**AGENDA**

**University of Waterloo**  
**SENATE**  
**Notice of Meeting**

**Date:** Monday, May 16, 2011  
**Time:** 4:00 p.m.  
**Place:** Needles Hall, Room 3001

### Consent Agenda

**Motion:** That Senate approve or receive for information by consent items 1-4 below.

1. Approval of the April 18, 2011 Minutes [enclosed]
   - **Page:** 1  
   - **Action:** Decision
2. Report of the President  
   a. Recognition and Commendation  
   b. Professional Master’s Degree Hoods  
   c. Roster of Graduands
   - **Page:** 17  
   - **Action:** Decision
   - **Page:** 18  
   - **Action:** Decision
3. Reports from the Faculties
   - **Page:** 2-16  
   - **Action:** Information
4. Other Business  
   a. Committees/Council/Board of Governors Appointments [to be distributed]
   b. Professional Master’s Degree Hoods
   c. Roster of Graduands

### Regular Agenda

5. Business Arising from the Minutes  
   a. Report from the Executive Committee
   - **Page:** 19  
   - **Action:** Decision
6. Reports from Councils  
   a. Graduate & Research  
   b. Undergraduate
   - **Page:** 20  
   - **Action:** Information
   - **Page:** 21-55  
   - **Action:** Decision/Information
7. Report of the President
   - **Action:** Oral
8. Q & A Period with the President
   - **Action:** Oral
   - **Action:** Oral
10. Report of the Vice-President, External Relations
    - **Page:** 56  
    - **Action:** Information
11. Report of the Vice-President, University Research
    - **Page:** 57-63  
    - **Action:** Decision
12. Report of the Dean of Applied Health Sciences
    - **Page:** 64  
    - **Action:** Information
13. Presentations  
   a. Capital Projects Update
   b. Centre for Teaching Excellence Update
   - **Page:** 65-66  
   - **Action:** Information
14. Other Business  
   a. Diploma Development Update
   - **Page:** Oral  
   - **Action:** Information

**EW:tad**  
**Erin Windibank**  
**May 9, 2011**  
**Associate University Secretary**
FOR INFORMATION

Recognition and Commendation

Psychology professor Mark Zanna (a Fellow of the Royal Society of Canada and a recipient of Waterloo’s awards for “excellence in research” and “excellence in graduate supervision”) recently received a $100,000 Killam Prize – one of five such prizes, called “Canada’s most distinguished annual awards,” given by the Canada Council for the Arts. The prizes are awarded annually, one each for career achievements in health sciences, engineering, humanities, natural sciences and social sciences. Zanna’s prize is for the social sciences; the other 2011 winners came from the Universities of Montréal, Toronto, Manitoba and British Columbia. The announcement was made at a ceremony in Vancouver, at UBC’s Beaty Biodiversity Museum. It is the second year in a row that one of the Killams has come to Waterloo: computer scientist Ming Li was a 2010 winner. According to a Canada Council news release, Zanna “is one of only a handful of academic social psychologists whose theories have been applied to major social issues such as racial prejudice. Described by his peers as one of the leading social psychologists in Canada, he is among the most cited social psychologists in the world.” The Killam Prizes were inaugurated in 1981 with a donation by Dorothy J. Killam in memory of her husband, Nova Scotia financier Izaak Walton Killam. The prizes were created “to honour eminent Canadian scholars and scientists actively engaged in research, whether in industry, government agencies or universities.” [April 20/11 Daily Bulletin]

In the recent William Lowell Putnam Mathematics Competition, held each December for mathematics students across North America and administered by the Mathematical Association of America, Waterloo’s team (Steven Karp, Boyu Li and Malcolm Sharpe) finished in fifth place. The winning team came from the California Institute of Technology, with MIT, Harvard, Berkeley and Waterloo following. The top Waterloo student was Matthew Harrison-Trainor who was amongst the top 40 of the 4,296 contestants. Waterloo’s next five students (in alphabetical order) were all amongst the top 100 contestants: Frank Ban, Steven Karp, Boyu Li, Yangxi Ou, Malcolm Sharpe. The competition was established in 1938 in memory of its namesake. Cash prizes for the top five teams in recent years ranged from $25,000 to $5,000. [April 13/11 Daily Bulletin; MAA]
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointment
ACKER, Stacey, Assistant Professor, Department of Kinesiology, July 1, 2011 to June 30, 2014.
B.Sc., Mechanical Engineering, Queen’s University, 2005; M.Sc, Mechanical Engineering, Queen’s University, 2006; Ph.D., Mechanical Engineering, Queen’s University, 2010. Post-doctoral Fellow, McMaster University, 2010 to present. Dr. Acker’s expertise in knee joint research complements the research in biomechanics within the department. She will be an excellent fit in terms of her technical skills and her expertise.

Adjunct Appointments

Undergraduate Instruction
PARKINSON, Robert, Lecturer, Department of Kinesiology, May 1, 2011 to August 31, 2011.

Graduate Instruction
KACZYNSKI, Andrew, Lecturer, Department of Health Studies and Gerontology, May 1, 2011 to August 31, 2011.

Graduate Supervision
MAI, Verna, Associate Professor, Department of Health Studies and Gerontology, January 3, 2011 to August 31, 2012.

SANTACRUZ, Karen, Associate Professor, Department of Health Studies and Gerontology, February 1, 2011 to June 30, 2012.

SERAFINI, Toni, Assistant Professor, Department of Health Studies and Gerontology, January 3, 2011 to August 31, 2012.

Graduate Supervision and Research
ZUZANEK, Jiri (Distinguished Professor Emeritus), Professor, Department of Recreation and Leisure Studies, January 1, 2011 to December 31, 2012.

B. ADMINISTRATIVE REAPPOINTMENTS

EAGLES, Paul, Interim Chair, Department of Recreation and Leisure Studies, July 1, 2011 to June 30, 2012.

HAVITZ, Mark, Chair, Department of Recreation and Leisure Studies, July 1, 2012 to June 30, 2016.
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointment

MARKLE, Kevin (B.Sc. University of North Carolina at Chapel Hill 1992, B.Ed. University of Toronto 1994, Ph.D. University of North Carolina at Chapel Hill 2010), Assistant Professor, School of Accounting and Finance, July 1, 2011 to June 30, 2014. Kevin joins the taxation area of the school. His research interests include international taxation, taxes and investment and tax planning, and corporate reputation. His teaching interests are in financial accounting and tax and business strategy. In 2010, Kevin received a grant from the International Tax Policy Forum for his research on “A Comparison of Tax-motivated Income Shifting in Territorial and Worldwide Countries.” Kevin will contribute to the expansion plans of the School of Accounting and Finance by strengthening teaching and research in our taxation area.

Adjunct Appointments

Instruction

CRAWFORD, Shelley, Lecturer, Department of Drama and Speech Communication, May 1, 2011 to August 31, 2011.

JAKUBOWICZ, Dan, Lecturer, School of Accounting and Finance, May 1, 2011 to August 31, 2011.

SEQUEIRA, Arun, Lecturer, School of Accounting and Finance, May 1, 2011 to August 31, 2011.

Miscellaneous (research, consultations, etc.)

LYONS, Andrew, Professor, Department of Anthropology, January 1, 2011 to December 31, 2016.

Adjunct Reappointments

Instruction

ABBOTT, Bill (Professor Emeritus), Associate Professor, Independent Studies, May 1, 2011 to August 31, 2011.

BALLARD, Sarah, Lecturer, Department of Drama and Speech Communication, May 1, 2011 to August 31, 2011.

BRANIFF, Michelle, Lecturer, School of Accounting and Finance, May 1, 2011 to August 31, 2011.

BRIGGS, Catherine, Assistant Professor, Department of History, May 1, 2011 to August 31, 2011.

DAGG, Anne (Professor Emerita), Associate Professor, Independent Studies, May 1, 2011 to August 31, 2011.

DATARDINA, Malik, Lecturer, School of Accounting and Finance, May 1, 2011 to August 31, 2011.

DAVIDSON, Tina, Lecturer, Women’s Studies, May 1, 2011 to August 31, 2011.
GINGRICH, Nadine, Lecturer, Department of English Language and Literature, May 1, 2011 to August 31, 2011.

GULEWITSCH, Victor, Lecturer, Department of Anthropology, May 1, 2011 to August 31, 2011.

HARTLING, Shannon, Assistant Professor, Department of Drama and Speech Communication, May 1, 2011 to August 31, 2011.

HARRIGAN, Patrick (Distinguished Professor Emeritus), Professor, Department of History, May 1, 2011 to August 31, 2011.

HERAUF, Herb, Associate Professor, School of Accounting and Finance, May 1, 2011 to August 31, 2011.

NARVESON, Jan (Professor Emeritus), Professor, Department of Political Science, January 1, 2011 to April 30, 2011.

NOLAN, Kathleen, Lecturer, Department of Political Science, May 1, 2011 to August 31, 2011.

PORTER, Robert (Professor Emeritus), Assistant Professor, Department of Classical Studies, March 8, 2011 to April 30, 2011.

REICHERT, Tetyana, Lecturer, Department of Germanic and Slavic Studies, May 1, 2011 to August 31, 2011.

REIDEL, Laura, Lecturer, Department of Political Science, May 1, 2011 to August 31, 2011.

SCHWEITZER, David, Lecturer, Department of History, May 1, 2011 to August 31, 2011.

SIEBEL-ACHENBACH, Sebastian, Lecturer, Department of History, May 1, 2011 to August 31, 2011.

THARMALINGAM, Pirapa, Lecturer, Department of Economics, May 1, 2011 to August 31, 2011.

Miscellaneous (research, consultations, etc.)

LYONS, Harriet (Professor Emerita), Professor, Department of Anthropology, January 1, 2011 to December 31, 2016.

Graduate Student to Part-Time Lecturer Appointments

BLANCHARD, Tommy, Department of Philosophy, May 1, 2011 to August 31, 2011.

CHRISTELIS, Angela, Department of Philosophy, May 1, 2011 to August 31, 2011.

HAYDON, Nathan, Department of Philosophy, May 1, 2011 to August 31, 2011.

HOLUKOFF, Kurt, Department of Philosophy, May 1, 2011 to August 31, 2011.

JORDAN, William, Department of Philosophy, May 1, 2011 to August 31, 2011.

MACDONALD, Kirsten, Department of Philosophy, May 1, 2011 to August 31, 2011.
MCEWAN, Michael, Department of Philosophy, May 1, 2011 to August 31, 2011.

MCKINNON, Rhys, Department of Philosophy, May 1, 2011 to August 31, 2011.

NELSON, Benjamin, Department of Philosophy, May 1, 2011 to August 31, 2011.

SIMARD SMITH, Paul, Department of Philosophy, May 1, 2011 to August 31, 2011.

WIER, Lindsay, Department of Philosophy, May 1, 2011 to August 31, 2011.

ZANOUZANI AZAD, Leila, Department of Philosophy, May 1, 2011 to August 31, 2011.

B. ADMINISTRATIVE APPOINTMENTS

BOYCHUK, Gerry, Acting Director, Master of Public Service, Department of Political Science, January 1, 2011 to June 30, 2011.

SILLATO, Maria del Carmen, Associate Chair, Undergraduate Studies, Department of Spanish and Latin American Studies, May 1, 2011 to June 30, 2011.

C. ADMINISTRATIVE LEAVE

JOHN, David, Professor, Department of Germanic & Slavic Studies, from September 1, 2011 to December 31, 2011, at full salary.

D. SABBATICAL LEAVES

For Approval by the Board of Governors

BUSCH, Lutz-Alexander, Associate Professor, Department of Economics, from September 1, 2011 to August 31, 2012, at 94.7% salary.

COATES, Ken, Professor, Department of History, from July 1, 2011 to June 30, 2012, at full salary.

HOLROYD, Carin, Assistant Professor, Department of Political Science, from July 1, 2011 to December 31, 2011, at full salary.

RYBCZYNSKI, Kathleen, Assistant Professor, Department of Economics, from November 1, 2011 to April 30, 2012, at 85% salary.

TIERNEY-HYNES, Rebecca, Assistant Professor, Department of English Language & Literature, from September 1, 2011 to February 29, 2012, at full salary.

Approved by the Board of Governors

BALLARD, Robert, Assistant Professor, Department of Drama and Speech Communication, from July 1, 2011 to December 31, 2011, at full salary.

BURBIDGE, John, Professor, Department of Economics, from July 1, 2011 to December 31, 2011, at full salary.

CLUETT, Cora, Associate Professor, Department of Fine Arts, from July 1, 2011 to December 31, 2011, at 85% salary.

CURTIS, Lori, Associate Professor, Department of Economics, from July 1, 2011 to December 31, 2011, at 85% salary.
**GIMPELEVICH, Zinaida**, Professor, Department of Germanic & Slavic Studies, from September 1, 2011 to August 31, 2012, at full salary.

**HUO, Jingjing**, Assistant Professor, Department of Political Science, from January 1, 2012 to June 30, 2012, at full salary.

**JOHN, David**, Professor, Department of Germanic and Slavic Studies, from January 1, 2012 to June 30, 2012, at full salary.

**MACDONALD, Michael**, Associate Professor, Department of English Language & Literature, from July 1, 2011 to June 30, 2012, at 85% salary.

**MARINO, Patricia**, Associate Professor, Department of Philosophy, from July 1, 2011 to December 31, 2011, at 85% salary.

**NILSEN, Elizabeth**, Assistant Professor, Department of Psychology, from July 1, 2011 to December 31, 2011, at full salary.

[Signature]

Ken S. Coates  
Dean, Faculty of Arts
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointment

BRZEZINSKI, Andrew, Assistant Professor, Department of Mechanical & Mechatronics Engineering, May 1, 2011 – June 30, 2014. PhD University of Illinois at Urbana-Champaign 2010; BASc University of Toronto 2004. Dr. Brzezinski’s field of expertise is in the characterization and modeling of the optical response of three-dimensional photonic crystals. He was hired for his specialization in nano-scale materials science, optics and condensed matter physics to complement current strengths in the areas of nano-fabrication and micro- and nano-mechanics in the department. His broad background in materials science will also open opportunities for wider collaboration with other nanotechnology researchers in engineering and science.

Visiting Appointments

ARROMDEE, Porametr, Scholar, Department of Chemical Engineering, May 1, 2011 – December 31, 2011.


FU, Jianyi, Scholar, Department of Civil & Environmental Engineering, April 1, 2011 – March 31, 2012.

GOODARZI, Avesta, Scholar, Department of Mechanical & Mechatronics Engineering, June 1, 2011 – May 31, 2012.


KARIMI, Gholamreza, Scholar, Department of Mechanical & Mechatronics Engineering, April 1, 2011 – August 20, 2011.

SEYYED KABOLI, Hesam, Scholar, Department of Civil & Environmental Engineering, August 20, 2011 – February 20, 2012.


XU, Zurun, Scholar, Department of Management Sciences, June 1, 2011 – December 31, 2011.

ZARRINGHALAM, Reza, Scholar, Department of Mechanical & Mechatronics Engineering, April 1, 2011 – March 31, 2013.


Visiting Reappointments

GAO, Gui, Scholar, Department of Civil & Environmental Engineering, March 1, 2011 – March 31, 2011.
OTA, Kaoru, Scholar, Department of Electrical & Computer Engineering, April 1, 2011 – March 31, 2012.

Adjunct Appointments

Instruction
ENRIGHT, Thomas, Assistant Professor, Department of Chemical Engineering, March 1, 2011 – February 28, 2013.

KLENKLER, Richard, Lecturer, Department of Electrical & Computer Engineering, May 1, 2011 – August 31, 2011.

LUAN, Tom, Lecturer, Department of Electrical & Computer Engineering, May 1, 2011 – August 31, 2011.

SURAL, Haldun, Associate Professor, Department of Management Sciences, May 1, 2011 – August 31, 2011.

Graduate Supervision and Research
BARTINIKAS, Ray, Professor, Department of Electrical & Computer Engineering, May 1, 2011 – April 30, 2014.

EL-FOULY, Tarek, Assistant Professor, Department of Electrical & Computer Engineering, April 1, 2010 – March 31, 2011.

YUAN, Xianxun (Arnold), Assistant Professor, Department of Civil & Environmental Engineering, March 1, 2011 – February 28, 2014.

