• Expanding and supporting work term opportunities internationally
• Expanding the employer recognition (appreciation) program
• Improving opportunities for co-op employers and students to have input into the co-op process
• Developing professional skills courses to benefit non-co-op undergraduate students
• Promoting awareness of Waterloo’s leadership in co-op education externally
• Using alumni networks to expand co-op work term opportunities
• Creating an organizational framework to promote, develop, implement and manage the use of experiential learning

4. Outstanding Academic Programming

Meeting consistently high standards, Waterloo’s academic programs are one of the university’s pillars of strength. Both at the university and at its Federated University (St. Jerome’s) and Affiliated University Colleges, (Conrad Grebel, Renison and St. Paul’s) faculty members are engaged in teaching, research and the delivery of unique programs. This is a direct result of the university’s policy of hiring the very best faculty and staff, and providing an environment that will allow the university to reach its full potential. With a foundation of excellent faculty and strong academic programs, along with the opportunity to engage in experiential learning, Waterloo’s undergraduate programs are in high demand and attract students of the highest calibre. Forty-two percent of all students entering undergraduate programs at the university have a high school average mark of 90% or higher.

Waterloo has thus created an educational environment in which research, scholarship and learning are inseparable at both undergraduate and graduate levels, and where relevance, innovation, creativity and application are concepts that drive the academic agenda.

a) Program Development

Partnership is one of Waterloo’s methods of ensuring the highest quality of graduate research programs. The university has partnered with selected international universities to develop dual degree doctorate (co-tutelle) programs in the fields of chemistry, physics, nanotechnology, earth sciences and several branches of engineering. The Perimeter Institute has also partnered with the university to offer a Master’s level program in research training through its Perimeter Scholars International. Based in
Waterloo, the institute is an independent, non-profit science research organization, renowned worldwide for groundbreaking work in the field of foundational theoretical physics.

Waterloo continuously develops new programs to address new knowledge demands that arise from societal change. Recent introductions include Master’s degrees in climate change, public issues anthropology, sustainability management, digital experience innovation and mathematics for teachers. A new PhD program in pharmacy will begin in 2013. Many of these new graduate degrees are offered in an online format to enable access for professionals working in their fields, wherever they are geographically located.

**Goal:** Offer leading-edge, dynamic academic programs

**Objectives:**
- Educate graduates uniquely prepared to address the challenges and opportunities of the 21st century
- Enhance Waterloo’s excellence in academic programs
- Ensure teaching quality of the highest international standard
- Assign a higher value to recognizing and rewarding high-quality teaching
- Seek global awareness of Waterloo’s research and teaching expertise

**These objectives will be achieved by:**
- Increasing the number of top level undergraduate and graduate students from national and international sources
- Increasing the value of teaching quality and adopting a teaching-learning charter that captures Waterloo’s commitment to teaching and learning
- Encouraging faculty members to integrate their research and the process of research into course activities
- Regularly collecting input from students on ways to improve the learning experience
- Ensuring that graduate students at Waterloo are supervised and mentored by the highest calibre of research personnel
- Strengthening excellence in teaching skills at Waterloo for both graduate students and faculty
- Articulating assessable learning outcomes and designing meaningful assessment methods for all academic courses and programs
- Ensuring that graduate programs include components that address professional and transferrable skills
- Improving classroom design and supporting technology-enabled learning to optimize the learning experience
- Acknowledging the changing balance between teaching and research as faculty members progress, and reflecting this in resource planning
b) Technology-enabled delivery systems for learning

The use of new technologies for program delivery offers an enormous opportunity to reach wider educational markets both across Canada and around the world, and to deliver programs to graduates and professionals where they live and work. Waterloo can make a significant societal contribution by bringing the benefits of outstanding academic programs to those in far-flung locations, and at the same time achieve a wider awareness nationally and globally of the university’s role as a provider of quality education.

Technology-enabled learning is a concept that Waterloo embraced many years ago for its distance-learning programs, first through the use of cassettes and now through emerging technologies and the internet. The university provides online courses that assist on-campus students with scheduling or job-related time conflicts, and allow off-campus and distant students to pursue the course requirements necessary for graduation. Several graduate degrees are offered fully online and more are planned, in part to meet the needs of working professionals. The university also provides credential courses to meet certain professional accreditation requirements and skills tailored to specific career needs.

Goal: Be a leading provider of technology-enabled and extended learning

Objective:
- Expand Waterloo’s footprint in the online-learning market
- Provide leading-edge, technology-enabled learning opportunities

These objectives will be achieved by:
- Increasing the number of online courses and degree programs
- Employing the most innovative methods of course delivery and new learning technologies
- Identifying external academic or skills needs and developing relevant new programs for online delivery to meet those needs
- Making wider use of online course materials, including, for example, Massive Open Online Courses (MOOCs), corporate training modules and professional development courses
- Creating and facilitating strategic partnerships in online learning provincially, nationally and internationally
- Increasing the use of mobile technologies in and out of the classroom for learning and support services
- Expanding the appropriate use of technologies to enhance classroom learning experiences
5. **Global Prominence in Internationalization**

Internationalization includes a wide range of information, activities, policies and strategies, which give teaching, research and service functions an international dimension at the university. Waterloo graduates are at home in a culturally diverse environment and knowledgeable about its attributes.

International connectivity offers major benefits in terms of professional, research and employment linkages, as well as in social networking to improve cultural understanding and diversity. Waterloo actively promotes outbound academic and research mobility through co-op opportunities, exchange programs and research collaboration; and promotes inbound mobility by foreign students and researchers participating in Waterloo programs and research. Currently, 12 per cent of undergraduate students are international, predominantly from China, India, Pakistan and South Korea. Graduate programs in global governance are offered by the Balsillie School of International Affairs, through a collaborative format drawing together scholars, students and policy-makers focused on finding solutions to pressing issues.

Enlarging and enhancing Waterloo’s presence in the international arena is a priority for the university. This will be achieved by providing academic services of the highest order, attracting the best and brightest faculty, students and research graduates from around the world, and partnering with international institutions of high reputation — such as existing partnerships with Tsinghua, Nanjing and Zhejiang universities in China. Raising Waterloo’s international profile will heighten its prestige and ranking on the global stage.

**Goal:** Become one of the most internationalized universities in Canada

**Objectives:**
- Be recognized internationally for excellence and innovation in education, research and scholarship
- Educate globally literate and world-ready graduates

**These objectives will be achieved by:**
- Creating student mobility programs that utilize the best universities and practices in the world in support of academic exchange, international service learning, field programs and international co-op placements
- Enhancing whenever appropriate, the international content and approach of degree programs
- Building further exemplary international research networks of elite institutions and individuals that utilize the intellectual and physical assets of our institution
• Attracting a diverse group of the best and the brightest international students to our campuses through the provision of an outstanding student experience, academically and socially

6. **A Vibrant Student Experience**

Students come to Waterloo for high-quality education and, in the case of co-op, for relevant work experience. But they also study, use a wide range of campus facilities and engage socially with others. For many students, the university campus is their “home base” for several years. It is also where faculty and staff interact with students and each other as they go about their daily business.

The educational component of a student’s life on campus will be vibrant and fulfilling, supported by “down-time” activities that are rich, rewarding and diverse. Waterloo should not be left behind after graduation, but rather remembered with gratitude, fondness and pride, as a place where graduates would be happy for their own sons and daughters to be educated.

Waterloo’s Federated University (St. Jerome’s) and Affiliated University Colleges, (Conrad Grebel, Renison and St. Paul’s) have been remarkably successful in promoting a sense of well-being for students by creating a spirit of fellowship among their residents, nurturing faculty-student engagement and giving students many leadership opportunities to thrive as responsible and compassionate citizens here and around the globe.

Waterloo created the Student Success Office and Counselling Services to address the need for emotional and academic support for students. Organizations, including the Organizational and Human Development office, offer valuable student leadership opportunities which should be recognized and expanded, as crucial to the development of future leaders.

Student organizations on campus can provide a sense of community for like minds. The university will continue to work to create an encompassing sense of community that engages all those on campus, including faculty and staff.

For students, the years at Waterloo should provide both an excellent education and an enriching experience of campus life, enabling each student to reach her or his potential in the fullest sense.

**Goal:** Ensure that students have an engaging, purposeful and relevant experience

**Objectives:**

• Deliver excellent student services through an integrated student-focused
approach
• Provide enabling experiences, programs and supports, including student leadership development opportunities, in order to develop student potential
• Develop strong partnerships within and between academic and non-academic units to enhance the positive student experience
• Build a community of communities by providing an environment where students, faculty and staff can connect
• Deepen the connections between students and the City of Waterloo community

These objectives will be achieved by:
• Incorporating mentorship of students into curricular and co-curricular programs wherever possible
• Creating a strong virtual environment so students always feel connected to Waterloo, wherever they are physically located
• Enabling an IT environment that facilitates student interaction and improves student life
• Providing the means for students to interact across different programs
• Integrating and optimizing processes, communications and systems to support student success
• Encouraging collaborative, multidisciplinary projects in undergraduate coursework to enhance learning and teamwork skills
• Enhancing research, study and social space
• Improving support services for students who live off-campus
• Enhancing the physical appearance of the campus to be more attractive and people-centric

7. A Robust Employer-Staff Relationship

The effectiveness of the research agenda, program delivery and administrative functions of Waterloo relies upon a superior complement of staff. In this regard, the University of Waterloo has worked diligently in many ways to be an exemplary employer and an employer of choice. The university will continue to provide challenging career opportunities for its staff and encourage its staff to develop higher-level skills through on-going training and professional development.

Goal: Be an exemplary employer

Objectives:
• Be a destination of choice for superior individuals seeking employment
• Enable staff to fulfill their potential in a career at the university

These objectives will be achieved by:
Attracting and retaining the highest quality candidates
• Providing staff with opportunities to acquire new competencies
• Encouraging a more diverse work experience for staff through trial periods of different roles, responsibilities and positions
• Supporting mentoring skills training for managers
• Continuing to be competitive in the job market
• Having the employment attributes of the university judged against an external standard for excellence
• Encouraging Faculties and academic support units to undertake succession planning for key leadership positions

8. **Promoting a Sound Value System**

a) *Balanced life*

Modern life makes many competing demands on an individual’s time. The responsibility of caring for a sick child or elderly parent, for example, at the same time as addressing work requirements can lead to stress-related problems. Extended periods of work overload can also trigger health problems. Fulfilling one’s responsibilities at work, home and in the community requires effective time management practices.

It is in the university’s best interests to assist students, faculty and staff, as far as possible, to maintain an appropriate balance between work demands and those beyond the purview of the university. This approach will help to minimize problems of stress-related illness and absenteeism, and to enhance the university’s ability to attract and retain quality faculty and staff.

In the case of on-campus students, very many of their academic and non-academic activities occur in the confines of university buildings, accommodation and recreational facilities. To enhance the overall experience of learning and living at Waterloo, the university will make every effort to provide additional space to allow greater social interaction and mentorship opportunities, and foster a greater sense of school spirit and pride. Support in dealing with stress is one of the functions of the Student Success Office, Health Services and Counselling Services.

**Goal: Enhance the well-being of students, faculty and staff**

**Objectives:**
• Develop a strong, vibrant integrated community
• Assist students, faculty and staff in achieving appropriate work-life balance
• Foster student success through engaging and relevant university-based experiences
These objectives will be achieved by:

- Providing diverse, integrated and targeted services to address the mental and physical well-being of students, faculty and staff
- Creating an environment where students, faculty and staff collaborate in support of one another
- Developing activities to promote school pride
- Encouraging Faculties to devise activities that foster student-faculty fellowship
- Developing non-academic activities sought by diverse student communities
- Increasing the availability of on-campus student accommodation
- Promoting and adopting flexible work arrangements where such arrangements are consistent with operational needs
- Improving communication within the campus community

b) Integrity

Integrity includes the concepts of honesty, trust, respect, fairness and responsibility. Academic excellence without personal integrity is of little value to an employer, and ultimately proves a major detriment in the career development of a student, faculty or staff member. The university is known for creating the leaders for the future, and nowhere are honour, respect, reliability and accountability called for more than at the highest level of decision-making. Waterloo’s professoriate and staff are held to the highest standards of conduct, and its administration is committed to open, responsible and fair governance.

Waterloo seeks to develop integrity at every level of the institution, and in 2008 created an Academic Integrity Office, whose initial focus was to partner with student groups, Faculties and staff to provide information and education so that new students understand expectations related to integrity for their academic work. Integrity has now been widened to be a core value for all aspects of university-related life of students, faculty and staff.

Goal: Promote integrity as a core value of the campus community

Objective:

- Deepen and broaden the university’s approach to integrity

This objective will be achieved by:

- Determining ways to recognize and celebrate behaviour that exemplifies integrity
- Enhancing the existing online tutorial on academic integrity, combined with discipline-specific case studies as a milestone for all incoming undergraduate and graduate students
• Exploring the idea of a student-led honour code, to be implemented by student associations with support from administration

c) Embracing Equity and Diversity

Waterloo is committed to supporting equity and diversity through its AccessAbility Office, which provides support for students, faculty and staff with disabilities, the Principles of Inclusivity sessions offered by the office of Organizational and Human Development, and the University Diversity Advisory Committee (UDAC), which addresses diversity in its many forms. In addition, the Status of Women and Equity Committee (SWEC) — based in the Faculty Association — focuses on matters related to the status of women and broader equity issues amongst faculty.