Adjunct Reappointments

Instruction
ALLARKHIA, Minna, Lecturer, Department of Management Sciences, May 1, 2011 – August 31, 2011.

BLAKE, Clifford, Lecturer, Department of Management Science, May 1, 2011 – August 31, 2011.

GRIFFITHS-FULTON, Karl, Lecturer, Department of Systems Design Engineering, May 1, 2011 – August 31, 2011.

KEATS, Brian, Lecturer, Department of Electrical & Computer Engineering, May 1, 2011 – August 31, 2011.

VALE, Julie, Lecturer, Department of Electrical & Computer Engineering, May 1, 2011 – April 30, 2012.

Instruction and Graduate Supervision
CHAPLIN, Robin, Professor, Department of Civil & Environmental Engineering, March 1, 2011 – February 28, 2012.

Graduate Supervision
APLEVICH, Dwight, Professor, Department of Electrical & Computer Engineering, March 1, 2011 – February 28, 2014.
RAHNAMAYAN, Shahryar, Assistant Professor, Department of Systems Design Engineering, September 1, 2010 – August 31, 2013.

Graduate Supervision and Research
AZIMIFAR, Zoreh, Assistant Professor, Department of Systems Design Engineering, October 1, 2010 – September 30, 2012.

Graduate Student to Part-time Lecturer Appointments
ALMEHDAWE, Eman, Department of Management Sciences, May 1, 2011 – August 31, 2011.
BUTLER, Liam, Department of Civil & Environmental Engineering, May 1, 2011 – August 31, 2011.
FATHI, Ehsanollah, Department of Electrical & Computer Engineering, May 1, 2011 – August 31, 2011.
GHADDAR, Bissan, Department of Management Sciences, May 1, 2011 – August 31, 2011.
IBRAHIM, Michael, Department of Electrical & Computer Engineering, May 1, 2011 – August 31, 2011.
IVKOVIC, Igor, Department of Management Sciences, May 1, 2011 – August 31, 2011.
KE, Yi, Department of Management Sciences, May 1, 2011 – August 31, 2011.
NAOUM-SAWAYA, Joe, Department of Management Sciences, May 1, 2011 – August 31, 2011.
SANTILLAN, Edgar, Department of Electrical & Computer Engineering, May 1, 2011 – August 31, 2011.

B. SABBATICALS
For Approval by the Board of Governors
MAJEDI, Hamid, Associate Professor, Department of Electrical & Computer Engineering, January 1, 2012 – June 30, 2012, at 100% salary.

OMAR, Ramahi, Professor, Department of Electrical & Computer Engineering, September 1, 2011 – August 31, 2012, at 85% salary.

XU, Lei, Professor, Department of Civil & Environmental Engineering, November 1, 2011 – April 30, 2012, at 85% salary.

Adel Sedra
Dean, Faculty of Engineering
FOR INFORMATION

A. APPOINTMENTS

Adjunct Appointments – Instruction
HAIGHT, Murray, Associate Professor, School of Environment, Enterprise and Development, May 1, 2011 to August 31, 2011.

RAHAMAN, Khan, Lecturer, Department of Geography and Environmental Management, May 1, 2011 to August 31, 2011.

Cross Appointment
FRAYNE, Bruce, Assistant Professor, School of Environment, Enterprise and Development to the School of Planning, February 1, 2011 to December 31, 2014.

Staff to Faculty Appointments
FRIDDELL, Julie, Lecturer, Department of Geography and Environmental Management, May 1, 2011 to August 31, 2011.

GRANT, Anne, Lecturer, Faculty of Environment, May 1, 2011 to August 31, 2011.

Graduate Student to Part-time Lecturer Appointments
KING, Joshua, Department of Geography and Environmental Management, May 1, 2011 to August 31, 2011.

SILVER, Amber, Department of Geography and Environmental Management, May 1, 2011 to August 31, 2011.

B. ADMINISTRATIVE APPOINTMENTS

CRAIK, Neil, Director, School of Environment, Enterprise and Development, July 1, 2011 to June 30, 2015.

LARSON, Brendon, Associate Chair, Undergrad Studies, Department of Environment and Resource Studies, May 1, 2011 to June 30, 2014.

MITCHELL, Clare, Associate Chair, Undergrad Studies (Geography Program), Department of Geography and Environmental Management, April 1, 2011 to March 31, 2014.

ADMINISTRATIVE REAPPOINTMENTS
MCKENZIE, Ian, Associate Chair, Undergrad Studies (Aviation and Geomatics Programs), Department of Geography and Environmental Management, July 1, 2011 to June 30, 2014.
PARKER, Paul, Associate Director, WISE (Environment), January 1, 2011 to December 31, 2011.

C. SPECIAL LEAVE TO RETIREMENT (for approval by the Board of Governors)
ROBINSON, James, Associate Professor, Department of Environment and Resource Studies, July 1, 2011 to December 31, 2011.

M. Seasons
Dean
FOR INFORMATION

A. APPOINTMENTS

Tenured
For Approval by the Board of Governors

SCHONLAU, Matthias (MSc, 1993, Queen's University; PhD, 1997, University of Waterloo), Professor, Dept. of Statistics and Actuarial Science, July 1, 2011. Dr. Schonlau began his academic career as a postdoctoral fellow at the National Institute of Statistical Sciences and AT & T Labs Research in Florham Park, NJ. At the conclusion of his fellowship, he joined RAND Corporation in Santa Monica, California as an Associate Statistician. From October 2000 to August 2009 Matthias was Head of the RAND Statistical Consulting Service and located at the RAND offices in Pittsburgh. During 2009-2010, during a leave of absence from RAND, he worked in Germany at the Max Planck Institute and the German Institute for Economic Research in Berlin. He subsequently returned to RAND in Pittsburgh, where he is currently employed as a Statistician. Dr. Schonlau is widely-recognized as a leading researcher and practitioner in the modern practice of survey sampling, with particular expertise in web survey methods. He is the author of nearly 50 published articles in scientific journals. The appointment of Dr. Schonlau strengthens the link between Statistics & Actuarial Science and the International Tobacco Control Policy Evaluation Project spearheaded by Professor Geoffrey Fong.

Probationary-term Appointments

GIRELLI, Florian (BSc and MMath, 1997, Université de Toulouse; PhD, 2002, Université de Provence), Assistant Professor, Department of Applied Mathematics, December 1, 2011 – June 30, 2015. Dr Girelli was a postdoctoral fellow at the Perimeter Institute for Theoretical Physics from 2002-2005. He subsequently held a postdoctoral fellowship at the International School of Advanced Sciences in Trieste from 2006-2008 and is currently a postdoctoral fellow in the School of Physics, University of Sydney. Dr. Girelli's research interests are in quantum gravity, non-commutative geometry, emergent gravity and quantum gravity phenomenology. He will broaden the Mathematical Physics group in the Applied Mathematics department and help strengthen ties with the Perimeter Institute.

KATZ, Eric (BS, 1999, Ohio State University; PhD, 2004, Stanford University), Assistant Professor, Dept. of Combinatorics and Optimization, July 1, 2011 – June 30, 2014. Dr. Katz held the position of Assistant Research Professor at Duke University between 2004 and 2007, and subsequently became a postdoctoral fellow at the University of Texas at Austin. He is presently an NSF Institutes postdoctoral fellow, sponsored by the Mathematical Sciences Research Institute (with tenure at the University of Texas at Austin). Dr. Katz' research focuses on Tropical Geometry, an area on the border of Algebraic Geometry and Combinatorics. Since his PhD, he has established himself as one of the young leaders in this emerging sub-field of Algebraic Combinatorics. He is the author of more than ten articles in top international journals, and has given a large number of seminars and conference presentations. Dr. Katz' breadth, technical strength, curiosity and energy for both research and teaching will add crucial strength to the Algebraic Combinatorics and Geometry group, and will help establishing Waterloo as a leading centre in this area. This will stimulate new interest in us on the part of outside researchers and especially students

Definite-term Appointments

ADCOCK, James (BSc Hons, 1997; MSc, 2000, both from the University of Western Ontario), Lecturer, Department of Statistics and Actuarial Science, May 1, 2011 – April 29, 2013. Mr. Adcock
will teach six courses per year and participate in departmental activities as required.

**IONICIOIU, Radu** (MSc, 1991, University of Bucharest; PhD, 1999, University of Cambridge), Assistant Research Professor, Dept. of Applied Mathematics, March 28, 2011 – March 27, 2012.

**Visiting Appointments**
AYATI, Moosa, Research Associate, Dept. of Applied Mathematics, March 1, 2011 – August 31, 2011.


**Adjunct Appointments**
**Instructor**
ROCHE, Daniel, Lecturer, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.

**Research**

**Adjunct Reappointments**
**Instructor**
ASHBURNER, Michelle, Lecturer, Office of the Dean, May 1, 2011 – August 31, 2011.

ANDERSON, Terry, Lecturer, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.

DYCK, Arnie, Associate Professor, Office of the Dean, July 1, 2011 – August 31, 2012.

MURRAY, Dean, Lecturer, Office of the Dean, May 1, 2011 – April 30, 2013.

PETRICK, Mark, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.

ROH, Patrick, Lecturer, Office of the Dean, May 1, 2011 – April 30, 2013.

SPEZIALE, Sean, Dept. of Applied Mathematics, May 1, 2011 – August 31, 2011.

**Cross Appointment**
CHEN, Helen, Assistant Research Professor, Dept. of Health Studies and Gerontology to the David R. Cheriton School of Computer Science, March 1, 2011 – February 28, 2014.

**Graduate Student to Part-time Lecturer Appointments**
KHAN, Atif, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.

PRAMANIK, Sukanta, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.

RAHUL, Rahul, Dept. of Applied Mathematics, May 1, 2011 – August 31, 2011.

YOUNG, Maxwell, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.
Graduate Student to Part-time Lecturer Reappointments
IVKOVIC, Igor, David R. Cheriton School of Computer Science, May 1, 2011 – August 31, 2011.
SOONTIENS, Nancy, Dept. of Applied Mathematics, May 1, 2011 – August 31, 2011.
SUBICH, Christopher, Dept. of Applied Mathematics, May 1, 2011 – August 31, 2011.

Postdoctoral Fellow to Part-time Lecturer Appointments

B. ADMINISTRATIVE APPOINTMENTS
HARE, Kathryn, Associate Chair, Graduate, Department of Pure Mathematics, July 1, 2011 – June 30, 2012.
GUENIN, Beortrand, Associate Chair, Undergraduate Studies, Dept. of Combinatorics and Optimization, July 1, 2011 – June 30, 2012.
TUNÇEL, LEVENT, Associate Dean, Graduate Studies, Office of the Dean, July 1, 2011 – June 30, 2012.

C. RETIREMENT
PIDDUCK, Anne, Continuing Lecturer, David R. Cheriton School of Computer Science, effective June 30, 2011.

D. SABBATICALS
For Approval by the Board of Governors
GODFREY, Michael, Associate Professor, David R. Cheriton School of Computer Science, August 1, 2011 – July 31, 2012, with 85% salary.
KARSTEN, Martin, Associate Professor, David R. Cheriton School of Computer Science, September 1, 2011 – August 31, 2012, with 85% salary.
YI, Grace, Professor, Department of Statistics and Actuarial Science, September 1, 2011 – August 31, 2012, with 85% salary.

E. SPECIAL LEAVE
ILYAS, Ihab, Associate Professor, David R. Cheriton School of Computer Science, September 1, 2011 – August 31, 2012.

Ian P. Goulden, Dean
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Reappointments
LIU, Juewen, Assistant Professor, Department of Chemistry, July 1, 2012 to June 30, 2015. [B.S., University of Science and Technology of China (2000); Ph.D. University of Illinois at Urbana-Champaign (2005).]

MAHESHWARI, Vivek, Assistant Professor, Department of Chemistry, July 1, 2012 to June 30, 2015. [B.Tech., Indian Institute of Technology (1998); M.S., Wayne State University (2001); Ph.D., Virginia Tech (2007).]

Adjunct Appointments
Graduate Supervision
WASOWICZ, Marcin, Professor, Department of Chemistry, January 1, 2011 to August 31, 2014.

Graduate Supervision and Research
JACOBSON, Christian, Associate Professor, Department of Biology, July 1, 2010 to June 30, 2013.

Adjunct Reappointments
Graduate Supervision and Research
CATTET, Marc R.L., Assistant Professor, Department of Biology, June 1, 2011 to May 31, 2014.

SCHIRMER, Kristin, Professor, Department of Biology, June 1, 2011 to May 31, 2014.

SMITH, Matthew D., Associate Professor, Department of Biology, May 1, 2011 to April 30, 2014.

WINTER, Jennifer G., Assistant Professor, Department of Biology, May 1, 2011 to April 30, 2014.

Undergraduate Instruction
HO, Certina, Assistant Professor, School of Pharmacy, January 1, 2011 to December 31, 2011.

SULLIVAN, Michael, Assistant Professor, School of Pharmacy, May 1, 2011 to August 31, 2011.

Staff to Faculty Appointment
MISKOVIC, Dragana, Lecturer, Department of Biology, September 1, 2011 to December 31, 2011.

Graduate Student to Part-time Lecturer Appointments

Khan, Saad, Lecturer, Department of Biology, May 1, 2011 to August 31, 2011.

SHELDON, Katlyn, Lecturer, School of Pharmacy, May 1, 2011 to August 31, 2011

Graduate Student to Part-time Lecturer Appointment Date Change
JONES, Kyra, Lecturer, Department of Biology, from May 1, 2011 to August 31, 2011 to September 1, 2011 to December 31, 2011.
B. SPECIAL LEAVE TO RETIREMENT

For Approval by the Board of Governors

CHOU, Bernt Ralph, Associate Professor, School of Optometry, special leave to retirement, January 1, 2012 to June 30, 2012, 100% salary arrangements.

T.B. McMahon
Dean

TBM/lw
Memo

To: Erin Windibank
From: Ken Lavigne, Registrar
CC: Tracy Dietrich, Lynn Judge
Date: April 8, 2011
Re: May Senate Consent Agenda Item: Professional Master's Degree Hoods

As the number of professional master's degree programs grows, creating distinct degree hoods for each is a challenge. The associate deans, graduate studies/Graduate Operations Committee have approved the concept of a single hood design for each faculty for new professional master's degrees (use an existing design if one exists).

I move adoption of the scheme detailed in the bolded entries on the following chart:

<table>
<thead>
<tr>
<th>Graduate Degrees</th>
<th>Border</th>
<th>Soutache Braid</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Accounting</td>
<td>Small</td>
<td>Green</td>
<td>Gold trim looks more like yellow</td>
</tr>
<tr>
<td>Master of Actuarial Science</td>
<td>Small</td>
<td>Wine</td>
<td>Same as MQF</td>
</tr>
<tr>
<td>Master of Applied Environmental Studies</td>
<td>Small</td>
<td>Orange</td>
<td>For all Professional Master's ENV</td>
</tr>
<tr>
<td>Master of Applied Science</td>
<td>Small</td>
<td>Scarlet</td>
<td></td>
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FOR APPROVAL

Roster of Graduands
Since the roster of graduands will not be available until after the regular meeting of Senate in May and approval is required before the June meeting, the following motion is proposed:

Motion:
That Senate delegate such approval to its Executive Committee for its June 6, 2011 meeting.
The Senate Executive Committee met on May 2, 2011 and agreed to forward the following item to Senate. For further information, please contact the committee secretary at extension 32225.

FOR APPROVAL

Senate Timing

Motion: That Senate meetings be held Mondays at 3:30 p.m., effective September 2011.

Rationale: After considering several options and acknowledging that there is no way to meet the needs of all constituents, the committee unanimously agreed upon the timing above, noting that: meeting on Mondays is a longstanding tradition and ending around 5:30 p.m. allows more time for childcare responsibilities (members believed 6:00 p.m. to be a key dividing line). The committee also agreed to move presentations to the end of the agenda on a trial basis to allow senators with evening obligations to be present for key decisions.

Background: In response to concerns that holding meetings outside of ordinary working hours creates difficulty for senators/potential senators with young children, a motion was presented to the April 18, 2011 Senate proposing that Senate meetings be held on Fridays at 2:00 p.m. In discussion, senators noted that this time would create difficulties, particularly for students due to class schedules and co-op obligations, and referred the matter back to the Senate Executive Committee for further consideration.

/ew

Feridun Hamdullahpur
Chair
Senate Graduate & Research Council met on April 11, 2011 and agreed to forward the following items to Senate for information and approval.

Further details are available at: wwwadm.uwaterloo.ca/infosec/Committees/senate/sgrc.htm

FOR INFORMATION

RENEWAL OF CENTRES AND INSTITUTES

Centre for Computational Mathematics in Industry and Commerce (CCMIC)
Founded in 2005, CCMIC is directed by Justin Wan. Its mandate is to: develop, promote and manage undergraduate and graduate programs, promote and facilitate collaborative research activities, and facilitate development of research relationships with government and the private sector in the area of computational mathematics.

Highlights of the centre’s activities in the last five years include: domestic and international high school outreach (including visits to schools in Beijing, Shanghai, Hong Kong and Malaysia); development of undergraduate courses, options in a number of programs and a minor; development of a master’s program that started in fall 2008; more than 70 speakers, including domestic and international academics and industry representatives; participation in faculty research outreach committees; and facilitation of research initiatives with government agencies and private companies (e.g., Google, Lawson Health Research Institute, Canada Border Services Agency, and Primal Fusion).

In the next five years, the centre intends to work on: enhancements to the master’s program (integration of a co-op and thesis option), development of a doctoral program, continued promotion and facilitation of collaborative research opportunities, and organization of joint seminars with other academic units.

Suggesting that the centre develop an action plan to further enhance its relationships with industry and commerce, council approved its renewal for a five-year term (April 2011 – March 2016) on behalf of Senate (on the understanding that the centre’s governance provisions may become subject to review following the release of recommendations by the committee organized by the vice-president, university research).

CURRICULAR MODIFICATIONS
On behalf of Senate, council reviewed and approved curricular modifications for the Faculties of Engineering (business, entrepreneurship & technology and management sciences), Mathematics (Master of Mathematics for Teachers), and Science (biology).

SCHOLARSHIPS AND AWARDS
On behalf of Senate, council approved creation of the Rx&D Graduate Scholarship (trust) for graduate students in the School of Pharmacy and the Waterloo Environment Students Endowment Foundation (WESEF) Award (trust) in the Faculty of Environment.

/ew  George Dixon  Sue Horton
Vice-President, University Research  Associate Provost, Graduate Studies
Senate Undergraduate Council met on April 12, 2011 and agreed to forward the following items to Senate for approval and information, as indicated below [further details may be obtained at: www.secretariat.uwaterloo.ca/committees/senate/ugc.htm].

FOR APPROVAL

UAE CAMPUS: ACADEMIC CALENDAR DATES, 2011-2012

1. **Motion:** Council recommends approval of the UAE campus 2011-2012 academic calendar dates as detailed in attachment #1.

READING WEEK AND ASSIGNMENTS

Undergraduate students sometimes are being asked to hand in assignments during the February Reading Week. Council believes this is counterproductive to the purpose of the week which is to focus on study.

2. **Motion:** Council recommends that no undergraduate assignments be required to be submitted during reading week.

NEW ACADEMIC PROGRAMS

Faculty of Arts [effective September 1, 2011]
Germanic and Slavic Studies
Certificates in Croatian, Dutch, German, and Russian Languages

3. **Motion:** To approve the following new certificates:

   **Certificate in Croatian Language**
   Students must successfully complete two academic course units (four courses) with a cumulative average of 70% as follows:
   - CROAT 101, 102, 201, 202
   Students who have completed these courses may apply in writing to the undergraduate advisor of the Department of Germanic and Slavic Studies for the certificate. Please note that not all courses are offered on a yearly basis.

   **Certificate in Dutch Language**
   Students must successfully complete two academic course units (four courses) with a cumulative average of 70% as follows:
   - DUTCH 101, 102, 201, 202
   Students who have completed these courses may apply in writing to the undergraduate advisor of the Department of Germanic and Slavic Studies for the certificate. Please note that not all courses are offered on a yearly basis.

   **Certificate in German Language**
   Students must successfully complete two academic course units (four courses) in GER language, with the exclusion of courses taught in English, with cumulative average of 70%.

   Students who have completed these courses may apply in writing to the undergraduate advisor of the Department of Germanic and Slavic Studies for the certificate.

   Notes:
   1. This certificate is not open to students pursuing a German academic plan.
   2. Not all courses are offered on a yearly basis.
Certificate in Russian Language
Students must successfully complete two academic course units (four courses) in RUSS or REES language, with the exclusion of courses taught in English, with a cumulative average of 70%.

Students who have completed these courses may apply in writing to the undergraduate advisor of the Department of Germanic and Slavic Studies for the certificate. Please note that not all courses are offered on a yearly basis.

Rationale: These four new certificates are being created to provide recognition of proficiency in the language for students who are not in the department’s minor or major plans. This includes allowing students in non-degree or post-degree plans as well as students from other universities taking courses at the University of Waterloo on letter of permission/exchange to receive this recognition.

Faculty of Environment  [effective September 1, 2011]
Environment and Business
BES, Environment and Business (Regular)
4. Motion: To approve the following new regular degree plan:

Requirements (Note: calendar copy shows the new regular plan within the existing co-op plan’s text; new text = bold, deleted text = strikeout)

Year One
AFM 123 Accounting Information for Managers
AFM 131 Introduction to Business in North America
ECON 101 Introduction to Microeconomics
ECON 102 Introduction to Macroeconomics
ENBUS 102 Introduction to Environment and Business
ENVS 131 Communications for Environmental Professions
ENVS 178 Introduction to Environmental Research Methods
ENVS 195 Introduction to Environmental Studies
GEOG 101 Geography and Human Habitat
PHIL 224 Environmental Ethics

Year Two
ENBUS 202 Environmental Management Systems
ENBUS 203 Green Entrepreneurship
ENBUS 204 Principles of Industrial Ecology
ENVS 200 Field Ecology
ENVS 201 Introduction to Environmental and Planning Law
GEOG 203 Environment and Development in a Global Perspective
GEOG 281 Introduction to Geographic Information Systems (GIS)

One course* from the following themes:

Theme 1: Environmental Reporting and Auditing
ENBUS 307 Environmental Declarations
ENBUS 308 Advanced Environmental Auditing
ENBUS 309 Occupational Health and Safety

Theme 2: Environmental Entrepreneurship
ENBUS 311 Green Marketing
HRM 200 Basic Human Resources Management
INDEV 308 Introduction to Social Entrepreneurship

Theme 3: Corporate Sustainability
PHIL 215 Professional and Business Ethics
ENBUS 310 Strategic Management for Sustainable Business
ENBUS 312 Company Organization and Engagement

plus 2 electives for a total of five units

Year Three
AFM 231 Business Law
ECON 344 Marketing: Principles of Marketing and Consumer Economics
ENVS 220 Ecological Economics
or ECON 357 Environmental Economics
ENVS 278 Advanced Environmental Research Methods
ENBUS 302 Strategies for Environment and Business
ENBUS 306 Research Design
ERS 215 Environmental and Sustainability Assessment I

One course* from the following themes:

Theme 1: Environmental Reporting and Auditing
ENBUS 307 Environmental Declarations
ENBUS 308 Advanced Environmental Auditing
ENBUS 309 Occupational Health and Safety

Theme 2: Environmental Entrepreneurship
ENBUS 311 Green Marketing
HRM 200 Basic Human Resources Management
INDEV 308 Introduction to Social Entrepreneurship

Theme 3: Corporate Sustainability
PHIL 215 Professional and Business Ethics
ENBUS 310 Strategic Management for Sustainable Business
ENBUS 312 Company Organization and Engagement

plus 2 electives for a total of five units

Year Four
ECON 371 Business Finance 1
ENBUS 402A/B Environment and Business Project

Two courses from the following themes:

Theme 1: Environmental Reporting and Auditing
ENBUS 407 Corporate Sustainability Reporting
ENBUS 408 Best Practices in Regulations

Theme 2: Environmental Entrepreneurship
ENBUS 409 Environmental Enterprise Project
ENBUS 410 Engaging Stakeholders

Theme 3: Corporate Sustainability
ENBUS 408 Best Practices in Regulations
ENBUS 411 International Corporate Responsibility

plus 4 electives for a total of five units

*Students in the regular honours plan must complete at least one of ENBUS 307, 308, 309, 310, 311 or 312.

Note: The sequence of courses is subject to change based on course offerings, consultation with program advisor is recommended.
Notes:
1. Minimum Required Courses
   Total: 20 units. Environment and business: 16 units. Environment and business students may not take ERS 370 for credit towards the environment and business degree.

2. Course Load
   No more than five courses may be taken in a term without the approval of the director. Normally, approval for a sixth course will be considered only if the cumulative environment and business average is 78% or higher. A student may take up to one course during a co-op work term. An environment and business student is not allowed to fast-track.

3. Theme Courses Year 3 and Year 4
   Students must ensure they have acquired the pre-requisite courses for ENBUS 300 and 400 level theme courses. Students in the regular honours plan must take at least one of ENBUS 307, 308, 309, 310, 311 or 312.

4. Average Requirements
   Students must maintain an overall cumulative average of 65% and a cumulative average in the core courses of 70%. All required courses must be passed.

5. Honours Co-operative Plan
   Environment and Business Honours Environment and Business Co-op is a five work term plan in which four satisfactory work-term reports have to be written. The first work term occurs in the winter term of the second year. Co-op students in Faculty of Environment are required to complete a minimum of five Professional Development (PD) courses, including an introductory course (PD1) that must be taken prior to the first work term. At least two other of the Professional Development PD courses must cover non-technical skills. Other than the initial course, the courses are normally taken during co-op work terms. PD2 requires a work-term report to be written, which will be considered one of the four required work-term reports. Students are encouraged to take a Professional Development PD course each work term until the requirement is met. Students who fail to meet these requirements will not be permitted to continue in co-op.

   The Environment and Business Honours Co-op plan has the same academic requirements as the Environment and Business Honours plan with the exception that honours students must take at least one of ENBUS 307, 308, 309, 310, 311 or 312 in their choice of theme electives. Students will be permitted to transfer from the honours co-op plan to the honours plan if academic requirements have been met up to the time of transfer.

6. Transfer Students
   Transfer applicants with post-secondary background may be considered for admission to either of the BES (Environment and Business) programs plans. Interested students will be considered for admission based on space available and university academic performance. Transfer into the honours co-op plan may also be based on an interview and work experience related to environment and business.

   In order to meet the appropriate degree requirements for, specifically the proper sequence of courses and co-op terms (if applicable), transfer applicants will normally be required to begin environment and business studies at the first year (1A) level. Applicants should be aware that transfer credit may not be granted for courses completed in other University of Waterloo programs or at other universities/colleges. Transfer students will only be admitted in the fall term.

   Transfer students enrolled will be required to complete a minimum of 50% of their degree requirements in the Faculty of Environment at the University of Waterloo.

7. Restriction on Number of First-Year Courses
   A student must have at least 13.5 units above the 100 level.
Rationale: The faculty proposes creation of a regular environment and business plan to provide flexibility to students who enter the plan from Ontario secondary schools and, in particular, to students in the joint international 2+2 program who transfer to Waterloo for studies starting in their 3A term. The regular plan further supports retention of all students, domestic and international alike, who wish to remain in the environment and business program but who cannot or do not wish to continue in the co-op sequence.

Faculty of Science [effective September 1, 2012]

Biology

Environmental Biology, and Molecular Genetics Specializations

5. Motion: To approve the following new specializations:

Environmental Biology Specialization

Year One
- BIOL 110, 120, 130, 130L, 150, 165
- CHEM 120/120L
- CHEM 123/123L
- One of MATH 114, MATH 127 or PHYS 111
- Two electives (1.0 unit)*

*Note: It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English department.

Year Two
- BIOL 239, 240, 240L, 273
- BIOL 211 or BIOL 241
- CHEM 237/237L
- CHEM 266/266L
- STAT 202
- Three electives (1.5 units)

Year Three
- BIOL 308, 350, 351, 354, 358, 359
- One biology elective (0.5 unit) from the list below
- One science elective (0.5 unit)**
- Two electives (1.0 unit)

**Note: Science elective courses include BIOL, CHEM, EARTH, PHYS, SCI

Year Four
- BIOL 457
- Four biology electives (2.0 units) from the list below
- One 300- or 400-level biology course (0.5 unit)
- Four electives (2.0 units)

Biology electives for the Environmental Specialization - Must take five courses (2.5 units) of the following biology courses, four (2.0 units) must be at the 400-level: BIOL 321, 323, 325, 335L, 346, 361, 364, 370, 371, 383, 412, 426, 439, 447, 450, 452, 455, 456, 462, 466, 467, 470, 479, 480, 488, 491A, 491B, 492, 498A & 498B, 499.

Honours Biology, Molecular Genetics Specialization

Year One
- BIOL 110, 120, 130, 130L, 150, 165
- CHEM 120/120L
- CHEM 123/123L
One of MATH 114, MATH 127 or PHYS 111
Two electives (1.0 units)*

*Note: It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English department.

Year Two
BIOL 239, 240, 240L, 241, 273
CHEM 237/237L
CHEM 266/266L
STAT 202
Three electives (1.5 units)

Year Three
BIOL 308, 309, 331, 335L, 359, 365 or 366
Two biology electives (1.0 unit) from the lists below
Two electives (1.0 unit)

Year Four
Six biology electives (3.0 units) from the lists below
Four electives (2.0 units)

Must take four courses (2.0 units) of the following biology elective courses for Molecular Genetics Specialization: BIOL 428, 431, 434, 441, 442, 479, 484

Must take four courses (2.0 units) of the following biology elective courses for Molecular Genetics specialization, one (0.5 unit) of which must be at the 400-level: BIOL 302, 321, 342, 349, 376, 380, 483, 499

Rationale: The Department of Biology reviewed its honours undergraduate curriculum in 2010. A working group of biology and biomedical sciences academic advisors recommended the proposed new specializations. The honours biology program previously had five specializations (animal physiology, plant biology, microbiology, molecular biology and biotechnology, and non-specialized). These have been revised (see motion #4 in this report) and two new specializations created to reflect the department’s course strengths and student interest. The intended outcome of these changes is to update and broaden the department’s curriculum so that it more adequately reflects the range of expertise of biology faculty. As with those specializations already in place, these are offered for both regular and co-operative academic plans.

CHANGES TO ACADEMIC PROGRAMS  [effective September 1, 2012]

►Faculty of Science
Biology
Honours Biology

6. Motion: To approve changes to honours biology as provided below: (Note: see attachment #2 for revised calendar copy.)

Honours Biology (Co-operative)

- Add requirement for cumulative science average of 60%
- Minor change in number of units required
- Revise 300- and 400-level requirements
- Revise rule with respect to unsuccessful attempts of any required course
- Delete requirement for CHEM 228/228L
- Clarifications made with respect to timing suggestions for co-op students

Common requirements for Honours Biology

- Add requirement for cumulative science average of 60%
• Revise 300- and 400-level requirements
• Add rule with respect to unsuccessful attempts of any required course
• Add rule re: maximum number of SCI-labelled courses which can be applied to the degrees

_Biology Specializations_
- Add new specializations (contingent upon approval of motion #3 above)
- Revise names of two existing specializations

_Honours Biology (Non Specialized)_
- Revise BIOL requirements
- Add MATH or PHYS requirement
- Remove CS or CHEM requirement
- Revise number of electives; add SCI electives

_Honours Biology, Animal Physiology Biology Specialization_
- Revise BIOL requirements; clarify BIOL electives
- Add MATH or PHYS requirement
- Remove CS or CHEM requirement
- Remove CHEM 267 requirement
- Revise number of electives; add science elective

_Honours Biology, Molecular Biology and Biotechnology; and Honours Biology, Microbiology Specializations_
- Revise BIOL requirements; clarify BIOL electives
- Add MATH or PHYS requirement
- Remove CS or CHEM requirement
- Remove CHEM 267 requirement
- Revise number of electives

_Honours Biology, Plant Biology Specialization_
- Revise BIOL requirements; clarify BIOL electives
- Add MATH or PHYS requirement
- Remove CS or CHEM requirement
- Remove chemistry elective
- Revise number of electives; add science electives

_Rationale:_ The Department of Biology reviewed its honours undergraduate curriculum in 2010. A working group of biology and biomedical sciences academic advisors recommended the proposed changes which include the addition of a numeracy component to the undergraduate curriculum to prepare better students for future biology courses. It has been determined that this will be satisfied through a calculus, algebra or physics course. BIOL 165, The Diversity of Life, provides an overview of this subject; students will take this course in first year as part of their introduction to the breadth of biology. “CS 200 or CS 115 or CHEM 140L” have been removed as required courses for the honours biology plan because basic computing skills are commonplace and are covered in the core biology courses. CHEM 228/228L was originally included in the honours biology co-op plan to expose biology undergraduate students to analytical chemistry. It has been removed because the job market for biology students does not require background in analytical chemistry. The proposed changes to requirements will bridge the gaps in the current plans to cover the breadth of biology recommended during the undergraduate review process. The faculties of mathematics and arts have approved of the inclusion of their courses in these plan changes.
FOR INFORMATION

Academic Program Reviews

English Language Institute (Renison University College) – See attachment #3.