Goal: Provide an equitable and inclusive environment for students, faculty and staff

Objective:
• Develop a supportive campus community that proactively articulates, promotes and effects change to achieve equity for students, faculty and staff through policies, programs and practice

This objective will be achieved by:
• Setting up an Equity Office and hiring a Director of Equity
• Developing and enhancing relevant policies, taking into consideration input from student, faculty and staff stakeholders, including the AccessAbility Office, UDAC and SWEC
• Enhancing awareness, understanding, respect, support and celebration of equity and diversity among students, faculty and staff
• Meeting accessibility standards in new buildings and in those being renovated
• Meeting accessibility standards, as outlined in the Accessibility for Ontarians with Disabilities Act (AODA), across print and digital communications platforms

A DISTINGUISHED PAST; A DISTINCTIVE FUTURE

Born in an era of rapid societal change, the University of Waterloo has earned its place as a leader of societal growth and advancement. Agile and forward-looking, this university embraces the transformational power of research and teaching, from the era encompassing modern manufacturing to the dawn of the information age, and now the world-changing potential of quantum information and digital manufacturing. Waterloo will rise to greet the challenges of a profoundly changing future. As always, the university will be swift to recognize the intellectual and practical requirements of society, and will respond with energy, integrity and purpose.
Research, entrepreneurship, teaching excellence, internationalization and experiential education will be the defining characteristics of this university as we move forward. Waterloo will reshape society, through excellence in research and scholarship, driven by a deeply rooted dedication to building a better society.

Waterloo will become one of the top-ranked universities in the world, as an international knowledge hub providing world-class research and educational expertise through a network of linkages to global business enterprises, governmental agencies and other major academic institutions. In short, a global presence and a world-changing success.

Building on its multiple levels of distinction in research and scholarship and supported by a complement of superior staff, Waterloo’s renowned reputation will be further heightened by the on-going endeavours of a truly distinguished professoriate and the outcome of its many specialized centres of excellence. Relentlessly forward-looking, Waterloo will play a leading role in emerging technological developments, social and environmental innovations and imaginative educational practices.

A new approach to entrepreneurialism will see an increasing number of students enter the business world as owners of start-up companies. Co-op will grow and evolve in Canada and internationally. Waterloo will meet emerging needs and opportunities, recognizing the value of work-related experience, whether it happens in a lab, an office, a remote village or in entrepreneurial pursuits. Students and faculty will engage in intellectual challenges of cutting-edge research, or classical academic disciplines. They will carve out careers in many different realms. Some will embark on foundational research in fields such as science and mathematics, often in the most prestigious universities. Others will become transformers of industry or achieve distinguished careers in public or community service and other areas of endeavour. As Maclean’s magazine has recognized so many times, Waterloo will continue to produce the leaders of tomorrow.
Strategic Plan – Next Steps

The Strategic Plan provides the goals, objectives and strategies that present UW’s key directions for the next few years. Following the approval of the Strategic Plan, a steering committee will be formed and “leads” will be appointed for each of the goal areas.

In collaboration with Institutional Analysis & Planning, the steering committee and the “leads” will operationalize the strategies presented in the plan and provide tangible indicators of success for each of the objectives. Progress will be reported on a regular basis.

Geoff McBoyle
Vice President, Academic & Provost

21 May 2013
1. Recommended Tuition Fee Increases 2013/14

The Ministry of Training, Colleges & Universities (MTCU) introduced a revised tuition framework in 2006 which established distinct tuition levels for each new cohort of incoming students. This has resulted in a significant increase in the number of assessable tuition rates which are now based on program, year of entry, and year of study. Consequently, the major tuition categories have been identified on the attached “Recommended Tuition Fee Increases 2013/14” schedule and examples are provided for a range of programs and effective dates.

MTCU’s new tuition framework was issued in March 2013 and applies to the 2013/14 to 2016/17 years and limits the overall average tuition fee increase across all domestic programs to 3% per year with other limits imposed based on program and year of study.

The resulting tuition increases can be categorized as follows:

Undergraduate Students (Domestic)
- “Regulated” programs - year 1
- “Regulated” programs - upper years
- “Deregulated” programs - year 1 (see exceptions)
- “Deregulated” programs - upper years (see exceptions)
- “Deregulated” AFM, Biotech/CA, CFM, Math/CA
  - year 1
  - upper years
- Accountancy Diploma – all years

Graduate Students (Domestic)
- Specifically identified Master and Diploma Programs

International Students
- Undergraduate programs
- Graduate programs except research plans
- Graduate research plans
- Specifically identified Master and Diploma Programs

2. Recommended Changes to Incidental Fees

Federation of Students Fee

It is recommended that the compulsory Federation of Students Fee, assessed and collected from all full-time on-campus undergraduate students, be increased from $44.80 per term to $48.51 per term effective September 2013 (fall term), an 8.3% increase.

Beginning in September 2013, part-time on-campus undergraduate students will be represented by the Federation of Students (via amended by-laws) and will be assessed 30% of the full-time fee or $14.55 per term.

Comments:
- The previous full-time fee increase was $4.95 per term effective September 2012
- The 2013 full-time fee increase of $3.71 per term has two components: CPI + $3.04 approved by a vote of students to cover costs associated with operating the Student Life Centre as well as additional administrative costs
- Payment of the fee is a requirement of registration and is non-refundable
Federation of Students Administered Fee
It is recommended that the Federation of Students Administered Fee be increased to reflect an increase for the U-Pass component effective September 2013 (fall term).

<table>
<thead>
<tr>
<th></th>
<th>Dental</th>
<th>Health</th>
<th>U-Pass</th>
<th>SRP</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular</td>
<td>$46.51</td>
<td>$51.25</td>
<td>$72.23</td>
<td>$1.00</td>
<td>$170.99</td>
</tr>
<tr>
<td>Co-op</td>
<td>$83.63</td>
<td>$94.81</td>
<td>$72.23</td>
<td>$1.00</td>
<td>$251.67</td>
</tr>
</tbody>
</table>

Comments:
- SRP = Student Refugee Program
- The Federation of Students has contracted with Studentcare for the health and dental components and with Grand River Transit for the bus pass component
- The university assesses the fee on behalf of the Federation of Students and transfers the funds to the Federation of Students for disbursement
- Payment of the fee is a requirement of registration; the health and dental components are refundable through the Federation of Students and their service provider; the bus pass is non-refundable; the Student Refugee Program is refundable directly through the Federation of Students
- During the winter term, regular students pay twice the rate for health and dental to ensure continuous coverage from May through August
- The U-Pass component reflects an increase of $4.39 per term (6.5%)

Graduate Student Association (GSA) Fee
It is recommended that the compulsory GSA Fee, assessed and collected each term from all full-time and part-time graduate students, be increased by 10.7% from $15.00 per term to $16.60 per term effective September 2013 (fall term).

Comments:
- The fee increase was approved by graduate students at their Winter 2013 Annual General Meeting
- Payment of the fee is a requirement of registration and is non-refundable

GSA Administered Fees
It is recommended that the GSA Administered Fees, assessed and collected from active full-time and part-time graduate students, be increased for the U-Pass component effective September 2013 (fall term).

<table>
<thead>
<tr>
<th></th>
<th>Dental</th>
<th>Health</th>
<th>U-Pass</th>
<th>Grad House</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>$63.00</td>
<td>$51.25</td>
<td>$72.23</td>
<td>$15.00</td>
<td>$201.48</td>
</tr>
<tr>
<td>Part-time</td>
<td>$63.00</td>
<td>$51.25</td>
<td>$0.00</td>
<td>$15.00</td>
<td>$129.25</td>
</tr>
</tbody>
</table>

Comments:
- Payment of the fee is a requirement of registration
- The Graduate House Fee is refundable directly through the Graduate Student Association (GSA)
- The health and dental components are refundable through the GSA and its service provider
- The U-Pass fee pays for a universal bus pass with Grand River Transit; the fee is assessed to all full-time graduate students on campus within the Region of Waterloo; the fee is not refundable
- The U-Pass component reflects an increase of $4.39 per term (6.5%)

Dennis Huber
Vice President,
Administration & Finance
## RECOMMENDED TUITION FEE INCREASES 2013/2014

### 1. Graduate Plans, Effective Spring 2013

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Master of Engineering &amp; professional graduate plans</td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition Range All Years:</td>
<td>2.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td></td>
<td>$2,388.00</td>
<td>$5,866.00</td>
</tr>
<tr>
<td></td>
<td>$2,504.00</td>
<td>$6,726.00</td>
</tr>
</tbody>
</table>

**Example:**
- Graduate Master of Science Tuition All Years
- Graduate Master of Science International Tuition All Years

### 2. New Special Graduate Plan, Effective Spring 2013

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma in Business &amp; Entrepreneurship [3]</td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition All Years:</td>
<td>$1,252.00</td>
<td>$3,363.00</td>
</tr>
</tbody>
</table>

### 3. Special Graduate Plans, Effective Spring 2013

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Taxation</td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition Per Course:</td>
<td>2.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td></td>
<td>$2,814.00</td>
<td>$2,875.00</td>
</tr>
</tbody>
</table>

**Example:**
- Master of Management Sciences (Management of Technology)
- Master of Engineering in Electric Power Engineering; Graduate Diploma; Graduate Certificate
- Master of Theological Studies, Master of Catholic Thought

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition Range Per Course:</td>
<td>3.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td></td>
<td>$562.00</td>
<td>$562.00</td>
</tr>
<tr>
<td></td>
<td>$3,643.00</td>
<td>$3,643.00</td>
</tr>
</tbody>
</table>

### 4. New Special Graduate Plan, Effective Fall 2013

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Climate Change [3]</td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition All Years:</td>
<td>$2,388.00</td>
<td>$5,966.00</td>
</tr>
</tbody>
</table>

### 5. Special Graduate Plans, Effective Fall 2013

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Business, Entrepreneurship &amp; Technology</td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td>Master of Public Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Health Informatics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Digital Experience Innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Social Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Development Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition Range All Years:</td>
<td>2.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td></td>
<td>$1,195.00</td>
<td>$1,989.00</td>
</tr>
<tr>
<td></td>
<td>$10,336.00</td>
<td>$12,183.00</td>
</tr>
</tbody>
</table>

**Example:**
- Diploma in Social Innovation
- Master of Quantitative Finance
- Master of Mathematics for Teachers
- Master of Environment & Business
- Master of Actuarial Science

<table>
<thead>
<tr>
<th>Plans</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[1, 2]</td>
<td>[1, 2]</td>
</tr>
<tr>
<td></td>
<td>All Years</td>
<td>All Years</td>
</tr>
<tr>
<td>Tuition Range All Years:</td>
<td>3.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td></td>
<td>$984.00</td>
<td>$984.00</td>
</tr>
<tr>
<td></td>
<td>$10,692.00</td>
<td>$10,692.00</td>
</tr>
</tbody>
</table>
### 6. Special Graduate Plan, Effective Winter 2014

<table>
<thead>
<tr>
<th>Program</th>
<th>Domestic [1, 2]</th>
<th>International [1, 2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Accounting</td>
<td>2.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Tuition All Years</td>
<td>$6,954.00</td>
<td>$9,397.00</td>
</tr>
</tbody>
</table>

### 7. Undergraduate Plans, Effective Spring 2013

<table>
<thead>
<tr>
<th>Program and Specializations</th>
<th>Domestic [1, 2]</th>
<th>International [1, 2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 Upper Years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>5.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Engineering, including Nanotechnology &amp; Software Engineering</td>
<td>$3,720.00 - $3,684.00</td>
<td>$10,734.00 - $10,734.00</td>
</tr>
<tr>
<td>Mathematics/Business Administration, Double Degree</td>
<td>$9,001.00</td>
<td>$8,915.00</td>
</tr>
<tr>
<td>Tuition Range:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting and Financial Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biotechnology/Chartered Accountancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computing and Financial Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics/Chartered Accountancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition, Mathematics/Chartered Accountancy</td>
<td>$2,939.00</td>
<td></td>
</tr>
<tr>
<td>Engineering, including Nanotechnology &amp; Software Engineering</td>
<td>$7,949.00 - $7,949.00</td>
<td>$15,675.00 - $15,675.00</td>
</tr>
<tr>
<td>All other undergraduate plans not specifically listed</td>
<td>$5,665.00</td>
<td>$5,665.00</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition, Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Diploma Program</td>
<td>2.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Tuition Per Course</td>
<td>$1,739.00</td>
<td>$2,349.00</td>
</tr>
</tbody>
</table>
New Programs:
1. Diploma in Business and Entrepreneurship
   This part-time graduate diploma program will be offered on the Waterloo campus and replaces the Diploma in Advanced Management which was offered in Abu Dhabi. Fees will be the same as those charged for Master of Engineering graduate plans.

2. Master of Climate Change
   A new professional Masters program starting Fall 2013. Fees will be the same as those charged for Masters professional graduate plans.

Notes to the Recommended Tuition Fee Increases:
[1] Plus applicable incidental fees.
[2] Plus co-op fees and work report marking fees where applicable.
[3] Tuition rate subject to approval by the Ministry of Training, Colleges and Universities (MTCU).
[4] In addition to the increases noted above, the special amount of $500 per term, except for Spring terms, approved by the Board at the April 1997 meeting, remains in effect.

Background Notes:
1. The Board of Governors has the power (as given in the University of Waterloo Act) to set tuition fees at any level it wishes. In practical terms that power is constrained by the provincial government, which will deduct from its grants any tuition charges in excess of the amount stipulated by the government. On March 28, 2013, MTCU announced a new four-year tuition framework effective 2013-14 to 2016-17. The constraints are:
   a. The framework applies to domestic tuition rates only.
   b. The overall annual average rate increase is capped at 3%. Rate increases compound each year.
   c. Tuition rate increases are regulated differently for two groups:
      i. All graduate programs and listed professional undergraduate programs: A maximum annual increase of 5% for students who start their program on or after 2013-14 and 4% for students who were registered at the institution in 2012-13 and are continuing in their program.
      ii. Arts & Science and other undergraduate programs: A maximum annual increase of 3% for all students.

2. In 1996-97, to help students in financial need, universities were required to establish student financial aid programs that were funded from additional revenue generated from tuition rate increases. This requirement applies to domestic tuition rates and domestic students only. Each year, universities are required to set aside a portion of the additional tuition revenue resulting from annual rate increases. The calculation of the annual increment to the tuition set aside fund has varied over time. Under the current Ministry tuition framework the fund is incremented annually by 10% of the additional tuition resulting from the tuition rate increases, and by the annual percentage increase/decrease in enrolment.

3. Undergraduate students enrolled in Co-operative plans serviced by the Co-operative Education and Career Action department pay, in addition to the tuition fee, a co-op fee in specified terms. The calculation of this fee is based on costs of administering the work-term program and is in accordance with the methodology approved by the government. The government has also agreed to allow an addition to the tuition fee for the cost of marking work-term reports, according to an approved methodology.

Subject to the approval of the Board of Governors
### UNIVERSITY OF WATERLOO
#### 2013/14 Operating Income Budget

<table>
<thead>
<tr>
<th></th>
<th>2012/13 Base</th>
<th>Estimated 13/14 % Increase</th>
<th>Estimated 13/14 $ Increase</th>
<th>2013/14 Base</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td></td>
</tr>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Grant</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Basic Grant</td>
<td>209,572</td>
<td>(2,157)</td>
<td>(2,157)</td>
<td>209,572</td>
<td>[1]</td>
</tr>
<tr>
<td>Policy Levers</td>
<td></td>
<td>(979)</td>
<td>(979)</td>
<td></td>
<td>[2]</td>
</tr>
<tr>
<td>International Student Recovery</td>
<td>7,148</td>
<td>676</td>
<td>7,824</td>
<td></td>
<td>[3]</td>
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<tr>
<td>Graduate Growth</td>
<td>8,128</td>
<td>2,360</td>
<td>10,488</td>
<td></td>
<td>[4]</td>
</tr>
<tr>
<td>Undergraduate Growth</td>
<td>9,472</td>
<td>22</td>
<td>9,494</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Improvement Fund</td>
<td>(11,076)</td>
<td>(400)</td>
<td>(11,476)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfers to Colleges</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Fund</td>
<td>1,868</td>
<td></td>
<td>1,868</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Infrastructure</td>
<td>1,614</td>
<td></td>
<td>1,614</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Programs</td>
<td>1,294</td>
<td></td>
<td>1,312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access for Disabled</td>
<td>713</td>
<td></td>
<td>741</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>228,733</td>
<td>(0.2)</td>
<td>(432)</td>
<td>228,301</td>
<td></td>
</tr>
<tr>
<td><strong>Tuition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>241,542</td>
<td>23,118</td>
<td>264,660</td>
<td></td>
<td>[5]</td>
</tr>
<tr>
<td>Graduate</td>
<td>48,451</td>
<td>5,782</td>
<td>54,233</td>
<td></td>
<td>[6]</td>
</tr>
<tr>
<td>Transfers to Colleges</td>
<td>(13,229)</td>
<td>(840)</td>
<td>(14,069)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>276,764</td>
<td>10.1</td>
<td>28,060</td>
<td>304,824</td>
<td></td>
</tr>
<tr>
<td>Co-op Recovery</td>
<td>14,296</td>
<td>749</td>
<td>15,045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Services Fee</td>
<td>8,471</td>
<td>(260)</td>
<td>8,211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Overhead</td>
<td>7,800</td>
<td>(246)</td>
<td>7,554</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>6,250</td>
<td>1,250</td>
<td>7,500</td>
<td></td>
<td>[7]</td>
</tr>
<tr>
<td>Services to Colleges</td>
<td>2,855</td>
<td>164</td>
<td>3,019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant in lieu of Taxes</td>
<td>2,330</td>
<td>(315)</td>
<td>2,015</td>
<td></td>
<td>[8]</td>
</tr>
<tr>
<td>Miscellaneous Income</td>
<td>10,638</td>
<td>(293)</td>
<td>10,345</td>
<td></td>
<td>[9]</td>
</tr>
<tr>
<td></td>
<td>52,640</td>
<td>2.0</td>
<td>1,049</td>
<td>53,689</td>
<td></td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td>558,137</td>
<td>5.1</td>
<td>28,677</td>
<td>586,814</td>
<td></td>
</tr>
</tbody>
</table>

### NOTES TO 2013/14 OPERATING INCOME

[1] This 0.95% decrease applies to the basic grant and the graduate and undergraduate growth funds per the 2012 Ontario Budget.

[2] In the 2012 Ontario Budget, the provincial government announced a reduction to the operating grant of $750 for each undergraduate and Masters level international student.

[3] The allocation is based on projected Fall 2013 FTE growth over the Fall 2007 FTE base. We assume that the Ministry of Training, Colleges and Universities (MTCU) will fund all growth up to the graduate enrolment growth targets and the university anticipates converting 20 PhD spaces to Masters.

[4] The allocation is based on receiving full funding for the actual growth in 2013/14. There is a risk that the provincial government may not provide full funding per student for enrolment growth. We expect a 5% discounting on growth since 2011/12.

[5] The $23.1M increase in undergraduate tuition reflects continued international growth and modest domestic growth. On March 28, 2013, MTCU instituted a new 4-year tuition framework. Maximum tuition rate increases for new domestic students are: 3% in regulated programs and 5% in deregulated programs, with an overall average increase of 3%. Tuition rate increases for international undergraduates is 3% plus an additional 1.2% to offset International Student Recovery and the reduction to the Grant in lieu of Taxes.

[6] The $5.8M increase in graduate tuition reflects the following: 2% rate increase for domestic students; 3% plus an additional 1.2% rate increase for most international professional Masters students; 3% rate increase for Research Masters and PhD international students; and, continued enrolment growth to meet the MTCU grant targets and the sixth decade goals.

[7] Interest estimate is based on projected cash available to invest and interest rates.

[8] MTCU will discontinue funding for full-time international undergraduate and Masters students at $75 each; however, the university is still required to pay this amount to local municipalities.

[9] Miscellaneous income estimates are based on 2012/13 actuals plus known changes in 2013/14. The total includes: Health Services and Optometry OHIP and professional services income, application processing fees, non credit tuition, other student related fees, rental income, parking income, and other general revenues. Many of these items have offsetting expenses.
### UNIVERSITY OF WATERLOO

**2013/14 Operating Expense Budget**

<table>
<thead>
<tr>
<th>2012/13</th>
<th>Estimated</th>
<th>2013/14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13-02-05 (Decr)</td>
<td>2013/14 Base</td>
</tr>
<tr>
<td>Base $000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td><strong>EXPENSES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Salary and Wages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current salaries and wages</td>
<td>318,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Secondments</td>
<td>343</td>
<td></td>
</tr>
<tr>
<td>Salary savings from faculty retirements/terminations</td>
<td>(1,000)</td>
<td>(1,000)</td>
</tr>
<tr>
<td>Conversion costs</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Salary increases</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total salary and wages</strong></td>
<td>318,343</td>
<td>4.5</td>
</tr>
</tbody>
</table>

| **Benefits** | | | | | |
| Current benefits | 66,482 | | 66,482 | | 11.3 |
| Benefit cost increase | 5,773 | 5,773 | 5,773 | | 1.0 |
| Faculty professional expense reimbursement plan | 1,774 | 116 | 1,890 | | 0.3 |
| Parental leave supplement | 1,111 | 300 | 1,411 | | 0.2 |
| **Total benefits** | 69,367 | 8.9 | 6,189 | 75,556 | 12.8 |

| **Total salaries and benefits** | 387,710 | 5.3 | 20,567 | 408,277 | 69.6 |

| **Student Support** | | | | | |
| Graduate incentive fund | 401 | | 401 | | 0.1 |
| Graduate student support | 8,012 | 689 | 8,701 | | 1.5 |
| Senate matching scholarships | 160 | | 160 | | |
| Support for international graduate students | 6,509 | (122) | 6,387 | | 1.1 |
| Tuition set aside | 18,239 | 1,123 | 19,362 | | 3.3 |
| Undergraduate scholarships/bursaries | 7,686 | 291 | 7,977 | | 1.3 |
| **Total student support** | 41,007 | 4.8 | 1,981 | 42,988 | 7.3 |

| **Income Sharing** | | | | | |
| Differential tuition | 591 | | 591 | | |
| Graduate growth | 318 | | 318 | | |
| Graduate international growth | 2,905 | 2,905 | | | |
| Graduate course based masters | 4,000 | 4,000 | | | |
| International tuition | 972 | 972 | | | |
| Undergraduate enrolment expansion | | | | | |
| **Total income sharing** | 8,786 | 8,786 | | 8,786 | 1.5 |

| **Sub-total** | 428,717 | 7.3 | 31,334 | 460,051 | 78.4 |

**Notes**:

1. [1]
2. [2]
3. [3]
### UNIVERSITY OF WATERLOO
#### 2013/14 Operating Expense Budget

<table>
<thead>
<tr>
<th>2012/13 Base</th>
<th>Estimated</th>
<th>2013/14</th>
<th>2013/14</th>
<th>2013/14 % of Income</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-02-05</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic development fund</td>
<td>5,567</td>
<td>5,567</td>
<td>5,567</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Access for disabled</td>
<td>713</td>
<td>28</td>
<td>741</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Base budget adjustment to reflect overhead costs</td>
<td>4,058</td>
<td>(248)</td>
<td>3,810</td>
<td>3,810</td>
<td>0.6</td>
</tr>
<tr>
<td>Contingency reserve</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Endowment investment shortfall</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Faculty recruitment and retention</td>
<td>1,635</td>
<td>1,635</td>
<td>1,635</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Graduate programs holdback</td>
<td>7,997</td>
<td>484</td>
<td>8,481</td>
<td>8,481</td>
<td>1.4</td>
</tr>
<tr>
<td>Insurance</td>
<td>1,800</td>
<td>1,800</td>
<td>1,800</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>International fund</td>
<td>2,534</td>
<td>767</td>
<td>3,301</td>
<td>3,301</td>
<td>0.6</td>
</tr>
<tr>
<td>Library acquisitions</td>
<td>7,519</td>
<td>1,000</td>
<td>8,519</td>
<td>8,519</td>
<td>1.5</td>
</tr>
<tr>
<td>Municipal taxes</td>
<td>2,330</td>
<td>2,330</td>
<td>2,330</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Quality improvement fund</td>
<td>2,753</td>
<td>2,753</td>
<td>2,753</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Undergraduate programs holdback</td>
<td>22,647</td>
<td>1,233</td>
<td>23,880</td>
<td>23,880</td>
<td>4.1</td>
</tr>
<tr>
<td>Utilities</td>
<td>15,950</td>
<td>530</td>
<td>16,480</td>
<td>16,480</td>
<td>2.8</td>
</tr>
<tr>
<td>Sub-total</td>
<td>78,003</td>
<td>4.9</td>
<td>3,794</td>
<td>81,797</td>
<td>14.0</td>
</tr>
<tr>
<td>Supplies and expenses</td>
<td>61,493</td>
<td>1,276</td>
<td>62,769</td>
<td>62,769</td>
<td>10.7</td>
</tr>
<tr>
<td>Expenditure reduction at 2.5%</td>
<td></td>
<td></td>
<td>(6,096)</td>
<td>(6,096)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Gross expenses</td>
<td>568,213</td>
<td>5.3</td>
<td>30,308</td>
<td>598,521</td>
<td>102.1</td>
</tr>
<tr>
<td>Cost recoveries and chargeouts</td>
<td>(10,588)</td>
<td>(947)</td>
<td>(11,535)</td>
<td>(11,535)</td>
<td>(2.0)</td>
</tr>
<tr>
<td>Manageable allowance</td>
<td>(500)</td>
<td>(500)</td>
<td>(500)</td>
<td>(500)</td>
<td>(0.1)</td>
</tr>
<tr>
<td>Estimated net expenses</td>
<td>557,125</td>
<td>5.3</td>
<td>29,361</td>
<td>586,486</td>
<td>100.0</td>
</tr>
<tr>
<td>Estimated income</td>
<td></td>
<td></td>
<td></td>
<td>586,814</td>
<td></td>
</tr>
<tr>
<td>Excess income over expenses</td>
<td></td>
<td></td>
<td></td>
<td>328</td>
<td></td>
</tr>
</tbody>
</table>

Board, June 4/13
NOTES TO THE 2013/14 OPERATING EXPENSE BUDGET

[1] The increase to salary and wages includes funding for new faculty and staff positions, estimated salary increase costs based on salary settlements in place for 2013/14 and ongoing clawback savings on faculty terminations/retirements, net of estimated over F costs.