International Studies Option – See attachment #4.

Mechatronics Engineering – See attachment #5.

Curricular modifications

On behalf of Senate, council approved changes to academic plans, new courses, course changes and course inactivations for the faculties of: applied health sciences (health studies and gerontology, recreation and leisure studies, term dean’s honours list); arts (anthropology, classical studies, history, interdisciplinary social science, religious studies, sociology and legal studies, women’s studies); engineering (complementary studies electives, electrical and computer engineering, nanotechnology engineering, systems design engineering); environment (English language proficiency requirement, environment and business, environment and resource studies, geography, geography and aviation, planning); and science (biology, chemistry).

/kjj
April 13, 2011

Geoff McBoyle
Associate Vice-President, Academic
Memo

To: Senate Undergraduate Council  
From: Ken Lavigne, Registrar  
CC: Carmen Roecker, Wendy Mertz  
Date: April 7, 2011  
Re: Calendar Dates, 2011-2012: UAE Campus

I attach proposed 2011-2012 calendar dates for the UAE campus. They are, for the most part, in accordance with “GUIDELINES FOR DETERMINING ACADEMIC CALENDAR DATES, UAE CAMPUS”. The only deviation is the start of lectures in Fall term. Because of the timing of Eid Al Fitr, classes cannot begin on September 1.

Motion:

That Council recommend Senate approval of the 2011-2012 calendar dates for the UAE campus as presented.
### Academic Calendar Dates: UAE Campus, 2011-2012

The following symbols and abbreviations are used throughout this table:

- **Days of the week:** (M) Monday, (T) Tuesday, (W) Wednesday, (Th) Thursday, (F) Friday, (S) Saturday, (U) Sunday
- **N/A** – Not Applicable

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*Page 2*
GUIDELINES FOR DETERMINING ACADEMIC CALENDAR DATES
UAE CAMPUS

The following principles and guidelines have been established by Senate to guide the determination of the dates for the academic year in the UAE.

- That the practice of setting dates for each academic year be an annual exercise. Dates for the UAE campus should synchronize as closely as possible with the Waterloo campus.

- That there be an adequate number of examination days to support the required assessment.

- That there be no fewer than 2 study days (excluding Friday, Saturday and holidays) between the end of classes and the beginning of examinations and the university will attempt to schedule a maximum of 5 study days when possible (including Friday, Saturday and holidays)

- That there be no fewer than 60 teaching days in a term. A clear rationale for fewer than 60 teaching days must be communicated to Senate at the time calendar dates are approved.

- That in the Fall Term no examinations be scheduled beyond December 22

- That Fall Term classes begin on September 1.

- That the start date for Winter Term be January 3 when that date falls on a Sunday, Monday or Tuesday. Otherwise the start date is the first Sunday following January 3. In the event of Sunday, January 3 being a holiday the term would begin January 4.

- That the 5-day Winter Reading Week occurs in all Faculties and must begin on the third Sunday of February

- The start date for Spring Term is normally May 1, 2 or 3 when these dates fall on a Sunday, Monday or Tuesday. Otherwise the start date is the first Sunday following May 3

- Fridays and Saturdays and holidays are excluded. In calculating examination days, Fridays and Saturdays which fall within the period are excluded.

- Grades due dates are normally scheduled seven days from the date of the final examination. Grades for courses without a scheduled final examination are normally due 14 days after the start of examinations.

Prepared by:
K.A. Lavigne, Registrar
February 2009
Changes to Honours Biology Plans

Re: motion #5 on page 6 of Senate Undergraduate Council’s May 16, 2011 report. (Note: new text = bold, deleted text = strikeout.)

Honours Biology (Co-operative)

Continuation in Honours Co-operative Biology requires a cumulative overall average of 60%, and a cumulative average of 60% in all biology courses and cumulative science average of 60%.

In order to graduate in the Honours Co-operative Biology academic plan, the following requirements must also be met:

1. Successful completion of 21.5 units, except for the Animal Biology Physiology Specialization which requires 22.0 units.
2. Thirteen courses (6.5 units) from among 300- and 400-level biology courses of which five courses (2.5 units) must be at the 400-level.
3. No more than two unsuccessful attempts at any core required course is normally permitted (see Faculty of Science policy on repeating courses).
4. Four satisfactory work term reports.
5. No more than 3.0 “SCI”-labelled units may be applied to the academic plan.
6. Completion of the required courses in the specializations as described for the regular academic plan in honours biology. Co-op students must take CHEM 228/228L in term 2B.
7. Completion of the English Language Proficiency Examination (ELPE).

The following changes in timing will allow co-op students to fit required courses into their on-campus terms.

1. All Specializations. Some students may wish to reduce the workload in 2B by taking CHEM 237/237L in 3B.
2. Animal Biology, Physiology, Microbiology, and Molecular Biology and Biotechnology Specializations. Some students may wish to reduce their workload in 2A by taking CS 115 or CS 200 in 2B or CHEM 140L in 3A. Take CHEM 267 in 3A.
3. Plant Biology Specialization. Should take BIOL 323 in 3B.
4. Animal Biology, Biotechnology, Microbiology, Molecular Genetics Specializations. Specialization and Molecular Biology and Biotechnology Specialization should take BIOL 241 in 2B or in 3A.

Common requirements for Honours Biology:

Continuation in honours biology requires a cumulative overall average of 60%, and a cumulative average of 60% in all biology courses and cumulative science average of 60%.

In order to graduate in the Honours Biology academic plan, the following requirements must be met:

1. Successful completion of 21.5 units, except for the Animal Biology Physiology Specialization which requires 22.0 units.
2. Thirteen courses (6.5 units) from among 300- and 400-level biology courses of which five courses (2.5 units) must be at the 400-level.
3. No more than two unsuccessful attempts at any required course is normally permitted (see Faculty of Science policy on repeating courses).
4. No more than 3.0 “SCI”-labelled units may be applied to these academic plans.
5. Completion of the required courses, as described below.
6. Completion of the English Language Proficiency Examination (ELPE).
Biology Specializations

All honours biology students, regular and co-op, take the same courses in year one. Beginning in year two, students may pursue one of six specializations or remain unspecialized. A recommended academic plan of study is outlined for each specialization, although students may take the required courses in a different order.

Students may choose to specialize in:

- Animal Biology
- Physiology
- Molecular Biology and Biotechnology
- Environmental Biology
- Microbiology
- Molecular Genetics
- Plant Biology

Honours Biology (Non Specialized)

Year One

BIOL 110, 120, 130, 130L, 139, 140, 140L, 150, 165
CHEM 120/120L
CHEM 123/123L
One of MATH 114, MATH 127 or PHYS 111
Two Three electives (1.0 +5 unit)*

*Note: It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English department.

Students needing CS 100 as a prerequisite for CS 200 should take it in Year One.

Year Two

BIOL 239, 240, 240L, 250, 273
CHEM 237/237L
CHEM 266/266L
STAT 202
CS 115 or CS 200 or CHEM 140L
One 200-Level Biology Course (0.5 units)
One 300-Level Biology Course (0.5 units)
One science elective (0.5 unit)**
Three electives (1.5 units)

**Note: Science elective courses include BIOL, CHEM, EARTH, PHYS, SCI
(Note: CHEM 228 and 228L are required for Honours Co-operative Biology plans; and are available Spring term only.)

Year Three

BIOL 308, 359
Five 300- or 400-level biology courses (2.5 units)
One science elective (0.5 unit)**
Two electives (1.0 unit)

Years Three and Year Four

Six of 300- or 400-level biology courses (3.05-5 units), at least five courses (2.5 units) of which must be at the 400-level.
Four Nine electives (2.04-5 units)

Note: Students contemplating a "Minor in Chemistry" must take honours-level chemistry courses. CHEM 266/266L, 267/267L, and 228/228L will not count towards the minor; the appropriate acceptable required courses are CHEM 264, 265/265L, and 220/220L respectively. Students are urged to check their plans for this minor with the undergraduate advisor in chemistry.
Honours Biology, Animal Physiology Biology Specialization

Year One
BIOL 110, 120, 130, 130L, 139, 140, 140L, 150, 165
CHEM 120/120L
CHEM 123/123L
One of MATH 114, MATH 127 or PHYS 111
Two Three electives (1.0 ±5 unit)*

*Note: It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English department.

Students needing CS 100 as a prerequisite for CS 200 should take it in Year One.

Year Two
BIOL 211, 239, 240, 240L, 273, 273L, 250
CHEM 237/237L
CHEM 266/266L
STAT 202
CS 115 or CS 200 or CHEM 140L
BIOL 241, 273, 273L, 302
CHEM 267
Three One electives (1.5 ±5 units)

(Note: CHEM 228 and 228L are required for Honours Co-operative Biology plans; are available Spring term only)

Year Three
BIOL 302, 303, 308, 331, 359, 370, 373, 373L
Two biology electives (1.0 unit) from the list below (1.0 unit)
One science elective (0.5 unit)**
Two Three other electives (1.0 ±5 unit)

**Note: Science elective courses include BIOL, CHEM, EARTH, PHYS, SCI

Year Four
BIOL 303, 370, 371, 374L, 441, 477L
One Two biology electives (0.5 unit) from the list below (±0 unit)
Four Five other electives (2.0 ±5 units)

Biology electives for the Animal Biology Physiology Specialization - must take three (1.5 units) of the following biology courses: BIOL 403, 412, 434, 438, 450, 473, 476, 473, 479, 483, 486, 499

Note: Must have a minimum of five courses (2.5 units) of biology at the 400-level.

Honours Biology, Molecular Biology and Biotechnology Specialization

Year One
BIOL 110, 120, 130, 130L, 139, 140, 140L, 150, 165
CHEM 120/120L
CHEM 123/123L
One of MATH 114, MATH 127 or PHYS 111
Two Three electives (1.0 ±5 unit)*

*Note: It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English department.

Students needing CS 100 as a prerequisite for CS 200 should take it in Year One.

Year Two
BIOL 239, 240, 240L, 241, 250, 273
CHEM 237/237L
Year One

ATH 114, MATH 127 or PHYS 111

Year Two

ATH 211, 212, 213, 215, 240, 241, 273, 250

Year Three

ATH 308, 309, 331, 342, 345, 346, 348L, 359, 442

Year Four

ATH 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411

Honours Biology, Microbiology Specialization

Year One

ATH 110, 120, 130, 130L, 139, 140, 140L, 150, 165

Year Two

ATH 239, 240, 240L, 241, 273, 250

Year Three

ATH 308, 309, 331, 342, 345, 346, 348L, 359, 442

Year Four

ATH 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411
Year Four
Biol 431, 442, 444, 447, 448
Four biology electives (2.0 units) from the list below (0.5 units)
Four other electives (2.0 units)

Biology electives for the Microbiology Specialization: Must take five courses (2.5 units) of the following biology elective courses, three (1.5 units) must be at 400-level: Biol 331, 342, 345, 366, 432, 335L, 441, 442, 443, 444, 447, 449, 466, 467, 474, 475, 499

Honours Biology, Plant Biology Specialization

Year One
Biol 110, 120, 130, 130L, 139, 149, 149b, 150, 165
Chem 120/120L
Chem 123/123L
One of Math 114, Math 127 or Phys 111
Two elective courses (1.0 units)*

*Note: It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English department.

Students needing CS 100 as a prerequisite for CS 200 should take it in Year One.

Year Two
Biol 239, 240, 240L, 250, 273
Chem 237/237L
Chem 266/266L
Stat 202
CS 115 or CS 200 or Chem 140L
Biol 208, 265, 323
One science elective (0.5 unit)**
Three other elective courses (1.5 units)

**Note: Science elective courses include Biol, Chem, Earth, Phys, Sci
(Note: Chem 228 and 228L are required for Honours Co-operative Biology plans, and are available Spring term only.)

Year Three
Biol 308, 321, 323, 325, 331, 359, 361
One biology/Chemistry elective (0.5 unit) from the list below (0.5 units)
One 300- or 400-level biology course (0.5 units)
One science elective (0.5 units)**
Two other electives (1.0 units)

Year Four
Biol 428
Four biology electives (2.0 units) from the list below (2.5 units)
Two 300- or 400-level biology courses (1.0 unit)
Four other electives (2.0 units)

Biology/Chemistry electives for the Plant Biology Specialization - Must take five courses (2.5 units) of the following biology elective courses: Biol 325, 331, 335L, 342, 354, 366, 384, 426, 428, 433, 439, 467, 456, 462, 457, 499
Chem 333

Note: Must have a minimum of five courses (2.5 units) of biology at 400-level. Biol 361 is highly recommended.
ENGLISH LANGUAGE INSTITUTE (RENISON UNIVERSITY COLLEGE)

Review Process

This was the first review of the programs offered by the English Language Institute (ELI) at Renison University College. These programs are the non-credit programs: the English for Success (EFS) program and the English for Academic Success (EFAS) program; and the credit courses and programs: the various English as a Second Language (ESL) credit courses and the Applied Language Studies (APPLS) Option and Diploma. The non-credit intensive English programs of ELI were fully accredited by the Canadian Languages Council (CLC), now called Languages Canada in 2006, and ELI was recommended for the Lyn Howes’ Award “for innovation and/or commitment in the delivery of quality programs and/or services for the Canadian language industry.” In addition, the 2006 accreditation report made seven recommendations related to: procedures for student concerns; training for monitors; increasing library holdings; increasing resource materials for teachers; strengthening its marketing and recruitment efforts; being more visible on the web; and increasing physical space.” All seven recommendations were addressed. The next accreditation site visit was in 2010 shortly before the program reviewer’s site visit.

Students were consulted for their input to the self-study. EFAS, ESL and APPLS students were surveyed and APPLS students discussed the review at an end-of-term gathering.

The self study for the review was completed July 23, 2010; the site visit was conducted October 28 and 29, 2010; the review team report was received December 6, 2010; and the response from ELI and the Principal of Renison University College was submitted March 14, 2011.

Characteristics of the Program

Historical Overview

Renison University College started offering non-credit and credit ESL courses in 1973 to accommodate a burgeoning population of international students at the University of Waterloo (UW).

In 1979, ENGL 129R (Introduction to Written English) came into existence, and it has been offered regularly each year since.

In 1980, Renison explored the possibility of developing its growing ESL expertise into a summer intensive program for international students. Budgetary constraints, staffing issues and the development of academic programs meant that ESL was not developed into a program until the 1990s, even though Renison continued to offer sections of ENGL 129R every term.

In 1994, the English Language Institute (ELI) was established and has been growing in size ever since. In the same year EFS, a non-credit intensive summer four-week program, started offering international visitors 25 hours a week of classes emphasizing conversational English in a residential setting.

The EFAS program was first offered seven years later, in 2001. Today EFAS is a comprehensive structured program accredited by Languages Canada with four proficiency levels where students have to complete one level each term. Each level of EFAS offers students three separate courses each with its own learning objectives: Academic Skills, Oral Skills and Writing Skills. Successful completion of the highest class, level 400, with an average of 80% or better is now recognized by UW as satisfying its
entrance English Language Requirement. Wilfrid Laurier University also accepts a pass in level 400 of EFAS in place of standardized tests such as TOEFL and IELTS.

In the last decade ELI has also offered EFS and EFAS courses regularly, at Renison and abroad, to international students from many universities in China, Japan and Mexico.