[2] The 8.7% increase in current benefits costs include: benefits costs for new faculty and staff positions - 2.5%; rate and premium changes in employer contributions for extended health coverage, dental coverage, life insurance, CPP, employment insurance and workplace safety insurance - 3%; and, costs associated with salary increases - 3.2%.

[3] The ongoing income sharing balances represent additional amounts available in 2013/14 for distribution. Income sharing for existing programs is allocated to the faculties on a slip-year basis. New graduate growth allocations were introduced in 2006/07 to recognize growth in intake and overall FTEs and are funded on a calendar-year basis. The ongoing cumulative income sharing amounts, including additional amounts for 2013/14, from inception to date, are as follows:

<table>
<thead>
<tr>
<th>Differential tuition</th>
<th>15,811</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate expansion (ended 2004/05)</td>
<td>2,727</td>
</tr>
<tr>
<td>Graduate growth (started 2005/06)</td>
<td>7,263</td>
</tr>
<tr>
<td>Graduate international growth</td>
<td>2,551</td>
</tr>
<tr>
<td>Undergraduate enrolment expansion</td>
<td>36,450</td>
</tr>
<tr>
<td>International tuition</td>
<td>28,633</td>
</tr>
<tr>
<td>Graduate course based masters</td>
<td>6,781</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100,216</strong></td>
</tr>
</tbody>
</table>

To accommodate growth, academic support units receive supplemental budget increases.

[4] Graduate programs holdback is a portion of the grant and tuition related to growth and held at the centre to support graduate expansion.

[5] Undergraduate programs holdback relates to emerging programs which are considered to be incremental to the current activity of the institution/faculty. Grant and tuition generated from the program during the start-up period is held at the centre and managed by the Provost. Funds are released as required to support the start-up costs. Once the program is determined to have reached steady-state, budget for the program will be transferred to the home faculty through the current income sharing mechanisms in place. In 2013/14 the emerging programs are Nanotechnology Engineering, Management Engineering, Pharmacy, International Development, Knowledge Integration, Global Business and Digital Arts (Stratford), and WatPD.

[6] The utilities increase is due to new buildings and rate changes for electricity.
NOTES TO THE 2013/14 OPERATING EXPENSE BUDGET

[7] Supplies and expenses is the total of non-salary budgets in faculties and academic support units that are not specifically identified elsewhere in the budget. Based on 2011/12 actual expenses, included in this number are the following items:

<table>
<thead>
<tr>
<th>Item</th>
<th>$millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment, maintenance and rentals</td>
<td>17.4</td>
</tr>
<tr>
<td>Travel and hospitality</td>
<td>10.6</td>
</tr>
<tr>
<td>Supplies</td>
<td>9.5</td>
</tr>
<tr>
<td>Contracted services</td>
<td>6.3</td>
</tr>
<tr>
<td>Computing, including software</td>
<td>5.2</td>
</tr>
<tr>
<td>Purchases for resale</td>
<td>4.5</td>
</tr>
<tr>
<td>Consulting</td>
<td>3.4</td>
</tr>
<tr>
<td>Telephone</td>
<td>2.7</td>
</tr>
<tr>
<td>Printing</td>
<td>2.4</td>
</tr>
<tr>
<td>Postage</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64.0</strong></td>
</tr>
</tbody>
</table>

[8] A 2.5% expenditure reduction is allocated across all academic units resulting in a savings of $6.1M.
This report is submitted following the committee’s meeting of 2 April 2013.

FOR APPROVAL

1. UW FINANCIAL STATEMENTS, 2012-2013
   
   Motion: That the Board of Governors delegate its authority to approve the university’s audited financial statements for the fiscal year ended 30 April 2013 (the “Financial Statements”) to the Board Executive Committee.
   
   Background: The Financial Statements will be reviewed by the Audit Committee at its August meeting. In the past, the Financial Statements were presented to the Board of Governors for approval at its October meeting. Due to changes in auditing standards, if the Financial Statements are not approved until the October meeting of board, the auditors will be required to perform a subsequent events review and bring any changes to an extraordinary meeting of the Audit Committee before the Financial Statements can go before the board. Approval of the Financial Statements before the October meeting of board will also allow the university to make certain filings and release information based on the Financial Statements earlier than in previous years.

FOR INFORMATION

2. NEW ACCOUNTING STANDARDS FOR NOT-FOR-PROFIT ORGANIZATIONS
   
   As reported to the board in February, the Audit Committee has been receiving regular updates re: new accounting standards for not-for-profit organizations and how the university plans to implement these standards. The committee received a final report and pro forma financial statements at the April 2013 meeting, reflecting the implementation decisions made by the university. Following a question and answer session with the university’s department of finance and external auditors, the committee expressed no concerns with the decisions.

3. PROPOSED RISK MANAGEMENT STRATEGY
   
   The Audit Committee received a presentation from the secretary of the university on a proposed risk management strategy developed in consultation with the university’s internal auditors. The proposed risk management strategy will involve more robust statutory compliance analysis and reporting, greater involvement by the secretary of the university in internal audit project management, a new risk management policy, and a renewed approach to risk mitigation reporting by the university. The risk management policy, which will provide the framework for the risk management strategy as a whole, is expected to be presented to board for consideration at the October 2013 or February 2014 meeting.

/rnw

David McKay
Chair
This report is submitted following the committee’s meeting of 22 May 2013.

Prior to the meeting, the committee convened for an orientation session led by the vice-president, administration & finance and the secretary of the university. The orientation session was followed by a tour of a QNC mechanical room, the expanded Health Services facility, and a bus tour of the northwest campus, the site of the new daycare facility, and the south campus generally.

Following the tour, the committee chair convened the regular business meeting.

FOR APPROVAL

1. Applied Health Sciences Expansion

   Motion: To approve a $12 million project budget for the construction of an expansion building for applied health sciences – kinesiology on a portion of parking lot M

   Background: Although the Department of Kinesiology has experienced significant enrolment and research growth in recent years, building expansion has not occurred to support the department’s activities. This has resulted in significant space needs for undergraduate teaching classrooms and laboratories, graduate teaching labs and research labs. The expansion will be approximately 30,000 gross square feet. Project completion would be scheduled for 2015/2016. Funding will come from the faculty ($4 million from its provincial graduate growth capital funding allocation) and the university ($3.5 million in support of the lecture hall component), with the balance to be funded through the faculty’s fundraising efforts and operating budget.

2. Federation Hall Addition/Renovation

   Motion: To approve a $5.2 million project budget for the renovation and expansion of Federation Hall.

   Background: In January 2010, Food Services temporarily relocated its catering operations from South Campus Hall so that the vacated space could be renovated for the new Student Success Office. Subsequently, the university took responsibility for Federation Hall and plans are underway to renovate the facility as a premier meeting and event facility. The university’s catering demands continue to increase across the spectrum of activities. The project contemplates an 18,900 square foot addition on the ground floor, plus a mechanical penthouse. Food Services has allocated $1.2 million from its accumulated surplus, the university is allocating $2 million in recognition of the required relocation expenses, and the balance will be repaid by Food Services over the next five to seven years from operating surpluses.

3. Needles Hall Addition

   Motion: To approve the awarding of a design-build contract (CCDC-14) to Melloul-Blamey Construction for $11,740,960 plus HST.

   Background: The recommended design-build team for this project includes Melloul-Blamey Construction, IBI Group architects, The Mitchell Partnership Inc. (mechanical engineering), and Rombald Inc. (electrical engineering). Five prequalified design-build teams submitted bids ranging from a low of $11,440,000 ($238/sf) to a high of $13,739,000 ($286/sf), representing a 20% range in
the bids. The three lowest bids were within 3%. The design-build team which ranked highest on the 60% design criteria was the Melloul-Blamey Construction proposal. It was within $300,000 of the lowest bid price, and meets the budget requirements of the project.

4. Cell Tower
   Motion: To approve that the university proceed with finalizing the necessary arrangements (which may include an easement) to permit the installation of a monopole cell tower along the north side of the Health Services Road.

   Background: The university has been receiving an increasing number of reports regarding poor cell service at certain locations on the south campus. Information provided by the major cell carriers indicates that an increasing number of subscribers and increasing volumes of data are contributing to service interruptions and that additional infrastructure is required proximate to the centre of the south campus.

FOR INFORMATION

5. Campus Master Plan
   The committee received a general introduction to the Campus Master Plan, and consistent with the committee’s terms of reference, agreed to bring the item back to the committee’s next meeting for further discussion of the plan relative to the university’s strategic planning objectives.

6. General Oversight
   The committee reviewed and accepted for information:
   • the capital financing commitments associated with capital projects and advises that these commitments fall within Waterloo’s board-approved debt policy
   • the status of capital projects
   • the university’s maintenance program and energy conservation efforts
   • its terms of reference and work plan.

22 May 2013

Murray Gamble
Chair
This report is submitted following the committee’s meeting of 13 May 2013.

FOR APPROVAL

1. Endowment Fund Investment Guidelines
Motion: To approve the revised Endowment Fund Investment Guidelines (the “Guidelines”). See Attachment 1.

Background: Following its annual review of the Guidelines and taking into consideration changes made to the registered pension plan’s Statement of Investment Policies and Procedures, the committee recommends approval of the following changes to the Guidelines:
- Adjustments necessary to reflect the changes in asset mix and investment management (primarily active);
- An adjustment to clarify the role of the benchmark portfolio; and
- Revisions to clarify the conflict of interest provisions.

FOR INFORMATION

2. 2013/14 Operating Budget
Following a review of the operating budget for 2013/14, the committee passed a motion endorsing the proposed budget for approval by the Board of Governors.

3. General Oversight
The committee reviewed and confirmed the adequacy of its terms of reference and the terms of reference for Finance & Investment Subcommittee, Pension & Benefits Committee and Registered Pension Plan Investments Subcommittee.

/rmw

Prem Watsa
Chair
University of Waterloo
Endowment Fund Investment Guidelines

March 2013 May 2011
1. Background and Purpose

This document has been prepared to provide guidelines for the prudent and effective management of the University of Waterloo Endowment Fund (the "Fund") and to maximize investment income within acceptable risk tolerances, while preserving the Fund's capital. These Funds are invested in perpetuity to achieve an annual income stream to fund specific activities of the University of Waterloo (the "university") and to preserve their purchasing power.

This document has been prepared in accordance with the relevant legislation to ensure continued prudent and effective management of the Fund's assets. Deviating from these guidelines is only allowed with the prior written approval of the Finance and Investment Committee (the "F&I Committee").

2. Allocation of Responsibilities

The Board of Governors of the University of Waterloo (the "Board") has established the F&I Committee to assist in the determination of the university's overall investment policies, objectives and strategies.

With respect to investment policies, objectives and strategies, the F&I Committee will make recommendations to the Board in the following areas:

- the content of these guidelines;
- the selection of Fund Managers; and
- the selection of a Custodian/Trustee to hold the assets of the Fund.

In addition, the F&I Committee will:

- review these guidelines annually;
- review the performance of the Fund on at least an annual basis;
- review Fund Manager performance on at least an annual basis;
- be responsible for the delegation of any responsibilities not specifically mentioned.

The Fund Managers will:

- participate, at least semi-annually, in performance reviews;
- forward to the university quarterly reviews of investment performance, expectations of future returns on various asset classes and proposed investment strategies for the following 12 to 24 months;
- upon direction of the F&I Committee, invest in passive asset classes such as indexed bond fund, indexed equity fund, etc.;
- manage asset mix and select securities within each asset class, subject to applicable legislation and the constraints set out in these guidelines;
- provide the university with regular valuation statements for the Fund;
- advise the university immediately of any changes in its senior investment personnel and/or significant changes in the size or mix of assets managed;
• comply with all relevant laws concerning the investment of the Fund; and
• complete and deliver a compliance report (see page 11) to the university each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with these guidelines during the quarter. In the event that the Fund Manager is not in compliance with these guidelines, the Fund Manager is required to advise the university immediately, detail the nature of the non-compliance and recommend the appropriate course of action to remedy the situation.

The Fund Manager is expected to comply, at all times and in all respects, with the Code of Ethics and Standards of Professional Conduct as promulgated by the CFA Institute.

The Fund Manager will manage the assets with the care, diligence and skill that an investment manager of ordinary prudence would use in dealing with endowment assets. The Fund Manager will also use all relevant knowledge and skill that it possesses or ought to possess as a prudent investment manager.

The Custodian/Trustee will:
• fulfill the regular duties required by law of a Custodian/Trustee and perform the specific duties required of the Custodian/Trustee pursuant to agreements entered into from time to time with the university; and
• provide the university with monthly portfolio reports of all assets of the Fund and transactions during the period.

3. Return Expectation, Benchmark Portfolio, Fund Manager Investment Objectives

Return Expectation
The rate of return objective of the Fund is to provide a real rate of return of at least 5%, net of all expenses, and maintain the purchasing power of the endowed capital. The performance of the Fund will be measured over four-year rolling periods. With an annual expenditure target of 5%, the purchasing power of the Fund is maintained whenever possible by annually reinvesting investment income in an amount equal to the annual CPI. Unspent expendable amounts or parts thereof may be capitalized at the end of a fiscal year. In years when the realized income exceeds the expendable amount plus CPI, income will be directed to a reserve fund (maximum 10% of book value) to service years with low investment returns.

Investment Philosophy. All equity investments are to be made using the long-term value approach by investing in companies at prices below their underlying long-term values to protect capital from loss and earn income over time. The fund managers will attempt to identify financially-sound companies with good potential profitability which are selling at a discount to their intrinsic value. Appropriate measures of low prices may consist of: low price-earnings, high dividend yields, significant discounts to book value and low price to free cash flow. Downside protection is obtained by seeking a margin of safety in terms of sound financial position and a low price in relation to intrinsic value. Appropriate measures of financial integrity include debt/equity ratios, financial...
leverage, asset turnover, profit margin, return on equity, and interest coverage. It is anticipated that purchases will be made when economic and issue-specific conditions are less than ideal and sentiment is uncertain or negative. Conversely, it is expected that gains will be realized when issue specific factors are positive and sentiment is buoyant. Assets of the Fund are administered and managed on a combined basis through specialist portfolios. Fund managers will be expected to generate a rate of return in the first quartile or better over a market cycle.

**Volatility Expectation**
The volatility of the Fund is directly related to its asset mix, and specifically, the balance between bonds, Canadian equities and global foreign equities. Since the Fund Managers do not have authority to make leveraged investment on behalf of the Fund, the volatility of the Fund should be similar to the volatility of the Benchmark Portfolio set out below.

**Benchmark Portfolio**
A benchmark portfolio invested in the following assets is used to measure the consequences of asset mix decisions at the total fund level.

A portfolio invested in the following asset mix should achieve the return expectation at an acceptable level of investment risk over the long term.

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Benchmark</th>
<th>Domestic Canadian Fixed Income</th>
<th>After Canadian Equity Managers</th>
<th>After Global Equity Managers</th>
<th>Passive Index Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Equities</td>
<td>S&amp;P/TSX (Capped 10%) Composite</td>
<td></td>
<td>30.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Equities (Hedged)</td>
<td>S&amp;P-500 $-Cdn</td>
<td></td>
<td></td>
<td>40.0%</td>
<td></td>
</tr>
<tr>
<td>Global Equities</td>
<td>MSCI World</td>
<td></td>
<td></td>
<td>220.0%</td>
<td></td>
</tr>
<tr>
<td>Fixed Income</td>
<td>DEX Universe Bond</td>
<td>320.0%</td>
<td>30.0%</td>
<td>20.0%</td>
<td></td>
</tr>
</tbody>
</table>

---

49
A diversified management structure has been adopted for the Fund consisting of several managers. This structure has been adopted as it is believed that the different investment mandates will result in increased diversification, while reducing the "manager risk" effect for the total Fund.

The investment management structure employs a mix of active and passive management styles. Active management has been adopted for portions of the assets as it provides the opportunity to outperform common market indices over the long-term, with a minimum degree of excess risk. Passive management has been adopted for portions of the assets as it minimizes the risk of underperformance relative to a benchmark index and is generally less expensive than active management.

**Fund Manager Investment Objectives**
Subject to the constraints cited in section 4, Fund Managers will employ security selection and asset mix strategies to try to add to the returns that would be earned by passively managing their respective investment portfolio as described below. The objective of passive management is to match the return that could be earned by investing in securities that compose an index that is representative of a specific market.

Fund Manager performance will be considered satisfactory if the annualized return (before investment management fees) over any consecutive four-year rolling period exceeds the return that could have been earned by passively managing the combined Benchmark Portfolio by the following amounts:

- 50 bps by Active Canadian Fixed Income Managers;
- For the Passive Canadian Fixed Income Manager (excluding U.S. Treasury bonds), performance will be considered satisfactory if the tracking error is not more than +/- 10 bps over one-year periods and +/- 6 bps over four-year periods;
- 100 bps for Active Canadian Equity Managers;
- 200 bps for Active Global Equity Managers; and
- For the hedged Passive U.S. Equity Manager, performance will be considered satisfactory if the tracking error is not more than +/- 200 bps over one-year periods and +/- 50 bps over four-year periods.

**4. Aggregate Investment Limits and Permitted Categories, Asset Mix Policy**

**Aggregate Investment Limits and Permitted Categories**
At all times, the market value of the individual asset classes will be within the following minimum and maximum aggregate investment limits:
Asset Classes

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash or Equivalents</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Equities</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Alternatives</td>
<td>0%</td>
<td>20%</td>
</tr>
</tbody>
</table>

* These assets can be held in any combination of pooled funds or individual investments.
** Minima and maxima do not sum to the total, as this would introduce artificial constraints.

Liquidity
All investments should be reasonably liquid (i.e. under normal circumstances, they should be capable of liquidation within one month).

Passively and Specialty Managed Investments
Assets that are passively managed or managed by specialty managers (e.g., global equities) are normally expected to be 100% invested with minimal, generally less than 2%, cash. The Passive Manager may equitize cash within its pooled funds.

Cash or Equivalents
Cash on hand, demand deposits, treasury bills, short-term notes and bankers' acceptances, term deposits and guaranteed investment certificates.

Fixed Income
Bonds (including real-return bonds), debentures, mortgage loans, mortgage-backed securities, preferred shares and asset-backed securities (ABSs). Investments in Canadian bonds and debentures will have a minimum rating of BBB or an equivalent rating, as rated by at least two of the three Recognized Bond Rating Agencies at the time of purchase. The following rating agencies shall be considered to be "Recognized Bond Rating Agencies": (i) Dominion Bond Rating Service (Canadian issuers only); (ii) Standard and Poor's and (iii) Moody's Investor Services. Not more than 10% of the market value of the Canadian fixed income securities shall be invested in BBB bonds or debentures. In addition, up to 10% of the actively managed fixed income portfolio (excluding the buy-and-hold U.S. Treasury bonds) may be invested in debt denominated in U.S. currency, including debt issued by the U.S. Government, its agencies and instrumentalities. No other foreign currency debt will be purchased.

Equities
Common shares, rights, warrants, global depository receipts, exchange-traded index participation units, units of income trusts domiciled in jurisdictions that provide limited liability protection to unit holders and securities convertible into common shares. American Deposit Receipts (ADRs) are considered to be non-Canadian/non-U.S. investments. No single equity shall represent more than 10% of the total market value of any one of the Fund Manager's equity portfolios.
Alternatives
Investments outside the traditional asset classes of cash, bonds and stocks. Examples of alternative investments are real estate, infrastructure, private equity and hedge funds.

Downgrades in Rating Quality
In the event that a security is downgraded below the stated minimum in the guidelines, the Fund Manager will take the following steps: (i) the university will be notified of the downgrade by telephone at the earliest possible opportunity; (ii) within ten business days of the downgrade, the Fund Manager will advise the university in writing of the course of action taken or to be taken by the Fund Manager, and its rationale; and (iii) immediately upon downgrade, the Fund Manager will place the asset on a Watch List subject to monthly review by the Fund Manager with the university until such time as the security matures, is sold or until it is upgraded to a level consistent with the purchase quality standards as expressed in the guidelines mentioned above.

Split Ratings
In cases in which the Recognized Bond Rating Agencies do not agree on the credit rating, the bond will be classified according to the methodology used by Scotia Capital, which states: (i) if two agencies rate a security, use the lower of the two ratings; (ii) if three agencies rate a security, use the most common; (iii) if all three disagree, use the middle rating.

Derivatives, Options and Futures
Derivatives, options and futures on any securities allowable under the investment guidelines, including index options and futures. These instruments will be used to protect against losses from changes in exchange rates, interest rates and market indices. Aggregate limits encompass the securities underlying the futures and options. Upon prior written confirmation from the F&I Committee that such investments may be made, derivatives may be used as a substitute for more traditional investments if they are based on and are consistent with achieving the long-term asset mix goal and rate of return objectives of the Fund. Such products include debt, equity, commodity and currency futures, options, swaps and forward contracts, and pooled or segregated funds that employ derivatives and synthetic products for purposes consistent with the investment objectives of the Fund. Synthetic products used as substitutes for more traditional investments will not be used to gain leveraged exposure to various asset classes and will be collateralized by cash equal to the risk-adjusted market value of the synthetic exposure. Hedging the currency on a fund position in a non-Canadian dollar investment is allowed into Canadian dollars only, with written approval of the university. Sufficient assets must be held to cover commitments due to the derivatives transactions. No derivatives can be used for speculative trading or to create a portfolio with leverage. Purchase or sale of any of these instruments for speculative purposes is prohibited.

Pooled Funds
Open pooled funds investing in the asset categories noted above. The aggregate limits for these categories are inclusive of the underlying assets in the pooled funds.

Global investments may only be made by the Active Global Equity Manager. Active Canadian Managers may only invest in Canadian investments, excluding any references to the contrary specifically outlined above. Passive Managers may only invest in securities that are contained in the
appropriate benchmark index(es) for their mandate(s), subject to residual cash holdings and approved purchases of U.S. treasury bonds.

Asset Mix Policy
The selection of investments is to be made with consideration given to the overall context of the investment portfolio without undue risk of loss or impairment and with a reasonable expectation of fair return or appreciation given the nature of the investments. All investments shall be made in accordance with all applicable legislation and the investment principles outlined above.

5. Rebalancing

The Fund will adjust the asset mix consistent with the investment objectives described in this document.

6. Conflict of Interest Policy and Disclosure Requirements

These guidelines apply to members of the F&I Committee, Fund Managers, Custodians, Trustees, the university and any employee or agent retained to provide services to the Fund.

Conflict of Interest Policy—Consistent with UW Policy 69 “Conflict of Interest”, any person listed above must disclose any direct or indirect association or material interest or involvement in aspects related to her/his role with regard to the investments of the Fund that would result in any potential or actual conflict of interest.

Without limiting the generality of the foregoing, this would include any interest in any asset of the Fund, ownership, or control over an asset held by the Fund, participation in the management or membership on the boards of other corporations with which the Fund is invested or which have significant investments in assets held by the Fund, or interest in actual or proposed contracts involving the Fund.

Persons who are unsure as to whether or not a conflict of interest exists can seek clarification from the Secretariat on whether or not it is necessary to follow the procedures below.

Disclosure Requirements—Persons listed above shall disclose the nature and extent of any conflict to the F&I Committee in writing upon becoming aware of the conflict; if knowledge of the conflict arises in the course of a discussion at a meeting, such disclosure will be made verbally and recorded in the minutes of the meeting.

If the person disclosing the conflict does not have voting power, he/she will refrain from participating in discussion and voting on the matter in respect of which the individual has a potential or actual conflict of interest. If the person is the chair, the chair will step down for the duration of the discussion and the members will choose one of their number to fill the chair during that period. If the person disclosing the conflict does not have voting power, he/she may elect to continue in his/her
activities in respect to the issue in conflict only with the unanimous approval of the members with voting rights.

The notification of a conflict made by him/her shall be considered a continuing disclosure on that issue, until such time as he/she advises that the conflict no longer exists.

7. Lending of Cash and Securities

The Fund may not lend cash other than through investments described in these guidelines. Upon approval of the university, the Fund may enter into securities loan agreements. Such loans must be secured by cash and/or readily marketable government bonds, treasury bills and/or letters of credit, discount notes and banker’s acceptances of Canadian chartered banks. The amount of collateral taken for securities lending should reflect best practices in local markets. The market value relationship between collateral and securities on loan must be calculated at least daily. For equity loans, high quality, liquid assets, may also be accepted as collateral. The terms and conditions of any securities lending program will be set out in a contract with the Custodian. The Custodian shall, at all times, ensure that the university has a current list of those institutions that are approved to borrow the investments of the Fund. Where the Fund is invested in pooled Fund, security lending will be governed by the terms and conditions set out in the pooled fund contract.

8. Delegation of Voting Rights

The Fund Managers are delegated the responsibility of exercising all voting rights acquired through the investments of the Fund. The Fund Managers will exercise acquired voting rights with the intent of fulfilling the investment objectives and guidelines of the Fund. At least on an annual basis, the Fund Managers shall report their voting rights to the university. However, in those situations in which the exercise of voting rights could have significant financial impact upon the assets of the Fund, the Fund Managers will secure guidance from the university as to how the rights should be voted. On items for which the Fund Manager has voted against management, the Fund Manager will provide the university with their rationale for voting in this manner at least on an annual basis. Further, the Fund Managers should advise the university regarding their voting on any unusual items at least on an annual basis.

9. Valuation of Investments

It is expected that all the securities held by the Fund will have an active market and therefore valuation of the securities held by the Fund will be based on their market values.