In 2004, ELI divided the program offerings into two groups - credit and non-credit courses. EFS and EFAS were the non-credit offerings. Credit courses are the ESL undergraduate and graduate courses that have been approved by Senate together with Applied Language Studies (APPLS), which started accepting students into its Option and Diploma in fall 2008.

Also in 2004 ELI became involved with the Faculty of Science 2+2 program in China by sending examiners to China to interview and examine candidates. Since then, the Faculties of Environment and Arts have followed suit.

UW has been offering conditional admission to fully-funded graduate students from Saudi Arabia since 2004. These students are admitted to EFAS and have one year to complete level 300 satisfactorily as a condition of their admission to graduate studies. This arrangement has worked well.

The ELI is self-funding. Its budget is developed on a cost-recovery basis, and tuition in EFS and EFAS is increased as necessary to balance increases in costs and salaries.

ESL credit courses pay for themselves. Renison’s agreement with UW for the offering of ESL credit courses is such that it is always possible to add sections to ESL courses to meet the demand in any given term. Renison invoices UW for the stipends it pays its sessional instructors; similarly various Engineering Departments reimburse Renison for the costs of the annual fall offering of ENGL 612R required of MEng students.

APPLS courses and the course, ENGL 129R, come under the funding formula in place between UW and the Federated University and Affiliated University Colleges (FUAC).

Special projects are packaged to include administrative costs, so that they pay the salary of the Special Projects Manager and support other ELI initiatives.

Renison has 12 classrooms that have to be shared with other academic units. With seven EFAS classes running from 9:30am to 4:00pm in all three academic terms, space is tight. Indeed UW courses, including ESL credit courses, have first priority. Because of the demand it has been agreed, earlier this year, that UW will assist, where possible, in finding suitable classrooms on campus when needed for EFAS courses.

Today ELI has three challenges. It needs to increase its profile on campus. It needs to inform faculty members that ESL support is available to students. Secondly, because of its growth ELI needs more full-time instructors. At the moment 67% of EFAS courses are taught by instructors on term contracts. Lastly, the APPLS Option needs to attract more students, which would eventually allow the hiring of more faculty members.

Program Objectives

In 2006 Renison’s Academic Council approved the mission statement of ELI, which specifies how the ELI is intended to support the aims of Renison in general:
To help our students use English more proficiently, we are committed to developing curriculum informed by current research and delivering meaningful instruction in a supportive environment.

In our English for Success and English for Academic Success programs, our goals are to

- provide student-centered classes led by dedicated, professionally trained and certified ESL instructors
- encourage students to collaborate with others inside and outside the classroom to increase their socio-linguistic flexibility
- keep classes small with tasks and activities ranging from controlled to free practice to meet the collective and individual needs of students
- organize course materials in clearly defined levels, allowing students to measure their progress against recognized standards

Overall, the English Language Institute strives to

- offer academic English language instruction to provide students with timely language support
- create professional development opportunities for language teaching professionals both on and off campus
- promote best teaching practices through active research.

Distinctiveness/Benchmarking

ELI has national recognition on the strength of its non-credit programs, EFS and EFAS, which comes from accreditation from Languages Canada.

The APPLS Option, the only academic plan affiliated with ELI, is unique in Canada because it pulls together language experts from a number of collaborating Departments – not just traditional language Departments but Departments such as Psychology, Sociology, Philosophy, and Drama and Speech Communication.

Academic Plans Offered

Non-credit programs:

- EFS
- EFAS

Credit courses:


Applied Languages Studies (APPLS) Option and Diploma

The Option requires 10 courses in APPLS Core, Approved Language and Approved Applied Language Studies Courses including:
• three APPLS Core Courses from a list of three
• four Approved Language Courses from a list of 100 courses from 15 different language Departments and two other non-language Departments
• three Approved Applied Language Studies Courses from a list of 28 courses from 13 disciplines.

Students

Student numbers have grown rapidly in the ELI from a total of about 100 in 2001-02 to over 1,200 in 2009-10.

In fall 2005, 54 students registered in EFAS. This has risen steadily since then to approximately 90 to 100 students per term. For the last two years the average number of students per term was 92. Sixty-five percent of these students came from three countries: the People’s Republic of China (34.8%), Saudi Arabia (27.2%) and Korea (13.0%).

Of the students enrolled in EFAS levels 100, 200, 300 and 400 since fall 2008, 52.1%, 74.6%, 45.4% and 35.7% respectively have achieved the grade of 75% or better.

The EFS was the first intensive ESL program of ELI and some of its growth came from agreements with international schools with Anglican connections (Chung Chi College in Hong Kong and Poole Gakuin in Japan). Since 2005 the average enrolment in EFS each summer was 107 students of which 82.3% came from five countries: Japan (25.2%), Saudi Arabia (16.8%), People’s Republic of China (15.9%), Hong Kong (13.1%) and Korea (11.2%).

ESL 101R and 102R were offered for the first time in fall 2004 and the numbers have grown steadily assisted by the fact that four Faculties (Applied Health Sciences, Arts, Mathematics and Science) accept that, if students achieve a certain minimum grade in ESL 102R, this satisfies the undergraduate English Language Proficiency Requirement that is required of all UW undergraduates.

The three most offered undergraduate credit courses, ESL 101R, 102R and 129R, have averaged enrolments of 24, 45 and 25 respectively, each term they have been offered. Average enrolment in the graduate courses per term is higher - 39 in ESL 601R and 26 in ESL 602R.

For the winter term 2010, 63% of ESL undergraduates came from the People’s Republic of China. For the same term, 31% were Mathematics majors, 19% were in Engineering and 13% studied Economics.

Applied English Grammar has been offered as a course at Renison since the mid-70s, and related courses in English language teaching began to be added in 2004 in response to student demand. By fall 2008, the course offerings had been constituted as the Applied Language Studies Option. Two students graduated with the Option in June 2009 and another five in June 2010. Currently there are eight students officially registered in the Option. The vast majority of students taking APPLS courses (95%) are students in third and fourth years, half of whom are students in French Studies. Other students come from German and Slavic Studies (9%), Spanish and Latin American Studies (9%), English (9%), Liberal Studies (9%) and other units including Planning, Environment and Resource Studies, and Drama and Speech Communication.
Students evaluate the courses given by the ELI every time they are offered; in addition, in February 2010, ELI students in both non-credit and credit programs were asked for feedback in a survey. From course evaluation data and results from the survey, students overall were satisfied with the instruction.

EFAS students stated in the survey that the quality of instruction they received was very good (55%) while 44% stated it was excellent. Over 16 terms, from fall 2005 to winter 2010 inclusive, the average rating of EFAS instructors from student course evaluations was 4.4 on a 5-point scale where 5 is the best. The results from both the survey and the course evaluations indicate that the students were strongly appreciative of the quality of instruction they received. Over the past few years, the average evaluations for the EFAS courses were in the 3 range (on a 5-point scale where 5 is the highest) for the level 100 offering but increased for each of the levels until ratings of 4 and 4.2 were being obtained for the 400 course.

Average results for student course evaluations of the EFS courses over the past few years ranged from 3.9 to 4.4 for the value of the overall course content; 4 to 4.4 for the overall value of the courses to students; 3.8 to 4.2 for course recommendation to others; and 3.1 to 3.8 that the courses had improved their English.

Of the ESL credit course undergraduates, 82% rated the instruction as excellent or very good. Student course evaluations corroborate these positive responses. The ESL courses averaged the following on the 5-point scale: ESL 100R - 4.5; ESL 101R – 4.7; ESL 102R – 4.4; ESL 129R – 4.6; ESL 601R – 4.8; ESL 602R – 4.7; and ESL 612R – 4.9. Undergraduates like the ESL courses because the instructors were effective (27%), the material was presented well (20%), the small class size was appreciated (20%) and the content was useful (26%).

Graduate students in ESL courses were similarly satisfied with the instruction they received – 57% rated it excellent while another 42% considered it very good.

The 2010 survey of APPLS students indicated that they were very happy with the instruction – 95% rated the quality of instruction either excellent or very good.

Faculty

At the time of this review ELI had a Director, two Assistant Directors, a Special Projects Manager, two administrators, six full-time and eight part-time instructors for non-credit courses, and two full-time and six part-time instructors for credit courses.

There are no tenured faculty members affiliated with the ELI. All instructors of ESL credit courses have the rank of sessional lecturers. Currently there are eight who share the responsibility of teaching as many as 15 sections of courses each term. Each instructor has at least a Master’s degree in a related field and is accredited for Teaching English as a Second Language (TESL).

The ELI is a youthful institute, with only the Director expected to retire within the next decade.

Sessional instructors in ESL credit courses are assigned a maximum of three courses a term. Full-time instructors in non-credit courses are scheduled to be in class no more than 20 hours a week and no more than five hours per day.
Since 2005 ELI instructors have published eight books, one book chapter, two articles in conference proceedings and 16 conference presentations. In addition, ELI instructors have been very active in the Waterloo-Wellington TESL Chapter having held the positions of president, past-president and member-at-large every year since 2005.

Concerns and Opportunities for Improvement

The three programs have expanded to meet growing demands, attained a coherent status and functioning administrative structure, employed appropriately qualified and committed instructors, provided classes that are widely appreciated, produced significant increasing revenues for the college, and helped visibly to improve the abilities in English among international students at the University of Waterloo.

To date, the programs are functioning primarily as support services, some organized on the basis of limited-term projects in response to unique opportunities and established through professional networks. Now is the time to consolidate, build on, and extend these established capacities. Systematic strategic planning needs to be undertaken to create more integral relations with a full range of programs at the University of Waterloo, to assist the university in achieving its goals of increasing significantly the enrolment of international students over the next five years, and to facilitate partnership with other universities around the world. The ELI has the relevant expertise and structure. The challenge now is to "scale these up", increasing their recognition, utilization and communications with UW.

To meet this challenge and plan for future growth strategically, the review team recommends:

1. Developing a systematic initiative to prepare a comprehensive strategic plan to identify how the ELI supports, fits and aligns with the overall, current goals of UW. In addition, the mission of the ELI needs to be re-crafted to correspond strategically to the mission of UW. Furthermore, the budget and overall financial arrangements of the ELI within the university need to be considered.

Response: This recommendation is topical especially in light of the current strategic planning exercise taking place at Renison. The ELI strategic plan will be developed in step with Renison’s overall plan for the next 10 years, which includes structured expansion of ELI programs to meet the university’s needs.

The current ELI mission statement lacks any reference to the University of Waterloo, and this is a serious oversight. The mission statement will be revised to confirm ELI’s commitment to supporting current and prospective students of the University of Waterloo.

The ELI and Renison University College are working together to develop a realistic financial model that supports regularized staff salaries, provides for increased professional development, and develops the proactive business plan called for by the reviewers.

Overall, it is a priority for the ELI to develop a comprehensive proactive business plan by the beginning of the 2012-2013 budget year. So that Renison’s Board of Governors will understand and approve these proposals, ELI will make a comprehensive presentation to the Board at one of its forthcoming meetings.

2. Revising and consolidating the curricula and assessments in the ELI to improve coherence, validate outcomes and address directly genres of English in academic programs. These steps are needed to serve as a conceptual foundation for expanding the role of the ELI university-wide.
Response: Three times a year, the ELI administration undertakes rigorous and systematic curriculum and assessment review to meet the need for accurate student placement and evaluation. In light of the reviewers’ recommendations, the following initiatives are proposed.

First of all, the ELI will refine procedures to document the success of students who have been accepted to university at the conclusion of their English language studies at Renison.

Secondly, over the next year, the ELI proposes to consult broadly across the university to confirm desired outcomes and evaluate curricula and assessments in preparation for an extensive curriculum review and renewal exercise planned for 2011-12. ELI will first invite an instructional developer from Waterloo’s Centre for Teaching Excellence to offer ELI staff a workshop on aligning course activities and outcomes with assessments. Ideally, this workshop will take place in October 2011 so that instructors can reflect on outcomes and assessment as they prepare for December examinations and the start of the 2011-12 curriculum/assessment review process.

Finally, it makes sense to have an expert bring an outside perspective to an analysis of both curricula and assessment measures. The 2011-12 budget will thus include a stipend for a consultant with second language curriculum and assessment expertise to review the newly aligned curricula in April 2012 and report on their effectiveness and timeliness in anticipation of a September launch. In the interim, the ELI’s programs and courses will continue their emphasis on genres of academic English.

3. Hiring a full-time, tenure-track, academic Director for the ELI to coordinate curriculum development and relevant research and to teach in the APPLS.

Response: To accommodate such a position requires restructuring and refocusing, perhaps with assistance from the University of Waterloo, but Renison is committed to establishing such a position as early as September 2013. The current part-time Director is committed to overseeing the upcoming curriculum and assessment review as well as contributing to the search for a suitable candidate.

4. Creating a position for marketing, student recruitment and international relations to work with cognate staff at the university.

Response: The report also recommends adding a staff position “for marketing and student recruitment and orientation,” someone who would “work closely with the University of Waterloo recruitment team, Waterloo International office, the admissions team, the International Student Office, university-based marketing office and other areas to provide a coordinated face to international students.” The budget surplus from summer 2010 permitted the ELI to create and fill this position in November 2010, and the incumbent will be representing the University of Waterloo and Renison University College at education fairs in Turkey this March.

5. Undertaking an in-depth follow-up study of graduates from the ELI programs to inform future program development on the basis of needs and abilities for English in academic programs.

Response: Relying on a questionnaire such as “Survey Monkey” will provide information on alumni to determine how their ELI courses have or have not helped them in their academic studies. Such a survey will also identify what additional ESL credit courses would provide important support for students in undergraduate and graduate studies. At the time of the site visit, in fact, one new credit course was being developed for offering as early as September 2011. The focus of this course (ESL 110R: Canadian Academic Culture) is on sharpening the critical thinking skills of students in the university context.
Options to increase content-based ESL course offerings will be investigated during the curriculum review process. Current initiatives in this area with the Department of Economics and the School of Optometry have been successful, and consultation across the university may reveal other opportunities to move in this direction.

6. Regularizing staff positions, that are not already formally stipulated, and salaries across programs while stipulating a master’s degree plus relevant experience as a minimum requirement for instructors.

Response: The ELI has been working on developing a staff strategy over the past two years, so the recommendations of the review team that “task assignments and positions within the ELI should be restructured and regularized” come as no surprise. In March, the Director and Assistant Director, Non-Credit Programs will meet with Renison’s Chief Executive Officer to plan an overhaul of all the job descriptions within the non-credit area of ELI. Plans are to meet with a University of Waterloo Human Resources’ expert to have USG ratings reassessed in light of the development of similar positions on campus. The 2011-12 budget will provide for increases called for by the reassessments. The Assistant Director, Credit Programs is currently weighing the advantages and disadvantages to credit instructors of formalizing staff positions and will report her findings by the end of March so that budget implications can be taken into account for the 2011-12 fiscal year.

One final recommendation—that “a Master’s degree in a relevant discipline (e.g., language education, applied linguistics) should be a minimum requirement for instructors teaching all ESL courses”—is a goal for future hirings. Current instructors have always been encouraged to upgrade their qualifications with graduate studies even as they are encouraged to take advantage of professional development opportunities locally and provincially, often with the financial support of the ELI. Revised job descriptions will call for enhanced qualifications.

7. Utilizing existing facilities and resources strategically.

Response: One of the recommendations with respect to facilities and resources acknowledges the limited space available on site at Renison University College and proposes the undertaking of a space-management study to assess the implications of extensive expansion. One option that other universities have adopted is the rescheduling of ESL classes on a staggered timetable, with half the classes meeting from 8:00 a.m. to 1:00 p.m. and the other half meeting from 1:00 p.m. to 6:00 p.m., but this option is not attractive for several reasons (pedagogical considerations, availability of instructors, and student appeal, among others). In 2010, the University of Waterloo Registrar’s Office completed a space survey of classrooms beyond its control and discovered a 45% vacancy rate. Expansion onto campus of ELI courses is, therefore, a subject for discussion with the university, and ELI will begin such discussions once the upcoming Internationalization report is made public.