The Fund Managers will notify the university if the market for any investment held by the Fund becomes inactive and provide for the university’s consideration a method for valuing the affected investment.
10. Borrowing

The Fund shall not borrow money.

11. Conflicts between the Guidelines and Pooled Fund Investment Policies

To the extent that the assets of the Fund are invested in pooled funds, the provisions of the pooled fund's own investment policy will supersede these guidelines. The Fund Manager is required to advise the university in the quarterly compliance report in the event of any material discrepancies between the guidelines and the pooled fund's own investment policy.

In the event that the Fund Manager is not in compliance with the Fund Manager's own investment policy, the Fund Manager is required to advise the university immediately, detail the nature of the non-compliance and recommend an appropriate course of action to remedy the situation.

12. Dismissal of a Fund Manager

Reasons for considering the termination of the services of a Fund Manager include, but are not limited to, the following factors:

• performance results which are below the stated performance benchmarks;
• changes to the overall structure of the assets of the Fund such that the Fund Manager's services are no longer required;
• changes in personnel, firm structure, ownership or investment philosophy; and/or,
• failure to adhere to these guidelines.

In the event that a new Fund Manager must be selected or additional Fund Manager(s) are added to the existing structure, the university will undertake an investment manager search. The criteria used for selecting a Fund Manager will be consistent with the investment and risk objectives set out in Section 3.

13. Guidelines Review

The guidelines may be reviewed and amended at any time, but must be formally reviewed by the university at least annually.
To be completed by Fund Managers each quarter.

UNIVERSITY OF WATERLOO
BOARD OF GOVERNORS
Finance and Investment Committee

This is to certify that I/we have adhered to the guidelines contained in the March 2013 May 2014 version of the “Endowment Fund Investment Guidelines” for the University of Waterloo, approved by the University of Waterloo.

Signed ____________________
On behalf of ____________________
Date ____________________
1. Actuarial Valuation of the UW Pension Plan as at 1 January 2013

**Motion:** To approve the “Actuarial Report: University of Waterloo Pension Plan” as of 1 January 2013 (the “Valuation”), recognizing that the report will not be filed with the Financial Services Commission of Ontario (FSCO).

**Background:** The University of Waterloo Pension Plan (the “Plan”) is an inflation-linked defined-benefit plan. The Plan is funded by contributions from the employees and the university and by investment returns. The total annual contribution is determined by applying actuarial methods with assumptions about investment returns, mortality, inflation and salaries.

Due to the volatile investment markets and low interest rate environment, the pension plan is in a deficit position. The deficit position has improved since the 1 January 2012 report due to the Plan design changes approved by the Board of Governors in October 2012 and positive investment returns for 2012. The university is making additional contributions to meet the unfunded liability. The university filed a valuation report with FSCO as of 1 January 2011; the next required filing is as of 1 January 2014. The university has applied to the Ministry of Finance for temporary solvency funding relief in connection with the 1 January 2014 actuarial valuation.

A copy of the Valuation can be requested through the committee’s secretary, ext. 35924.

### Financial Position of the Plan

**Going Concern Basis.** A valuation conducted on a going-concern basis is to determine the relationship between the respective values of assets and accumulated liabilities, assuming the Plan will be maintained indefinitely.

<table>
<thead>
<tr>
<th></th>
<th>01.01.2012</th>
<th>01.01.2013 (before plan changes)</th>
<th>01.01.2013 (after plan changes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuarial value of assets</td>
<td>$961,068,289</td>
<td>$1,021,371,472</td>
<td>$1,146,705,029</td>
</tr>
<tr>
<td>Actuarial liability</td>
<td>$1,120,943,191</td>
<td>$1,175,446,983</td>
<td></td>
</tr>
<tr>
<td>Funding excess (unfunded liability)</td>
<td>$(159,874,902)</td>
<td>$(154,075,511)</td>
<td>$(125,333,557)</td>
</tr>
<tr>
<td>Deferred asset gain (loss) due to asset smoothing</td>
<td>$(12,490,977)</td>
<td>$7,010,202</td>
<td>$7,010,202</td>
</tr>
<tr>
<td>Market value of assets</td>
<td>$1,012,423,454</td>
<td>$1,089,990,306</td>
<td>$1,089,990,306</td>
</tr>
</tbody>
</table>

The actuarial liabilities shown above have been discounted based on a 3.85% real rate of return. The actuarial value of assets for assets other than real return bonds reflects a smoothing over a three-year period of investment gains/losses in relation to the expected return on these assets. For the real return bonds, the actuarial value of assets is calculated by discounting the projected cash flow from the bonds using a discount rate of 3.85%, to be consistent with the rate used to discount the liabilities.

**Solvency Basis.** A valuation conducted on a solvency basis is used to determine the relationship between the respective values of the Plan’s assets and its liabilities assuming the Plan was wound up and settled on the valuation date. In accordance with the *Pension Benefits Act*, it is permissible to exclude certain contractual benefits (e.g., indexing) from the solvency liabilities in order to limit the magnitude of additional funding requirements for solvency purposes. This is because such additional solvency funding obligations are quite volatile as they are based on market interest rates and the market value of the assets.
in effect at each particular valuation date. Ignoring these obligations for solvency funding purposes does not, however, alter the contractual obligation with respect to indexing in place under the terms of the pension plan (the liability for indexation benefits is reflected in the going concern valuation position and funding requirements). The solvency calculation reported below excludes indexation. The solvency liability for indexation benefits is approximately $559 million at 1 January 2013, resulting in a hypothetical wind-up deficit of approximately $807 million at 1 January 2013 (including indexation).

<table>
<thead>
<tr>
<th></th>
<th>01.01.2011*</th>
<th>01.01.2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market value of assets (net of wind-up expenses)</td>
<td>$959,478,177</td>
<td>$1,089,990,306</td>
</tr>
<tr>
<td>Solvency liability</td>
<td>$996,710,462</td>
<td>$1,337,806,909</td>
</tr>
<tr>
<td>Solvency excess/(deficiency)</td>
<td>$(37,732,285)</td>
<td>$(248,316,603)</td>
</tr>
</tbody>
</table>

*The committee agreed that the solvency calculation was not required in 2012, because the 2012 valuation report was not being filed. The committee had the calculation performed for 2013, in order to assess the solvency situation in anticipation of filing a valuation report in 2014.

**Funding Requirements.** Under the funding protocols established by the committee, the university contributions to the Registered Pension Plan and Payroll Pension Plan (see below) were set at 155% of required member contributions. The full university contribution is being directed to the Registered Pension Plan to meet the current service cost requirements and to amortize the unfunded liability. In addition to the foregoing, the university has made a one-time contribution to the Payroll Pension Plan of $2.5 million to address the deficit.

**Asset Mix**

<table>
<thead>
<tr>
<th>Asset Mix (% of Total Market Value)*</th>
<th>As of 1 January 2012</th>
<th>As of 1 January 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Return Bonds</td>
<td>23%</td>
<td>21%</td>
</tr>
<tr>
<td>Fixed Income, Cash</td>
<td>37%</td>
<td>40%</td>
</tr>
<tr>
<td>Equities</td>
<td>40%</td>
<td>34%</td>
</tr>
<tr>
<td>Infrastructure**</td>
<td>N/A</td>
<td>4%</td>
</tr>
<tr>
<td>Real Estate**</td>
<td>N/A</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td><strong>100.0%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

*Asset mix is based on the underlying assets excluding in-transit contributions and payments.

**New asset classes**

**Membership Data**

<table>
<thead>
<tr>
<th>Membership Data</th>
<th>01.01.2010</th>
<th>01.01.2011</th>
<th>01.01.2012</th>
<th>01.01.2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Members</td>
<td>3499</td>
<td>3518</td>
<td>3617</td>
<td>3760</td>
</tr>
<tr>
<td>LTD Members</td>
<td>87</td>
<td>93</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td>Suspended Members</td>
<td>7</td>
<td>12</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Current Pensioners</td>
<td>1400</td>
<td>1432</td>
<td>1480</td>
<td>1555</td>
</tr>
</tbody>
</table>
Pension & Benefits Committee
Report to the Board, 4 June 2013

<table>
<thead>
<tr>
<th>Deferred Pensioners</th>
<th>394</th>
<th>422</th>
<th>447</th>
<th>448</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5387</td>
<td>5477</td>
<td>5650</td>
<td>5872</td>
</tr>
</tbody>
</table>

History of Asset Returns. The following table shows the history of asset returns for the last six years:

<table>
<thead>
<tr>
<th>Year Ending</th>
<th>Return on Market Value *(After Expenses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 December 2007</td>
<td>1.62%</td>
</tr>
<tr>
<td>31 December 2008</td>
<td>-21.51%</td>
</tr>
<tr>
<td>31 December 2009</td>
<td>14.70%</td>
</tr>
<tr>
<td>31 December 2010</td>
<td>8.49%</td>
</tr>
<tr>
<td>31 December 2011</td>
<td>2.89%</td>
</tr>
<tr>
<td>31 December 2012</td>
<td>9.10%</td>
</tr>
</tbody>
</table>

The returns (after all expenses) on market value have been calculated assuming contributions and benefit payments take place in the middle of the year.

* Excluding real return bonds

2. Statement of Investment Policies & Procedures for UW Pension Plan

Motion: To approve the 1 January 2013 version of the University of Waterloo Pension Plan (2011) Statement of Investment Policies and Procedures (the “SIPP”). See Attachment 1.

Background: Following its annual review to ensure compliance with legislative requirements and based on input from the Finance & Investment Committee and the Registered Pension Plan Investments Subcommittee, the Pension & Benefits Committee recommends approval of the following changes to the SIPP:

- Updates to reflect plan design changes approved by the Board of Governors in October 2012;
- A revision to permit flexibility in the percentage of retiree liabilities to be held in real return bonds or equivalent assets. This flexibility is necessary due to the shortage of real return bonds and the difficulty finding suitable alternatives;
- Revisions to reflect more accurately the allocation of responsibility among the Registered Pension Plan Investments Subcommittee, Finance & Investment Committee and the Pension & Benefits Committee;
- Adjustments necessary to reflect the changes in asset mix and investment management (primarily active);
- An adjustment to clarify that the role of the benchmark portfolio is to inform the actuary’s calculation of the return assumptions for the Plan; and
- Revisions to clarify the conflict of interest provisions.

FOR INFORMATION

3. Payroll Pension Plan

The University of Waterloo Payroll Pension Plan provides pension benefits (subject to plan caps) that cannot be paid from the Plan because of the application of the Income Tax Act maximum pension. The
Plan and Payroll Pension Plan are integrated from a financial management perspective. Assets are set aside within the university funds in respect of the obligations under the Payroll Pension Plan. A going concern valuation of the Payroll Pension Plan is also performed in conjunction with the annual valuation of the Plan, using the same actuarial assumptions. The values in this section are reported before (in brackets) and after taking into account the plan design changes approved by the Board of Governors in October 2012, and before taking into account the university’s additional contribution of $2.5 million. As of 1 January 2013, the actuarial liabilities of the Payroll Pension Plan were $25 million ($17.5 million). The market value of the funds set aside was $19.2 million (same). The current service cost for 2013 is $1,328,649 ($506,058) or 0.40% (0.15%) of pensionable earnings, bringing the combined university current service cost for the Plan and Payroll Pension Plan to 6.94% of pensionable earnings. When special payments to amortize the unfunded liability are taken into account, the university’s total contribution as a percentage of pensionable earnings is 11.30%.

/rmw

Bill Watson
Chair
University of Waterloo Pension Plan (2011)
STATEMENT OF INVESTMENT POLICIES AND PROCEDURES
January 1, 2013

CONTENTS
1. Purpose
2. Background, Plan Type and Liabilities
3. Allocation of Investment Responsibilities
4. Return Expectations, Benchmark Portfolio, Fund Manager Investment Objectives
5. Aggregate Investment Limits, Permitted Investment Categories, Asset Mix Policy
6. Rebalancing
7. Conflict of Interest Policy and Disclosure Requirements
8. Lending of Cash and Securities
9. Delegation of Voting Rights
10. Valuation of Investments
11. Borrowing
12. Conflicts Between the Policy and Pooled Fund Investment Policies
13. Dismissal of a Fund Manager
14. Policy Review
1. **PURPOSE**

The primary goal of the University of Waterloo Pension Plan (2009-2011) (the “Plan”) is to provide members with a defined retirement income at a reasonable cost. The prudent and effective management of the assets of the pension fund has a direct impact on the achievement of this goal. The University of Waterloo (“UW”), sponsor and legal administrator of the pension fund, is responsible for achieving this primary goal.

This document has been prepared in accordance with the relevant legislation affecting the Plan to ensure continued prudent and effective management of pension fund assets. Deviating from this Statement of Investment Policies and Procedures (“Statement”) is only allowed with the prior written approval of the Pension and Benefits Committee (“P&B Committee”).

2. **BACKGROUND, PLAN TYPE AND LIABILITIES**

The Plan is a contributory defined-benefit plan, based upon an individual’s final average salary and years of participation in the Plan prior to retirement.

All pensions are paid under the Plan are escalated annually by the cost-of-living factor described in the Plan. If the cost of living factor is 5% or less it is automatically applied for benefits accrued prior to all pensions. If it is greater than 5% and January 1, 2014, liabilities will grow in direct relation to the increase in the consumer price index (“CPI”). For benefits accrued on or after January 1, 2014, liabilities will increase by 75% of the increase in CPI. Notwithstanding the foregoing, if the increase in CPI in a given year exceeds 5%, then the indexation paid in that year will be determined by P&B Committee in its discretion, taking into account the fund’s ability to afford any increase beyond 5%. Liabilities for both active members and pensioners will grow in direct relation to inflation such an increase.

Thus, to provide pensions at a reasonable cost, it is necessary to strive for high real investment returns on the Plan assets over medium- and long-term periods. The investment philosophy, policies and procedures adopted in this document will assist in the achievement of this goal in a prudent and effective manner. In addition to the investments described in Section 4, the Plan holds real return bonds that are not actively traded and are intended to provide protection against inflation for a significant portion of the Plan’s indexed pensioner and beneficiary obligations. Subject to annual review, the long-term objective of the Plan is to hold a maximum of 70% of the retiree liabilities in this type of investment.

This Statement has been developed taking into account factors such as: the nature of the Plan’s liabilities; the allocation of such liabilities between active and retired members; the funded and solvency positions of the Plan; the net cash flow position of the Plan; the investment horizon of the Plan; historical and expected capital market returns; and the benefits of investment diversification.

3. **ALLOCATION OF RESPONSIBILITIES**

1 A protocol is being developed to set out the parameters under which the P&B Committee would increase the level of indexation beyond 75%. 

62
The Board of Governors of the University of Waterloo (the "Board") has established a Finance and Investment Committee ("F&I Committee") to assist in the determination of UW's overall investment philosophy, policies, objectives and strategies, and a P&B Committee to assist in the management of the pension fund. A Registered Pension Plan Investments Subcommittee ("RPPI") was formed consisting of members from both F&I Committee and P&B Committee to assist in carrying out the responsibilities listed below.

RPPI will:
- review this document annually;
- review pension fund performance on at least a semi-annual basis;
- review Fund Manager performance on at least a semi-annual basis; and
- report to P&B Committee.

RPPI will make recommendations to P&B Committee and F&I Committee on:
- the content of this document;
- the selection of Fund Managers; and
- the purchase of specific investments, including real return bonds.

Working with the F&I Committee with respect to investment philosophy, policies, objectives and strategies and taking into consideration the recommendations of RPPI, the P&B Committee will make recommendations to the Board in the following areas:
- the content of this document after its annual review;
- the selection of a Consulting Actuary;
- the selection of Fund Managers;
- the selection of a Custodian/Trustee to hold the pension fund assets; and
- the purchase of real return bonds.

In addition, the P&B Committee will:
- review this document annually, taking into consideration any recommended changes from RPPI and F&I Committee;
- consider reports from RPPI on pension fund performance on at least a semi-annual basis;
- consider reports from RPPI on Fund Manager performance on at least a semi-annual basis; and
- review this document annually.

The Fund Managers will:
- participate, at least annually, in performance reviews by the P&B Committee, RPPI;
- forward to the P&B Committee quarterly reviews of investment performance, expectations of future returns on various asset classes and proposed investment strategies for the following 12 to 24 months;
upon direction of the P&B Committee, invest in passive asset classes such as indexed bond funds, indexed equity funds, real-return bonds, etc.; manage asset mix and select securities within each asset class, subject to applicable legislation and the philosophy and other constraints set out in this document; provide the P&B Committee with monthly valuation statements for the fund; advise the P&B Committee immediately of any changes in its senior investment personnel and/or significant changes in the size or mix of assets managed; comply with all relevant laws concerning the investment of the pension fund; and complete and deliver a compliance report (see page 44) to the P&B Committee and the Fund’s Consulting Actuary each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with this Statement during the quarter. In the event that the Fund Manager is not in compliance with this Statement, the Fund Manager is required to advise the P&B Committee immediately, detail the nature of the non-compliance and recommend the appropriate course of action to remedy the situation.

The Fund Managers are expected to comply, at all times and in all respects, with the Code of Ethics and Standards of Professional Conduct as promulgated by the CFA Institute.

The Fund Managers will manage the assets with the care, diligence and skill that an investment manager of ordinary prudence would use in dealing with pension plan assets. The Fund Managers will also use all relevant knowledge and skill that it possesses or ought to possess as a prudent investment manager.

The Consulting Actuary (or his/her delegate approved by P&B Committee and RPPI) will:

- assist in the preparation and subsequent annual reviews of this document;
- participate in all reviews of the Fund Managers and the Plan;
- report, at least semi-annually, on the performance of the Fund Managers and the Plan;
- comment on any changes in the Plan’s benefits, membership or contribution flow which may affect how the Plan’s assets are invested;
- comment on the impact of potential investment opportunities/strategies/legislative changes which may affect how the Plan’s assets are invested;
- assist in the development and implementation of this Statement;
- monitor the performance of the Plan and the Fund Managers on a regular basis, and contact the chair of the P&B Committee immediately if there are adverse changes of any kind, which warrant further review and/or investigation;
- support RPPI and the P&B Committee on matters related to investment management and administration of the Plan; and
- meet with RPPI and the P&B Committee as required.

The Custodian/Trustee will:

- fulfill the regular duties required by law of a Custodian/Trustee and perform the specific duties required of the Custodian/Trustee pursuant to agreements entered into from time to time with UW; and
- provide the P&B Committee with monthly portfolio printouts of all assets of the Plan and transactions during the period.
4. RETURN EXPECTATION, BENCHMARK PORTFOLIO, FUND MANAGER
INVESTMENT OBJECTIVES

**Return Expectation.** The annualized rate of return of the Plan must exceed the annualized rate of increase in the Consumer Price Index by at least 400 basis points (bps) net of the associated investment management fees over any ten-year period.

**Investment Philosophy.** All equity investments are to be made using the long-term value approach by investing in companies at prices below their underlying long-term values to protect capital from loss and earn income over time. The fund managers will attempt to identify financially-sound companies with good potential profitability which are selling at a discount to their intrinsic value. Appropriate measures of low prices may consist of: low price-earnings, high dividend yields, significant discounts to book value and low price to free cash flow. Downside protection is obtained by seeking a margin of safety in terms of sound financial position and a low price in relation to intrinsic value. Appropriate measures of financial integrity include debt/equity ratios, financial leverage, asset turnover, profit margin, return on equity, and interest coverage. It is anticipated that purchases will be made when economic and issue-specific conditions are less than ideal and sentiment is uncertain or negative. Conversely, it is expected that gains will be realized when issue-specific factors are positive and sentiment is buoyant. Assets of the Fund are administered and managed on a combined basis through specialist portfolios. Fund managers will be expected to generate a rate of return in the first quartile or better over a market cycle.

**Volatility Expectation.** The volatility of the Plan is directly related to its asset mix, and specifically, the balance between Canadian bonds, Canadian equities and foreign equities. Since the Fund Managers do not have authority to make any type of leveraged investment on behalf of the Plan, the volatility of the Plan should be similar to the volatility of the Benchmark Portfolio set out below.
Benchmark Portfolio. The following benchmark portfolio is used by the following asset mix should achieve acceptable level of investment risk over assumptions for the Plan. A portion of the Plan is invested in a buy-and-hold real return bond portfolio. The following table applies to the remaining portion of the Plan.

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Benchmark</th>
<th>Active Canadian Equity Managers</th>
<th>Active Global Equity Managers</th>
<th>Passive Canadian Fixed Income and U.S. Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Equities</td>
<td>S&amp;P/TSX Composite</td>
<td>4.20%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>U.S. Equities (Hedged-to $-Gd)</td>
<td>S&amp;P 500</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Global Equities</td>
<td>MSCI World $ Cdn</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Income</td>
<td>DEX Universe Bond</td>
<td>6.7%</td>
<td>10.0%</td>
<td></td>
</tr>
</tbody>
</table>

A portion of the Plan is invested in a buy-and-hold real return bond portfolio. The following table applies to the remaining portion of the Plan:

A diversified management structure has been adopted for the Plan consisting of several managers. This structure has been adopted as it is believed that the different investment mandates will result in increased diversification, while reducing the "manager risk" effect for the total Plan.

The investment management structure employs a mix of active and passive management styles. Active management has been adopted for portions of the assets as it provides the opportunity to outperform common market indices over the long-term, while controlling active risk levels. Passive management has been adopted for portions of the assets as it minimizes the risk of underperformance relative to a benchmark index and is generally less expensive than active management.

Fund Manager Investment Objectives. Subject to the constraints cited in section 5, Fund Managers will employ security selection and asset allocation strategies to try to add to the returns that would be earned by the alternative of passively managing their respective investment portfolio as described below. The objective of passive management is to match the return that could be earned by investing in securities that compose an index which is representative of a specific market.

Active Fund Manager performance will be considered satisfactory if the annualized return (before investment management fees) over consecutive four-year periods exceeds the return that could have been earned by passively managing the combined Benchmark Portfolio by 100 bps for Active Canadian Equity Managers, 200 bps for Active Global Equity Managers and 50 bps for Active Canadian Fixed Income Managers. Similarly, for the Canadian Balanced Managers, performance will be considered satisfactory if the annualized return (before investment management fees) over consecutive four-year periods exceeds the return that could have been earned by passively managing
5. AGGREGATE INVESTMENT LIMITS and PERMITTED CATEGORIES, ASSET MIX POLICY

Aggregate Investment Limits and Permitted Categories. At all times, the market value of the individual asset classes will be within the following minimum and maximum aggregate investment limits:

<table>
<thead>
<tr>
<th>Asset Class * +</th>
<th>Minimum **</th>
<th>Maximum **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Income</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Cash or Equivalent</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Equities</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Alternatives</td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* These assets can be held in any combination of pooled funds or individual investments.
+ The asset classes exclude real return bonds. The long-term objective of the plan is to hold 70% of retiree liabilities in this type of investment.
** Minima and maxima do not sum to the total, as this would introduce artificial constraints.

Liquidity. All investments should be reasonably liquid (i.e. under normal circumstances, they should be capable of liquidation within one month).

Passively Managed and Specialty Investments. Assets that are passively managed or managed by specialty managers (e.g. global equities) are normally expected to be 100% invested with minimal, generally less than 2%, cash. The Passive Manager may equitize cash within its pooled funds.

Cash or Equivalents. Cash on hand, demand deposits, treasury bills, short-term notes and bankers’ acceptances, term deposits and guaranteed investment certificates.

Equities. Common shares, rights, warrants, global depository receipts, exchange-traded index participation units, units of income trusts domiciled in jurisdictions that provide limited liability protection to unitholders and securities convertible into common shares. American Deposit Receipts (ADRs) are considered to be Non-Canadian/Non-US investments. No single equity shall represent more than 10% of the total market value of any one of the Fund Manager’s equity portfolios.
**Fixed Income.** Bonds (including real-return bonds), debentures, mortgage loans, mortgage-backed securities, preferred shares and asset-backed securities (ABS's). Investments in Canadian bonds and debentures will have a minimum rating of BBB or an equivalent rating, as rated by at least two of the three Recognized Bond Rating Agencies at the time of purchase. The following rating agencies shall be considered to be “Recognized Bond Rating Agencies”: (i) Dominion Bond Rating Service (Canadian issuers only); (ii) Standard and Poor’s and (iii) Moody’s Investor Services. Not more than 10% of the market value of the Canadian fixed income securities shall be invested in BBB bonds or debentures. In addition, up to 10% of the actively managed fixed income portfolio (excluding the buy and hold U.S. treasuries) may be invested in debt denominated in U.S. currency, including debt issued by the U.S. Government, its agencies and instrumentalities. No other foreign currency debt will be purchased.

**Alternatives.** Investments outside the traditional asset classes of stocks, bonds and cash. Examples of alternative investments are real estate, infrastructure, private equity, and hedge funds.

**Downgrades in Rating Quality.** In the event that a security is downgraded below the stated minimum in the Statement, the following steps will be taken: (i) The Fund Manager will notify UW of the downgrade by telephone at the earliest possible opportunity; (ii) Within ten business days of the downgrade, the Fund Manager will advise UW in writing of the course of action taken or to be taken by the Fund Manager, and its rationale; and (iii) Immediately upon downgrade, the Fund Manager will place the asset on a Watch List subject to monthly review by the Fund Manager with UW until such time as the security matures, is sold or until it is upgraded to a level consistent with the purchase quality standards as expressed in the guidelines mentioned above.

**Split Ratings.** In cases in which the Recognized Bond Agencies do not agree on the credit rating, the bond will be classified according to the methodology used by DEX, which states: (i) if two agencies rate a security, use the lower of the two ratings; (ii) if three agencies rate a security, use the most common; (iii) if all three disagree, use the middle rating.