Given the limited space, it makes sense that the review team would suggest that the purpose and functions of Renison’s multimedia lab be revisited. The lab is not ELI’s to control, but the report’s recommendations will be shared with Renison’s Board of Governors as it approves the forthcoming strategic plan for the next 10 years.
Summary
ELI plans for the future are contingent upon their application within Renison’s current strategic planning exercise. In particular, ELI looks forward to the University of Waterloo’s forthcoming review of its internationalization efforts as the first step in determining the specific areas of responsibility that would most benefit both the college and the university. In anticipation of increased possibilities for collaboration with the university, ELI is committed to taking the following actions (see accompanying timeline) in response to the recommendations of the review team:

1. Within the context of the Renison strategic planning exercise, develop a strategic plan for the ELI that includes revising the mission statement and formalizing the procedures for curriculum and assessment review.
2. With the assistance of University of Waterloo Human Resources’ experts, review and standardize job descriptions and salaries, including plans for replacing the part-time Director with a full-time Director with extensive marketing and management experience.
3. Formalize methods for tracking and documenting student success beyond ELI programs.
4. Take advantage of external expertise to confirm and refine ELI practices.
5. Formalize ELI’s relationship with the University of Waterloo.

Timeline

<table>
<thead>
<tr>
<th>Month</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 2011</td>
<td>• 2011-12 Budget Build</td>
</tr>
<tr>
<td>March 2011</td>
<td>• Job Descriptions to UW’s Human Resources</td>
</tr>
<tr>
<td>May 2011</td>
<td>• Report on UW’s Internationalization Projects</td>
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<td></td>
<td>• Confirmation of Job Descriptions and Grades</td>
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<tr>
<td>June 2011</td>
<td>• ELI Response to the UW’s Internationalization Review and Beginning of Strategic Planning Exercise</td>
</tr>
<tr>
<td>September 2011</td>
<td>• Beginning of Restructuring Exercise (along the lines of CEL)</td>
</tr>
<tr>
<td>October 2011</td>
<td>• Centre for Teaching Excellence Workshop (to map Objectives and Outcomes to Assessments)</td>
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<tr>
<td>December 2011</td>
<td>• Beginning of Regular Curriculum and Assessment Review</td>
</tr>
<tr>
<td>January 2012</td>
<td>• Introduction of Curriculum/Assessment Revisions</td>
</tr>
<tr>
<td>March 2012</td>
<td>• External Reviewer invited to Evaluate Revisions proposed by Curriculum and Assessment Review</td>
</tr>
<tr>
<td>April 2012</td>
<td>• 2012-13 Budget Build</td>
</tr>
<tr>
<td>May 2012</td>
<td>• External Assessor’s Report</td>
</tr>
<tr>
<td>June 2012</td>
<td>• ELI Response to External Assessor’s Report in preparation for September Launch</td>
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<tr>
<td>September 2012</td>
<td>• Curriculum Launch</td>
</tr>
<tr>
<td>December 2012</td>
<td>• Review and Evaluation of New Curriculum and Assessment Tools</td>
</tr>
<tr>
<td>January 2013</td>
<td>• Development of Job Description and Launch of Search for Full-time Director</td>
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<tr>
<td>April 2013</td>
<td>• Short-listing and Preparation for Interviews</td>
</tr>
<tr>
<td>September 2013</td>
<td>• New Director begins</td>
</tr>
<tr>
<td>January 2014</td>
<td>• Languages Canada Accreditation Site Visit</td>
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INTERNATIONAL STUDIES OPTION

Review Process

This was the second review of the International Studies Option. The first one was completed in 2003. The Self Study report for this review was received on June 29, 2010, and the internal review team conducted its evaluation November 30, 2010. The review team’s report was submitted December 3, 2010 and the response was submitted March 18, 2011.

Characteristics of the Program

Historical Overview

The International Studies Option is a small interdisciplinary program in the Faculty of Arts at the University of Waterloo (UW). It commenced in 1989-90. Over the years it was essentially the child and creation of the Departments of Political Science and History from where most of the students came. The program never really caught on in terms of student enrolment.

The 2003 report of the Option stated:

"Right now, for good or ill, International Studies is primarily a paper organization, run with absolutely minimal resources and faculty/staff support… A recurring problem with the program in the past is that… The directors opted for a caretaker role, keeping International Studies modestly sized in order to cope with their other administrative jobs… it precludes any opportunity to revitalize and enlarge the International Studies Program."

Instead of shutting the Option down the program was given another chance.

The Option is run by a Director who is a full-time faculty member of the Department of Philosophy together with a Board of Advisors comprising four faculty members.

Program Objectives

The objective of the Option is to enhance students’ understanding of the world’s diverse communities and cultural and political implications of achieving closer relations.

Academic Programs Offered

International Studies Option

The Option is made up of seven courses, one required - International Studies (INTST 101): Introduction to International Studies, and six courses selected from a list of 94 courses from 20 Departments. Four Departments, Political Science, History, Religious Studies, and Economics offer 58% of these courses; while Political Science and History offer 35% of the 94 courses.

The required course has an enrolment cap of 65 and there is always a waiting list. The Director teaches this course as overload with no teaching assistance support.

As the Self Study states:

"The program “is what it is,” as they say: a small Option allowing Waterloo students to gain international knowledge and add the word “international” to their degree in pretty painless fashion.”
Since INTST 101 is the only International Studies course it is the only one for which student course evaluations are available. The other 94 courses and the instructors who teach them are evaluated by their home Departments.

Students

In 2002 there were 28 students enrolled in the International Studies Option whereas in 2010 there are 61 students registered for the Option from 23 different Departments from three different Faculties. From 1999 to 2002 inclusive, nine students on average annually graduated with the Option. By contrast in June 2010, 27 students graduated with the Option.

Students were positive in their evaluation of INTST 101. On a scale from 0 to 5 where 5 is the highest score, students evaluated the instructor of INTST 101 as 4.9 and the course as 4.8. Furthermore this course has been added as a requirement in a new Global Engagement Specialization available to Arts and Business students and will become a requirement for students entering the Accounting and Financial Management program in fall 2011. This will be an addition of 250 to 300 students.

Main Strengths

The major strengths of the International Studies Option in its present form are its accessibility and flexibility. It is accessible to all students on the campus, regardless of their major. It offers a way to integrate an international outlook into all existing majors. It does so in a very flexible way, with a program structure that is very simple and easy for students to fulfill.

Concerns and Opportunities for Improvement

The review team made six recommendations.

1. Make more effort to explore opportunities for synergies and collaboration with other undergraduate programs, options, specializations and minors on campus that have an international focus. This is important for keeping abreast of developments on campus that may have implications for the International Studies Option, and also to avoid duplication of efforts.

2. Consider allowing other introductory courses that cover basic international studies material to count for the core course requirement. For example, the required first year core course in the Option could be a choice between either the INTST 101 or the INDEV 100 (provided this was acceptable to the INDEV program). Allowing students in the Option to choose between these two courses for their core requirement would help to avoid any duplication of efforts in the two programs. It would also ease pressure on the Director of the International Studies Option to offer the INTST 101 course every year.

3. Rationalize the Director’s teaching workload. There should be careful consideration of whether it is advisable to have the Director teaching INTST 101 on overload on a regular basis. The review team was of the view that this course should be part of his regular teaching load, rather than being consistently taught on overload. This would free up the Director’s time to enable him to reach out more on behalf of the International Studies Option to other internationally-oriented programs and faculty members on campus.
4. More use could be made of the Advisory Board for advice and direction of the option and core course, particularly with respect to potential changes in the International Studies Option structure or delivery. The Advisory Board could meet regularly once per term, for example.

5. More structure could be given to the International Studies Option in terms of course requirements. The review team and several stakeholders (including students) felt that the requirements could be made more stringent. Strengthening the requirements of the Option could give it more “weight” and “meaning” as a designation on student transcripts and diplomas. The Option could, for example, include specific requirements for both breadth and depth beyond the core course. This might include an “A” list of potential course options at the 200 and above level, which could require students to take approved courses in at least three disciplines/Departments (to ensure breadth). There could be a “B” list that requires students to take a certain number of key upper year courses (3rd - 4th year courses, to ensure depth). These A and B list courses could be made up of a smaller number of selected courses that are deemed to be particularly important for the Option. There could also be a “C” list which includes more general electives that have international content. Students might also (or alternatively) be asked to develop their own program by choosing a suite of courses that meet these requirements, and also provide a written justification for how these particular courses fit together to make up a unique International Studies Option program. That justification could be evaluated by the Advisory Board, so that each student designs a unique program that the Director and Advisory Board deem to have sufficient breadth and depth in International Studies.

6. The review team suggests more broadly, beyond the International Studies Option itself, that there be a university-wide review of the various options, specializations, majors and minors on campus, as well as exchange and study abroad programs, that are internationally-oriented. This broader review could assess how these programs fit together (or not) with each other, and with UW’s office of international programs.

In light of the review team’s suggestions, the Director proposes to achieve at least the following during the next seven years:

1. Publish a textbook, Introduction to International Studies, with Oxford University Press, and make it the required reader in the core course, INTST 101. This will be done by September 2011, in time to handle the new influx of AFM (Accounting and Financial Management) students.

2. Manage the new sections of INTST 101 which the AFM curricular changes now require. This has been set up for next year. In fall 2011, there will be two on-campus sections exclusively devoted to the incoming AFM students. This will be funded by the School of Accounting and Finance, complete with several teaching assistants (TAs) per section. Also in fall 2011, the online version of the course, open to all, will be run. Then, in winter 20102, there will be one on-campus section, open to all students, offered. This is how the core course will be scheduled, moving forward. Managing this growth, and ensuring it succeeds, is the major short-term goal of the Option over the next year or so.

3. Thoroughly cull and update the course listings for the purpose of the UW Calendar during summer 2011.

4. Commit to have the International Studies Option Board meet once every term moving forward.

5. Over the next few years update thoroughly the content of the online version of the course.
6. Explore the possibilities of further “outreach, consultation and collaboration” with like-minded units, such as the Faculty of Environment, the Departments of Political Science and History, and the Global Experience Certificate. Furthermore, looking at the composition of the current International Studies Option Board there are, indeed, representatives from the Faculty of Environment, International Development/St.Paul’s, History, and Recreation and Leisure Studies. These people do represent advice to and from, and outreach from and to, the very units which the review team recommends.

7. The International Studies Option Board will explore with faculty members of international development whether INDEV 100 ought to be allowed as a core course option, alongside INTST 101, for the ISO.

There are, however, two recommendations that are not practical or desirable.

1. Making INTST 101 part of the Director’s regular teaching load simply will not be acceptable to the Philosophy Department. The Director of the International Studies Option is one of the few people in the Department of Philosophy who can teach moral and political philosophy courses, and these can be huge classes (like Business Ethics, 150+, and Medical Ethics, 150+) and there is not wiggle room for the Director to drop them in exchange for 101. Moreover, the Director has had no problem teaching 101 on an over-load basis over the past five years. Moreover, just within the past two months, the Director has secured on-going TA support from both the School of Accounting and Finance and the Dean of Arts Special Programs, which will assist the Director greatly.

2. There will be no move to change the structure of the International Studies Option program for several reasons:

Firstly, the structure suggested by the review team is what the structure of the Option used to be, and it failed utterly, almost resulting in the shut-down of the program. There is no point in going backwards.

Secondly, making the requirements more stringent and complex will both confuse students, as well as drive them away. The review team’s suggestion is simply not sale-able to students. The enrolment and interest in the program have been driven by streamlining and simplifying the requirements. The students understand the requirements with crystal clarity, and have no problems meeting them. Hence the growth in the Option over the years.

Thirdly, the students can already, very substantially, tailor the option to their interests, given the massive flexibility in courses to choose from, and the potential for them to ask the Director whether a new given course can count.
MECHATRONICS ENGINEERING

Review Process

This was the first formal review of the undergraduate program in Mechatronics Engineering. Since the engineering accreditation process overlaps greatly with the undergraduate program review process, the University of Waterloo (UW) used the accreditation review to satisfy the requirements of the undergraduate program review process for the Mechatronics Engineering program. The process of accreditation emphasizes the quality of the students, the faculty members, the support staff and the educational facilities. The program’s self study was submitted October 6, 2010; the site visit was conducted November 21 to 23, 2010; the report of the visiting team on the accreditation visit was received March 24, 2011. The response from the Mechatronics program was received March 25, 2011.

Characteristics of the Program

Historical Review

Prior to the launch of the Mechatronics program in 2003, there were at least 12 faculty members in three Departments – Mechanical Engineering, Electrical and Computer Engineering, and Systems Design Engineering – whose research and teaching interests could be clearly classified as Mechatronics Engineering. In fact, it was this group of faculty members who initiated the Mechatronics Option between the three Departments in 1998, and who were also actively involved in the planning and creation of the current program. Although Mechatronics is a collaborative effort of three Departments it is housed within the Mechanical Engineering Department for administration and other purposes.

The implementation of the Mechatronics program included the creation of 19 new Engineering faculty positions – 11 in Mechanical and Mechatronics Engineering (in 2006, the Department of Mechanical Engineering was officially renamed the Department of Mechanical and Mechatronics Engineering), four in Electrical and Computer Engineering, and four in Systems Design Engineering. While this additional faculty complement was appropriate for the steady size of the program, it seriously underestimates the number of faculty members actually involved with the Mechatronics program. In the initial years the goal was to implement the curriculum effectively and with continuity. Effort is made that each course has at least two faculty members who can teach it. This ensures that there is a backup faculty resource.

In time, the Mechatronics curriculum stabilized, and in fall 2009 a curriculum mapping exercise was undertaken using the five pillars of the program, viz. Electronics and Computers; Science and Engineering Science; Mechanical Design; Mathematics; and Systems Modelling and Controls. If the graduating engineers have competency in each of these pillars then the program can be considered successful. The curriculum mapping exercise not only focused on the five pillars but considered an assessment of the program using outcomes in 12 different areas. These were: a Knowledge Base for Engineering; Problem Analysis; Investigation; Design; Use of Engineering Tools; Individual and Team Work; Communication Skills; Professionalism; Impact of Engineering on Society and the Environment; Ethics and Equity; Economics and Project Management; and Life-long Learning.

Program Objectives

Mechatronics Engineering is an emerging discipline that integrates the design principles and practices in Mechanical, Electrical, Computer and Systems Design Engineering, and thus provides a comprehensive base from which graduates can work and communicate. The philosophy is that, to be able to design
systems properly that draw on the various traditional engineering disciplines, it is necessary to present and integrate these through all years of a comprehensive program.

**Academic Plans Offered**

The program offers the following plans:

- BASc, Honours Mechatronics Engineering, Co-op Program
- Biomechanics Option
- Management Sciences Option
- Environmental Engineering Option
- Water Resources Option

The program consists of 32 core technical engineering courses, 17 of which are provided by Mechanical and Mechatronics Engineering (MME), six by Electrical and Computer Engineering (ECE), five by Systems Design Engineering (SYDE), and four by Mathematics and Science. There are five technical elective courses in the fourth year, from MMT, ECE and SYDE. The technical program is strengthened by five complementary studies courses that deal with the Humanities and Social Sciences. The program is also structured to provide the students with a very significant experience in laboratory work, in that over one third of the technical courses in the program have laboratory components.

The academic program is complemented by six work terms (duration four months each) in industry. During the first five work terms, the students are also required to take Professional Development courses which focus on the general themes of responsibility, leadership and critical analysis as introductions to the essential professional skills that are required of an engineer.

**Students**

The number of applicants for admission to 1A has leveled out at approximately 475 per year. The steady state target for Mechatronics is 110, of which 10 would be international students.

Students admitted to the program have high-school averages typically in the mid to low 90s, with the lowest admitted average being in the low 90s. In the 2009-10 academic year the Mechatronics program had the highest admission average of all students admitted to the Faculty of Engineering.

In determining the admissability of applicants, the following criteria are considered:

- Admission Average (ADM)
- High-school Adjustment Factor (HSAF)
- Admission Information Form (AIF).