**Derivatives, Options and Futures.** Derivatives, options and futures on any securities allowable under the Statement, including index options and futures. These instruments will be used to protect against losses from changes in exchange rates, interest rates and market indices. Aggregate limits encompass the securities underlying the futures and options. Upon prior written confirmation from the P&B Committee that such investments may be made, derivatives may be used as a substitute for more traditional investments if they are based on and are consistent with achieving the Plan’s long-term asset mix goal and rate of return objectives. Such products include debt, equity, commodity and currency futures, options, swaps and forward contracts, pooled or segregated funds that employ derivatives and synthetic products for purposes consistent with the investment objectives of the fund. Synthetic products used as substitutes for more traditional investments will not be used to gain leveraged exposure to various asset classes and will be collateralized by cash equal to the risk-adjusted market value of the synthetic exposure. Hedging the currency on a fund position in a non-Canadian dollar investment is allowed into Canadian dollars only. Sufficient assets must be held to cover commitments due to the derivatives transactions. No derivatives can be used for speculative trading or to create a portfolio with leverage. Purchase or sale of any of these instruments for speculative purposes is prohibited.

**Pooled Funds.** Open-ended pooled funds investing in the asset categories noted above. The aggregate limits for these categories are inclusive of the underlying assets in the pooled funds.
Global investments may only be made by the Active Global Equity Managers. Active Canadian Managers may only invest in Canadian investments, excluding any references to the contrary specifically outlined above. Passive Managers may only invest in securities that are contained in the appropriate benchmark index(es) for their mandate(s), subject to residual cash holdings and approved purchases of U.S. treasuries.

Asset Mix Policy. The selection of investments is to be made with consideration given to the overall context of the investment portfolio without undue risk of loss or impairment and with a reasonable expectation of fair return or appreciation given the nature of the investments. All investments shall be made in accordance with all applicable legislation and the investment principles outlined above.

6. REBALANCING

The Plan will adjust the asset mix consistent with the investment philosophy described in this document.

7. CONFLICT OF INTEREST POLICY AND DISCLOSURE REQUIREMENTS

These guidelines apply to members of the RPP, P&B, Committee, F&I Committee, Fund Managers, Consulting Actuary, Custodian/Trustee, the Administrator and any employee or agent retained to provide services to the Plan.

Conflict of Interest Policy. Consistent with UW Policy 69, "Conflict of Interest", any person listed above must disclose any direct or indirect association or material interest or involvement in aspects related to her/his role with regard to the Pension Plan investments that would result in any potential or actual conflict of interest.

Without limiting the generality of the foregoing, this would include: any interest in any asset of the pension fund; material ownership or control over an asset held by the Fund; participation in the management or membership on the boards of other corporations, or with which the Fund is invested or which have significant investments in assets held by the Fund, or interest in actual or proposed contracts involving the Fund. However, being a member of the Plan itself is not sufficient to constitute a potential conflict of interest.

Persons who are unsure as to whether or not a conflict of interest exists can seek clarification from the Secretariat on whether it is necessary to follow the procedures below.

Disclosure Requirements. Persons listed above shall disclose the nature and extent of any conflict to the Committee in writing upon becoming aware of the conflict; if knowledge of the conflict arises in the course of a discussion at a meeting, such disclosure will be made verbally and recorded in the minutes of the meeting.

If the person disclosing the conflict has voting power, he/she will refrain from participating in discussion and voting on the matter in respect of which the individual has a potential or actual conflict of interest. If the person is the chair, the chair will step down for the duration of the discussion and the members will choose one of their number to fill the chair during that period.
If the person disclosing the conflict does not have voting power, he/she may elect to continue in her/his activities with respect to the issue in conflict only with the unanimous approval of the members with voting rights.

The notification made by her/him of a conflict shall be considered a continuing disclosure on that issue, until such time as he/she advises that the conflict no longer exists.

**Related Party Transactions.** For the purpose of this section, a “related party” and a “transaction” in respect of the Plan have the meanings given to such terms in Schedule III of the Pension Benefits Standards Regulations, 1985 (Canada). The following related party transactions are permitted for the Plan:

- any transaction that is required for the operation or administration of the Plan, the terms and conditions of which are not less favourable to the Plan than market terms and conditions;
- any transaction the value of which is nominal (that is, less than 3% of the market value of the Plan) or which is immaterial to the Plan (that is, the terms and conditions of the transaction are not less favourable to the Plan than market terms and conditions); two or more transactions with the same related party shall be considered a single transaction; and
- any purchase of securities of a related party, provided that those securities are acquired at a public exchange recognized under the *Pension Benefits Standards Act* and Regulations, 1985 (Canada).

**8. LENDING OF CASH AND SECURITIES**

The pension fund may not lend cash other than through investments described in this policy. Upon approval of the P&B Committee, the pension fund may enter into securities loan agreements. Such loans must be secured by cash and/or readily marketable government bonds, treasury bills and/or letters of credit, discount notes and banker’s acceptances of Canadian chartered banks. The amount of collateral taken for securities lending should reflect best practices in local markets. The market value relationship between collateral and securities on loan must be calculated at least daily. For equity loans, high quality, liquid assets, may also be accepted as collateral. The terms and conditions of any securities lending program will be set out in a contract with the Custodian. The Custodian shall, at all times, ensure that the UW has a current list of those institutions that are approved to borrow the Plan’s investments. Where the Plan is invested in a pooled fund, security lending will be governed by the terms and conditions set out in the pooled fund contract.

**9. DELEGATION OF VOTING RIGHTS**

The Fund Managers are delegated the responsibility of exercising all voting rights acquired through the Plan’s investments. The Fund Managers will exercise acquired voting rights with the intent of fulfilling the investment objectives and policies of the Plan. At least on an annual basis, the Fund Managers shall report their voting rights to the P&B Committee. However, in those situations in which the exercise of voting rights could have significant financial impact upon the Plan’s assets, the Fund Managers will secure guidance from the P&B Committee as to how the rights should be voted. Further, the Fund Managers should advise the P&B Committee regarding their voting on any unusual items or items they voted against management (together with reasons) at least on an annual basis.
10. VALUATION OF INVESTMENTS

It is expected that all the securities held by the Plan will have an active market and therefore valuation of the securities held by the Plan will be based on their market values.

The Fund Managers will notify the P&B Committee if the market for any investment held by the Plan becomes inactive and provide for the Committee’s consideration a method for valuing the affected investment.
11. BORROWING

The Plan shall not borrow money.

12. CONFLICTS BETWEEN THE POLICY AND POOLED FUNDS INVESTMENT POLICIES

To the extent that the Plan’s assets are invested in a pooled fund, the provisions of the pooled fund’s own investment policy will supersede the above guidelines. The Fund Manager is required to advise UW in a quarterly compliance report in the event of any material discrepancies between the above guidelines and the pooled fund’s own investment guidelines.

In the event that the Fund Manager is not in compliance with the Fund Manager’s own investment policy, the Fund Manager is required to advise UW immediately, detail the nature of the non-compliance and recommend an appropriate course of action to remedy the situation.

13. DISMISSAL OF A FUND MANAGER

Reasons for considering the termination of the services of a Fund Manager include, but are not limited to, the following factors:

- performance results which are below the stated performance benchmarks;
- changes to the overall structure of the Plan’s assets such that the Fund Manager’s services are no longer required;
- changes in personnel, firm structure, ownership or investment philosophy; and/or,
- failure to adhere to this Statement.

In the event that a new Fund Manager must be selected or additional Fund Manager(s) are added to the existing structure, UW will undertake an investment manager search. The criteria used for selecting a Fund Manager will be consistent with the investment and risk philosophy set out in Section 4.

14. POLICY REVIEW

The Statement may be reviewed and amended at any time, but it must be formally reviewed by UW at least annually.

January 2013
To be completed by Fund Managers immediately prior to each quarterly review.

UNIVERSITY OF WATERLOO
REGISTERED PENSION PLAN INVESTMENTS SUBCOMMITTEE

This is to certify that I/we have adhered to the guidelines contained in the January 2013 version of the “Statement of Investment Policies and Procedures” for the University of Waterloo Pension Plan (2006-2011), approved by the Board of Governors of the University of Waterloo.

Signed ____________________________
On behalf of ____________________________
Date ____________________________
Note from the Executive Director

Harnessing the quantum world will lead to new technologies and applications that will change the world. The quantum properties of nature allow the accomplishment of tasks which seem intractable with today’s technologies, offer new means of securing private information and foster the development of new sensors with precision yet unseen.

In a short 10 years, the Institute for Quantum Computing (IQC) at the University of Waterloo has become a world-renowned institute for research in the quantum world. With more than 160 researchers, we are well on our way to reaching our goal of 33 faculty, 60 post doctoral fellows and 165 students. The research has been world class and many results have received international attention. We have recruited some of the world’s leading researchers and rising stars in the field.

2012 has been a landmark year. Not only did we celebrate our 10th anniversary, but we also expanded into our new headquarters in the Mike and Ophelia Lazaridis Quantum-Nano Centre in the heart of the University of Waterloo campus. This 285,000 square foot facility provides the perfect environment to continue our research, grow our faculty complement and attract the brightest students from around the globe.

In this report, you will see many examples of the wonderful achievements we’ve celebrated this year. IQC researcher Andrew Childs and his team proposed a new computational model that has the potential to become an architecture for a scalable quantum computer. Professors Thomas Jennewein and Kevin Resch generated three entangled photons, a powerful resource to fuel novel quantum technologies. Researchers Vadim Makarov and Thomas Jennewein successfully demonstrated quantum teleportation over 143 kilometres. These and other research discoveries at IQC are continuing to enhance the field of quantum science and elevate IQC to an internationally recognized leader in quantum research and experimentation.

IQC’s recent accomplishments are notable, but only reveal half of the story. Over the coming years, IQC will expand to its full complement of researchers and students – rivaling the world’s largest quantum information research institutes. Our research will expand from discovery and experimentation to discovery, experimentation and innovation. We will uncover new and exciting ways to utilize the quantum properties of nature to develop devices that will revolutionize fields such as oil exploration, health care, and information security. We will continue to reach into the atomic
world to understand, control and harness the laws of quantum mechanics for the betterment of society.

IQC has enjoyed a considerable lead in developing the infrastructure and resources required to remain a world leader in this important area of research. But the world has woken up to the quantum revolution. We are seeing significant investment in quantum science in China, Singapore, the United States and Europe. IQC is unique in the field as it grew out of strengths at the University of Waterloo in computer science and engineering. The ecosystem that surrounds IQC is filled with innovation – from the fundamental science of Perimeter Institute to the startup engine of Communitech and the new venture capital opportunities with Quantum Valley Investments. With all of the elements in place, IQC has the ideal environment to excel in quantum science and innovation.

And with this Canada has the opportunity to be a world leader in the quantum revolution. IQC has created an environment where research and innovation blossom, where theory meets experiments, where experimentation meets commercialization, where investments support results. The next decade promises to be an exciting time in our history - a time when new technologies will provide unprecedented precision and power...all to the benefit of our society. The quantum revolution is here and IQC is leading the charge for Canada.

I look forward to continuing this journey of innovation along with the Government of Canada. Thank you for your continued support.

Sincerely,

Raymond Laflamme, Executive Director
Executive Summary

Harnessing the quantum world

2012 was a hallmark year for the Institute for Quantum Computing at the University of Waterloo. Not only did we celebrate our 10th anniversary, but we also celebrated the opening of our new headquarters - the Mike and Ophelia Lazaridis Quantum-Nano Centre. These celebrations brought thousands of people through our doors and raised awareness of the incredible science that's happening here in Waterloo.

Over IQC's ten-year history, we have made incredible strides in the advancement of quantum science. Our research team has grown to over 160 resident researchers, 160 visiting researchers from institutions around the globe and a over 100 graduate students. These world-class researchers are exploring quantum information from various perspectives - theoretical foundations (quantum error correction, algorithms, complexity theory, quantum information theory) to experimental approaches (quantum processing via spin, optics, nanoelectronics and more). And increasingly, we see the innovations sparked by these endeavours lead to quantum technologies - sensors and actuators for example. The work at IQC now spans the full innovation spectrum.

As these quantum technologies expand beyond the lab into the marketplace, we'll see them become a driving force in the 21st century economy. From biomedical applications to geological exploration, we will soon see quantum technologies that provide precision and accuracy as yet unseen by today's technology. By harnessing the quantum world, quantum technologies will provide opportunities for technological development that will greatly impact society for the better.

Academic programs at IQC prepare the next generation for the quantum world. Our collaborative graduate program brings together six university departments from three faculties across campus. IQC summer schools introduce quantum science to high school and undergraduate students. Additionally, our outreach programs bring the science out of the labs and into realm of the general public. We strive to make the quantum world more easily understood and accessible.

The next ten years will see incredible advancements in quantum science. IQC will grow to its full complement of 33 faculty members, 50 postdocs, and 165 graduate students. We will continue to expand our research from theory and experimentation to theory, experimentation and innovation - bringing quantum technologies to life. IQC will continue to foster meaningful collaborations with international researchers to ensure Canada remains a leader in this important area of research.

Researchers at IQC share a common goal - to build a general purpose quantum computer. Although many believe this goal to be years, if not decades, away, IQC works to bring that goal closer to reality. We will continue to reach into the atomic world to understand, control and harness the laws of quantum mechanics for the betterment of society. Quantum information science is a relatively young field. Yet the work of quantum researchers has advanced the field at an incredible speed.
This success is in no small part due to the generous support of Industry Canada and our many other supporters. It has empowered IQC to build a world-class institution that can attract leaders in the quantum world, bring the best and brightest students to Waterloo and provide an environment that fosters collaboration and innovation at the highest level.