The HSAF is intended to account for variations in marking standards between high-schools, measured by the performance of previous graduates from a given secondary school in our first-year engineering programs. The adjustment is derived from an eight-year rolling average mark drop from grade 12 to first-year university (i.e. the 1B term average minus the ADM average, averaged over students from a given high-school for the previous eight years). This drop averaged over all Ontario high-schools is approximately 16%, while the approximate range for different high-schools is about 6% to 21%. Data on adjustment factors are updated yearly, thereby enabling differences and changes in the grading practices and standards of the secondary school to be taken into account.
Applicants are also asked to submit an AIF. The purpose of these forms is to identify students who have a higher probability for success in the program as demonstrated by individual strengths and time-management skills. The AIF describes enriched academic activities, athletic activities, employment while a student, community work, honours and awards, and other extra-curricular activities. Conversely, diminished probability for success can be detected via the AIF through repeated high-school courses, reduced course load, English language difficulties, and the absence of any extra-curricular activity. The AIF asks specific questions directed at the above issues. These forms are read and scored by a group of retired engineering professors who assist the Director and Associate Director. A bonus in the range of zero to five points is added to the ADM based on the AIF score.

Out-of-province students typically comprise about 20% of the first-year class, with most of these coming from British Columbia, Alberta and Quebec. In such cases, consideration is given to the student’s secondary school and to the experience Mechatronics has had with students from that institution or schooling jurisdiction.

Advanced admission is limited to entry at the 2A, 2B or 3A level. Admission beyond the 3A level is not allowed at UW due to the co-op requirements and degree-granting considerations. Such students comprise a very small fraction of the program’s student population.

The annual average number of students admitted from 2004-05 to 2009-10 inclusive, was 118’ of whom, from 2005-06 to 2009-10 inclusive, the annual average number of international students was 12. At present, there are no plans to expand the Mechatronics program.

The number of women in the Mechatronics program is less than 6%. Mechatronics has not been successful in recruiting females. This number is the lowest of all the programs in the Faculty of Engineering.

An Engineering program must include the following number of accreditation units (AU).

[An AU is defined on an hourly basis for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time between student and faculty members responsible for delivering the program:]

<table>
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<tr>
<th>Required</th>
<th>Minimum AU</th>
<th>AU Totals for UW Mechatronics</th>
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<tbody>
<tr>
<td>The Entire Program must include</td>
<td>1,950</td>
<td>2,215.2</td>
</tr>
<tr>
<td>Mathematics</td>
<td>195</td>
<td>323.1</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>195</td>
<td>231.3</td>
</tr>
<tr>
<td>Mathematics and Natural Sciences combined</td>
<td>420</td>
<td>554.4</td>
</tr>
<tr>
<td>Engineering Science</td>
<td>225</td>
<td>517.3</td>
</tr>
<tr>
<td>Engineering Design</td>
<td>225</td>
<td>516</td>
</tr>
<tr>
<td>Engineering Science and Engineering Design combined</td>
<td>900</td>
<td>1,133.4</td>
</tr>
<tr>
<td>Complementary Studies</td>
<td>225</td>
<td>441</td>
</tr>
<tr>
<td>Laboratory Experience and</td>
<td>No set figure</td>
<td></td>
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</tbody>
</table>
The Mechatronics program exceeds the AU requirements of the Canadian Engineering Accreditation Board (CEAB) by 13%.

Student evaluations of courses are carried out each term. The average evaluation of the five Mechatronics courses taught in the winter term of 2010, on a scale of A to E where A is best, was 33.1% As and 37.1% Bs. It would appear from these evaluations that the majority of students value their courses.

The Mechatronics prides itself on its strong relationship with students. Key to this relationship is the student faculty committee whose membership includes Department administrators (the Undergraduate [UG] officer), two student representatives, the UG program advisors and class professors. The committee meets every two weeks and the meetings present opportunities for bringing information, resolving problems and discussing any other non-academic issues for each cohort before they deteriorate or impact the program. The committee is a strong communication vehicle between the administration and the students. In addition, the program holds a welcome back lecture at the start of term to appraise students of the upcoming term and events of importance to them.

The Mechatronics program has graduated two excellent cohorts of about 90 students.

**Faculty**

At the time of this review there were 36 faculty members, 16 technical staff and 12 administrative staff who contributed to the Mechatronics Engineering program from the three Departments: 17 from MME, nine from ECE and 10 from SDYE. Of these individuals 10 were full professors, four associate professors, 20 assistant professors and two were lecturers.

Faculty members come from all over the world. Faculty members completed their Bachelor’s degrees in foreign countries such as India, Turkey, Germany and the USA. Most faculty members obtained their post-graduate degrees in Europe and North America. There are eight female faculty members who teach MME courses on a regular basis. Approximately one quarter of current faculty members in the MME Department were hired in the past three years.

Over 84% of faculty members associated with the Mechatronics program are either registered professional engineers or have applied for a PEng license.

In the next seven years, it is anticipated that four professors will retire.

The teaching load of faculty members in all participating Departments is three courses per year, normally done by teaching in any two of the three terms of a given academic year. One of these courses is usually a

<table>
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<tr>
<th>Required</th>
<th>Minimum AU</th>
<th>AU Totals for UW Mechatronics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Procedures instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Qualified” Engineering Science and Design combined</td>
<td>600</td>
<td>804.22</td>
</tr>
<tr>
<td>[&quot;qualified&quot; means the AUs are taught by qualified engineers (PEng)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Qualified” Engineering Design</td>
<td>225</td>
<td>373.6</td>
</tr>
</tbody>
</table>
graduate level course. In periods of unusually high research activity, faculty members may be allowed to teach two courses per year with the approval of the Chair.

From 2006 to 2009 inclusive, faculty members produced annually: 164 referred journal articles; 113 referred conference papers; 16 book chapters; 10 patents; 36 industrial reports; 54 invited talks; nine keynote addresses; and three awards for papers or presentations.

Annually, over the period 2004-05 to 2008-09 inclusive, MME has had research funding of $7.9 million, of which $2.3 million came from the Tri-Council Granting Agencies; $1.7 million from other adjudicated sources such as Ontario Centre of Excellence (OCE), Materials and Manufacturing Ontario (MMO) and Ontario Research and Development Challenge Fund (ORDCF); $1.7 million from contracts; $1.1 million from Ontario Research Fund – Research Infrastructure (ORF/RI); and the rest from sources such as Canada Foundation for innovation (CFI), Canada Research Chairs (CRC) and Early Research Awards (ERA).

The program had two Tier 1 CRCs and two Tier 2 CRCs, one University Research Chair (URC), one General Motors/Natural Sciences and Engineering Research Council (GM/NSERC) Design Chair and five faculty members hold ERAs.

Various other awards have been bestowed on faculty members since 2006. These include Fellow of the Royal Society of Canada, Fellow of the American Society for Mechanical Engineers, Fellow of the Canadian Society for Mechanical Engineers, Fellow of the Engineering Institute of Canada, Fellow of the American Concrete Society, the Rio Tinto Alcan Award of the Canadian Metallurgical Society, and the Canadian Society for Mechanical Engineering Jules Stachiewicz Gold Medal.

Strength

One of the main strengths of the Mechatronics program is its relevance to the existing needs of industry. The Mechatronics program is tailored to meet this need.

Concerns and Opportunities for Improvement

The review team identified seven issues:

*Issue 1:* Although the contents of all the required courses and activities of the curriculum have been mapped to the graduate attributes, there are, however, no potential methods listed for assessment of success in imparting the attributes.

*Response:* An implementation committee has been meeting regularly since 2008, and a full implementation of attributes and assessment methods will be in place when the new accreditation criteria are enacted.

*Issue 2:* Teaching Assistants (TAs) sometimes grade final examination questions. Although the grading is subject to various forms of oversight by instructors, this practice increases the potential for errors and inequitability in grading and promotion decisions.

*Response:* TAs sometimes assist with the grading of final examinations under the direct supervision of the responsible faculty member who is in the same room and who alone is authorized to submit course grades. In addition, all the TAs are required to attend a two day TA training workshop which is run by the Faculty of Engineering and focuses on issues of fairness, equity, and communications.
Issue 3: The review team did not agree with all the allocations of accreditation units (AUs) to the various curriculum categories. Revisions were suggested for seven courses. In addition it was considered that the allocation of 47 AUs to each PDEng module was excessive.

Response: The submitted course content tables do not differ greatly from the last accreditation which took place in 2007 and included 10 programs. Although the PDEng courses are being phased out and replaced by courses delivered by the University WatPD office with curriculum oversight by Engineering, there is a discrepancy between the Canadian Engineering Accreditation Board’s instructions and the interpretation of the review team about calculation of AU for online courses.

Issue 4: After revision of AU allocations, the Natural Science content of the curriculum is 193 AU which is below the minimum requirement of 195 AU.

Response: Since the Department disagrees with the revisions to the AUs, it still calculates the Natural Science content at 231 AU, which is 20% over the 195 minimum.

Issue 5: Many of the students and their TAs had inadequate knowledge of professional licensing requirements.

Response: Mechatronics Engineering students receive substantial instruction on professional licensing issues and are examined on them in the concepts course, MTE 100, in the first year.

Posting of occupational health and safety instructions is inadequate in many of the laboratories, Also the chain of command for laboratory safety is not clear.

Response: For safety management in laboratories, the line of supervision begins with the Department Chair proceeds to the Director of Laboratories (or equivalent) and then to the technical staff in charge of the laboratories.

Hazard signs are posted in laboratories wherever applicable. Also labeling of chemicals is part of students’ safety training. Undergraduates receive a full-hour Safety Training Lecture every term, which translates into eight hours of formal training before they graduate.

Issue 6: A number of students expressed concern regarding the ability of some TAs and of a small number of instructors to communicate effectively.

Response: The Mechanical and Mechatronics Engineering Department appointed a teaching Chair in 2006. This individual works with instructors to improve delivery, effectiveness, and course outcome. While the quality of the undergraduate program is front and central in TA assignments, there is also a need for equity in opportunity. TAs, who are deemed not effective, are not rehired so there is significant incentive to improve.

Issue 7: In addition to the project courses, the compulsory portion of the curriculum contains a number of courses dealing specifically with Mechatronics components but it lacks a system-level course that deals with Mechatronics system integration.

Response: There is considerable material on system integration in the program. Students design Mechatronics systems in six different courses, namely, MTE 100, 220, 322, ME 380, ME 481, and 482.
Every day, faculty, staff, and retirees make a difference in the lives of our students through uWaterloo’s Keystone Campaign. This annual fundraising program encourages them to celebrate the Waterloo family and show their pride by making a financial contribution to the university’s highest priority. Faculty, staff, and retirees can also “fund their passion.”

In our most recent capital campaign – Campaign Waterloo: Building a Talent Trust – more than $18 million was raised by our campus community in support of various initiatives, including scholarships and awards, research, and equipment. The Keystone program continues to be a leader among Canadian higher educational institutions in overall dollars raised and donor participation. It also continues to be a valuable asset to Waterloo’s overall development program and the institution’s sixth decade goals.

Keystone slide presentation at the Senate meeting will review the following:

- Program Overview
- Campaign Waterloo: Building a Talent Trust: Performance & Impact
- Next Steps

Meg Beckel
Vice-President, External Relations
FOR APPROVAL

School of Public Health and Health Systems

Motion: That Senate approve transforming the name and mission of the Department of Health Studies and Gerontology to create a School of Public Health and Health Systems within the Faculty of Applied Health Sciences. [Note: If approved, the proposal will be forwarded to the Board of Governors for approval at its June 14, 2011 meeting.]

Background: The proposal received the approval of the AHS Faculty Council at its meeting on March 25, 2011. See Attachment 1 for the Executive Summary.

The full proposal is at:

Susan J. Elliott
Dean, Applied Health Sciences
Executive Summary

The Faculty of Applied Health Sciences (AHS) proposes to transform the Department of Health Studies and Gerontology into a dynamic and distinctive School of Public Health and Health Systems. The Department of Health Studies and Gerontology (HSG) has a 34 year history of excellence and innovation. It was the first transdisciplinary department in Canada dedicated to health promotion and disease prevention, the first to offer a PhD in gerontology and the first to offer a distance based Masters in Public Health. Other institutions have taken notice of our success and attempted to duplicate it. By creating an exciting array of new objectives, structures, products, and services the creation of a School will once again position the University of Waterloo and the Faculty of Applied Health Sciences as a global innovator. It will address emerging challenges in the world, and establish a new standard of performance and impact.

Mission, goal and objectives. The mission of the School of Public Health and Health Systems will be to advance learning, knowledge, practice and capacity in the fields of public health and health systems through strategic partnerships and excellence in teaching, research, and service. Our goal is to be recognized by students, peers, and other stakeholders as Canada’s most innovative and influential school of public health and health systems. Objectives are aligned with UW’s Sixth Decade Plan, as well as those of the local, provincial, national and international public health and health systems communities. The objectives address six broad areas: enhancing graduate teaching and training; improving undergraduate teaching and training; internationalization; advancing the amount, relevance, and creativity of our research; improving our ability to rapidly transform policy, practices, structures and tools for health and health systems; and enhancing our resource base. Specific objectives for the next six years include increasing our total graduate enrolment from 150 FTEs to 255 FTEs; increasing first year graduate intake targets from 73 to 136; increasing total undergraduate enrolment from 408 FTEs to 505 FTEs; increasing our first year undergraduate intake targets from 110 FTEs to 149 FTEs; ensuring every student at the graduate and undergraduate level participates in either a research or inquiry based learning project; improving rates of student success and retention; increasing the international student population in our undergraduate programs from a current rate of <1% of FTEs to 12% of FTEs; increasing the international graduate student population from 2% of FTEs to 20% of FTEs; establishing at least two new “2+2” undergraduate program agreements with international institutions; increasing the proportion of students and faculty who win major external research and teaching awards; increasing the per capita number and amount of faculty led research grants (especially tri-council funding); creating new linkages with key external agencies by developing innovative service units and joint faculty positions; facilitating new connections with external partners, alumni and friends of the university; creating new development and contract funding opportunities.

Scope. The focus of the new School will be on CIHR pillars 3 (health services) and 4 (population and public health), with only modest research and training directed at pillars 1 (biomedical science) and 2 (clinical sciences). For example, our current BSc program in Health Studies will continue to use a transdisciplinary curriculum to prepare students for admission into graduate schools and professional careers in medicine, dentistry, nursing, chiropractic, etc. However, significant emphasis will be on public and population health, defined as "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, communities and individuals" (Winslow, 2002). It is distinguished from other health professions and fields by (1) its emphasis on health enhancement and the prevention of disease and injury; (2) its emphasis on health at the level of communities and populations rather than individuals; (3) a concern for reducing inequalities in opportunities for health and health status; and (4) the development and application of interventions that aim to alter collective factors and conditions (social, economic, political, cultural, educational, environmental, and geographic), structures, processes, policies, and programs) particularly as they intersect with intra person determinants (e.g., genetics, biological responses, cognitive and emotional responses).

The new School will also be explicitly designed to produce people and research adept at responding systematically. Our people and research will enhance integration, effectiveness, user satisfaction, and efficacy of the policies, programs, processes, and structures which impact on the health of the public, including but not limited to health services. It is more than a classic school of public health. The health
systems component will emphasize the dynamic interrelationships of variables at multiple levels (e.g., from cells to society) while also attempting to understand the impact of systems on health and health care over time. A systems orientation is useful for making implicit assumptions about complex phenomena explicit, developing interventions that account for dynamic interactions and conducting simulation models to generate “alternative futures” (allowing decision makers to simulate the impact of various policy decisions and how they play out over time before actually putting them into practice). While students will be introduced to aspects of formal systems theory and systems science, our use of the expression “health systems” is intended to represent a set of perspectives and broad principles rather than strict adherence to a specific theory, existing body of literature, or discipline. A systems orientation will make the School of Public Health and Health Systems unique in Canada, and enable us to join a leading edge group of universities around the world concerned with systems approaches to public health and for integrating and improving health care policies and services.

**Opportunities.** The School will enable the Faculty of Applied Health Sciences, and UW more generally, to respond to a number of emerging opportunities and challenges in Canada and around the world including: an increased demand for highly skilled, graduate trained, evidence informed professionals capable of improving public health and health care in systematic, transformational ways; the health and health care challenges associated with an aging population; building public health and health system capacity; and functional public, private and non-profit partnerships that create commercial innovations in socially and environmentally responsible ways. The demand for additional human resource capacity is especially acute given the proportion of the current public health and health systems workforce on the verge of retirement, the increasing desire of adults to retain into health related careers, and existing health professionals need to advance their knowledge, skills and effectiveness. In the wake of unsustainable growth in health care costs, and public health threats such as growing rates of chronic disease, inequalities in health, water and food borne illness, the new School is a response to recommendations in many recent national commissions to create more public health capacity, and facilitate health care integration and efficiency.

**Distinctiveness and operation.** The proposed School will be distinctive in several ways. First, our School will focus on the development of capacity, tools, processes and structures (e.g., governance, policy, mass communication, community mobilization, surveillance, and evaluation) to reorganize, integrate and shape the complex systems and organizations which facilitate or undermine population health and the integrated, efficient delivery of health care. Every student will have foundational knowledge about how health systems are organized, as well as how and why it is important to understand health (and health care) as a system. Second, unlike other schools that spend inordinate resources on describing problems, we propose to focus training and research on solving significant national and international challenges in public health and health systems. The problem areas have been chosen to (i) reflect the Department’s current strengths, (ii) the potential to link and create synergy with other UW departments and research centres/institutes, (iii) feedback from strategic external partners about their primary needs, (iv) the ability to distinguish ourselves from and complement activates in other departments and universities, and (v) potential opportunities to leverage new resources. Specifically, we intend to build critical mass related to: chronic disease prevention and management; health and aging; health care integration and efficiency; food and water safety, security and governance; reducing health inequalities; and health and the environment. Third, we will cultivate much stronger direct links to regional, national and international public health and health system leaders to help us select and maintain our attention on the largest, most relevant problems and challenges. These partners will ensure our research products are practical, relevant, efficient, and rapidly integrated into policy and practice. They will ensure our graduates have advanced knowledge, skills, and experience that are practical and relevant to the present and future. Forth, the curriculum will emphasize “hands on” problem based learning. Students will participate in placements in applied practice/policy settings, a research centre or both. Fifth, the school proposes to create a limited number of “service centres” related to challenges such as program/policy planning and evaluation, health communication, knowledge integration and visualization. These centres will as serve as a platform for training students, provide services to community agencies...
and partners (creating further connectivity between the school and external partners), and include a state of the art facility for showcasing tools and products developed by UW students, staff, and faculty. We propose to create joint faculty appointments with external partners that will further facilitate research and training relevance as well as rapid employment of our graduates and research. A sixth distinguishing feature is that we our training programs will be more accessible, responsive, relevant and attractive by emphasizing on-line learning and cooperative education. The School will explore mechanisms such as fast tracking, joint degree programs, concentrated summer schools, executive programs, more continuous admission cycles, domestic and international practicum placements. Seventh, the new School will foster greater integration, trans-disciplinary thinking, and improved resource efficiency by having faculty members and students affiliate with one or more existing or new research centres, institutes or research clusters. In addition to supporting existing centres related to chronic disease prevention, water, and healthy and aging, we will foster new transdisciplinary research and service clusters (in collaboration with other academic units) in each of our areas of focus. Eighth, unlike other schools of public health which focus on child and maternal health, we will place special emphasis on health systems and public health for aging populations. Despite dropping “gerontology” from our unit’s name, our commitment to health and aging will be enhanced through new training programs and research infrastructure. Finally, the School will provide products to prepare students for two general trajectories: (1) a career as an evidence informed health professional; or (2) a career as practice and policy based researcher and academic. It will offer bachelors, masters and doctoral training in both trajectories.

**Academic programs.** The School will continue to offer all the current programs in the Department of Health Studies and Gerontology, including a BSc in Health Studies (honours and regular, minors in informatics or gerontology); a distance based MPH; thesis based MSc and PhD programs in population health; and participate in joint doctoral degrees in Aging, Health and Wellbeing, as well as a joint program in Work and Health. The School will prepare separate proposals to add new programs and degrees in three phases over the next six years. Phase one will involve new professional, distance based masters programs in health evaluation and a new public health specialization for UW’s existing Master of Health Informatics.

Traditionally our BSc in Health Studies has attracted students with strong backgrounds in natural science, most of who aspire to become clinical health professionals in areas such as medicine. However, increased competition from other universities and programs, and the change in our name and focus to public health and health systems may slightly reduce our ability to continue attracting sufficient numbers of top students with this orientation. Therefore, the School proposes to broaden its potential “market” by introducing two new bachelors programs in phase two of its expansion. A Bachelor of Public Health would be designed for entry after two years of university study and appeal to students who, through the course of their studies, have become interested in a career in population and public health (as opposed to a career in clinical health care). Students with an interest in clinical health care or research oriented graduate school would continue to pursue our existing BSc in Health Studies (possibly re-named as Health Sciences). The School also intends to develop a small Bachelor of Health Promotion program designed for students who have strong backgrounds in social science rather than natural science and are interested in health promotion related careers. The addition of the two new undergraduate programs will ensure our enrolment numbers and the quality of students remain high by appealing to a wider audience. They will also serve as a source of prospects for the School’s professional graduate programs (MPH, MHI, MHE). Phase two will also include the introduction of Canada’s first English language Doctorate of Public Health (DrPH). Unlike research intensive PhDs, DrPH’s provide advanced professional training, particularly for the rapidly growing number of individuals who have an MPH. Phase two will also include the creation of some new streams and joint degree options for students in the masters of public health program. For example, in addition to a general MPH, and a special stream in the socio-behavioural aspects of public health, we intend to create a new environmental stream. To complement our other on-line masters program, we will also explore the creation of special streams in public health informatics. Finally, we will explore the creation of joint degrees such as a MHI/MPH, a MHPE/MPH, a MSW/MPH (with Renison), or a joint degree in management science and a MPH.
Phase three of the School’s academic expansion will involve the creation of additional research oriented graduate training. For example, we may increase the number of streams in our research oriented MSc programs to include health informatics research, as well as research to improve health program and policy evaluation. They would be parallel to the aforementioned professional degree options. It may also include new graduate degrees in areas such as knowledge exchange and translation for health, health systems planning, and health and aging.

Rather than create a ubiquitous, unfocused global health degree (as has been done at a couple of other Canadian institutions), we propose to integrate global and international health into all programs. This will be done by developing new courses, integrating a more global perspective into existing curriculum, creating international exchanges, as well as developing new international partnership agreements for research and training. The net result will be greater appeal to international students and the production of graduates with specific knowledge and skills in areas such as population intervention, health informatics, health evaluation, and health care system design, that also have knowledge and experience relevant to solve health challenges (e.g. chronic disease prevention, healthy aging, food and water security and safety, etc.) in a domestic and international context.

The current proposal is for the creation of a School that will provide and oversee the infrastructure for these new programs. This proposal is NOT intended to displace the usual approval process for the new academic programs described above. These additional approvals will be sought in due course and with proper documentation.

Scan of related schools and programs. Six Canadian universities currently have schools of public health and two others have departments or institutes which provide graduate training. All are organized along highly traditional disciplinary ways. All specialize in areas different from the proposed new UW school. Eight Canadian universities offer professional graduate training in public health (i.e., an MPH) while two others have MPH programs in development. These programs are predominantly delivered through on site-based learning, although three have started to introduce some distance based courses. Most public health schools and programs have expertise in child and maternal health but none explicitly deal with aging populations. Only one program has substantive expertise in public health informatics. Two schools have developed graduate programs in health informatics but, unlike the UW proposal, they are highly generic. No institutions in Canada have a specific emphasis on health systems. At least two American institutions have recently created departments of health systems within a School of Nursing (Johns Hopkins) or a School of Public Health (University of Memphis), putting our proposal on the leading edge of units which embrace a systems orientation. While some Canadian institutions offer training in the management and administration of specific health care agencies (e.g., hospitals), or health services research, no programs train professionals to think about and adapt whole human systems for health and integrated health care. No other institutions offer a program dedicated to health specific program and policy evaluation. Only one institution has a Bachelor of Public Health degree (Brock). All other bachelor programs are in broad fields such as health studies, health science, or community health similar to the Department of Health Studies and Gerontology’s current BSc program. Only a couple accommodate students that do not have a background in natural science. Only one Canadian institution offers a doctorate in public health but it requires proficiency in French. Finally, there are a handful of research based PhD programs in related fields such as epidemiology, but these are research intensive rather than practice oriented programs.

Potential partnerships and linkages. The new School aspires to create new opportunities and linkages for sister departments, schools, and research centres within the Faculty of Applied Health Sciences and across campus. We aspire to expand existing and create new joint ventures in areas such as water and food safety and security, environmental aspects of health, work and health, leisure and health, and knowledge exchange. We aspire to create linkages with campus partners in areas such as health informatics (Computer Science), evaluation (SiG), digital media (Arts), health statistics (Statistics and Actuarial Science), the environment (Geography, Planning), social work and social development
(Renison). The school aspires to create new partnerships with public, private and non-profit sector agencies including regional health departments and integration networks, Ministries of Health, public agencies, non-profit organizations, and leading edge companies. Provided they create relevant and timely innovation and human resource capacity, we believe it may be possible to mutually leverage funds that build upon existing agreements with the Canadian Cancer Society, the Agfa Corporation, and others. The School will pursue new reciprocal agreements with universities and colleges (e.g., the University of Guelph) to share complementary resources, collaborate on projects and exchange students.

**Organization and accountability.** On a designated date (e.g., September 1, 2011), the School of Public Health and Health Systems would replace the Department of Health Studies and Gerontology as one of the three academic units within the Faculty of Applied Health Sciences. Collegial leadership within the School will come from a director (as per UW policy 40), four associate directors, as well as faculty member caucuses and standing committees. In order to provide research and training infrastructure in the most efficient way possible, and to facilitate interdepartmental and cross faculty collaboration, the School will develop a series of internal MOUs to support, affiliate with and create a limited number of research (new and existing) and service centres. A handful of new collaborations are expected to emerge, but the goal is to facilitate collaboration and improve resource efficiency in a manner that strengthens the institution and Faculty of Applied Health Sciences at large.

**Resources.** Initial resources will come from the Department of Health Studies and Gerontology. This includes 20 FTE regular faculty positions, plus one pending tenure track position, one FTE faculty position bridged to a retirement in 2012, and some definite term appointments. Collectively, this group has the necessary breadth of expertise required to maintain existing programs and start development of the proposed new programs and research themes. Existing resources also include four FTE staff and designated space and equipment in Burt Mathews Hall, and the Lyle Hallman Institute for Health Promotion. While the School has the necessary breadth of expertise, it lacks sufficient critical mass and capacity to fully implement the proposed expansions. The shared revenue generated from projected enrolment increases (in both domestic and international students) will cover the cost of adding at least nine regular full time faculty positions, three new full time staff positions, and other related costs (approximately $1.58 million for Faculty of Applied Health Sciences at full implementation plus additional funds for central administration in accordance with standard revenue sharing formulas).

Initially, two thirds of these positions would be required to develop new curricula and programs about 12 months before enrolment begins (especially those delivered online). The remaining positions would be phased in until enrolment targets have been met. To take advantage of graduate growth funds and generate interim revenue, admission targets in our MPH and BSc (co-op) programs were temporarily increased for September 2011 and will continue until arrival of students in the new professional masters programs can commence.

Our goal is to further enhance research and training capacity by seeking external agencies to jointly fund additional “professional practice faculty positions”. Faculty in these positions would spend a portion of their time working for UW and a portion working for/at the external agency. These are the public health equivalent of clinical faculty positions that are common in medicine. These joint professional faculty positions are not absolutely required to design and implement the program, but would provide us with important credibility, linkages to strategic partners, and capacity that will help lower student to faculty ratios. It is anticipated that external agencies would provide at least 50% of the costs, with the remainder coming from the Provost in the form of matching money. In return for their investment, external agencies might receive 30 to 40% of the person’s service time, as well as return on the 30% of time they spend on research directly related to the sponsoring agencies challenges. The remaining 30 to 40% would be dedicated to teaching, graduate supervision, and mentorship.

The School will also facilitate an increase in the number of faculty members who seek external funding awards. The relief money provided will be used to fund post doctoral fellows, visiting scholars, definite term appointments, and contract staff.
The Department of Health Studies and Gerontology's current allocated space can be re-organized to accommodate up to five new faculty and staff, after which we will need additional resources. Naming rights for the school, previous capital credits from graduate growth, applications for CFI, capital grants from the MTUC, and other opportunities will all be used to help fund and maintain a new, high profile, building to reduce acute shortages of classroom, research, graduate student, and administrative space across the Faculty of Applied Health Sciences. We expect that the distinctive features of the new School will make it attractive to prospective donors and friends of the university who want to join us in becoming positive change agents and transformers for health and education.

Since the vast majority of student growth is for online professional programs and undergraduate degrees, we will not require substantially new money for student funding (although some funds will be required for top ups, practicums, and other items) or student office space. Some funds will be set aside for other campus resources such as CEL to assist in the development of online courses, etc.

The full proposal includes detailed rationale, plans, as well as enrolment projections and budgets.

**Timelines and communication plan (2011).**

The proposal to transform the department received the unanimous support of the Department of Health Studies and Gerontology in June, 2010. Moreover, this proposal for a strategic and operational plan was overwhelming approved by the Department on February 22, 2011. Our next steps include:

- Formally distribute draft proposal to AHS faculty and staff – by March 7
- Discuss with AHS Faculty Council Executive on March 11
- Seek feedback from Dean’s Council on March 16
- Seek approval of AHS Faculty Council on March 25
- Distribute to Senate for May 16 meeting
- Distribute to Board of Governors for June 14 meeting
- Send media release to internal and external partners on June 8 (pending Board approval).
- Announcement at CPHA annual meeting June 19; Society for Epidemiology June 21
- Official transition from Department to School – September 1, 2011.
- Open house and public launch - October, 2011

This ambitious time line has been developed because (1) the Department’s existing BSc, MSc and PhD programs in the Department of Health Studies and Gerontology are due to be reviewed in 2012 (and we want to demonstrate that we are proactively dealing with challenges); the MPH is scheduled for review in 2013; we wish to seize what may be the final opportunity to secure “graduate growth” money from the province of Ontario; to quickly set ourselves apart from existing and emerging schools; to proactively address potential recruitment challenges; to enable the school to contribute to UW’s sixth decade plan as soon as possible; and to contribute as rapidly as possible to Canada’s training and innovation needs related to public health and health systems.

**Conclusion.** The new School of Public Health and Health Systems has been designed to improve the health of Canadians and populations by training professionals and researchers who can anticipate and transform the social, geographic, political, legal and economic structures, policies, and systems that facilitate or undermine population health and health services in Canada, and across the globe. The School will raise the bar on both the quality and quantity of public health and health systems research in Canada, making Canada and UW the place to go for solutions to national and global problems. It will set new standards for closer functional linkages between the university and public, non-profit and private sector partners. It will provide a platform to showcase, promote and commercialize leading edge products and ideas.
## University of Waterloo
### Capital Projects - Senate Update
#### May, 2011

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D. Huber
Introduction
The mission of the Centre for Teaching Excellence (CTE) is to foster teaching and learning of the highest quality at Waterloo. CTE currently employs 14 full-time staff, three part-time staff, four graduate students per term, and two undergraduate co-op students per term. This report provides an overview of CTE’s recent accomplishments, current challenges, and upcoming initiatives.

Recent Accomplishments

• **Tracking our work** – We piloted a new system for tracking our work with our client groups in the Fall 2010 and Winter 2011 terms. From September 1 to March 31, we provided 2,720 consultations to 869 faculty members, staff, and students. During this same time, we also held 77 events and had 1,782 registrations. We tracked the hits to our online resources and had more than 150,000 visits this past year, with almost 300,000 page views. Since September 2009, the number of visits to our webpages has nearly tripled. We have also been monitoring our work according to our strategic plan and have made excellent progress on our various projects and goals.

• **Expanding our curriculum work** – This past year, we added a new staff position to support this area and have run 46 departmental retreats and meetings to support the preparation of program reviews and curricular reforms. This number includes faculty-wide events in arts, science, and engineering. We are also seeing curriculum clients in our multi-day instructional programs, such as the Teaching Excellence Academy. With the increasing implementation of graduate degree level expectations and the requirement for course- and program-level learning outcomes for new programs, we anticipate that the demand for curricular support will only continue to increase.

• **New programming for graduate students and postdoctoral fellows** – As planned, we revised our well-known *Certificate in University Teaching* (CUT) program for graduate students and launched a pre-requisite *Fundamentals of University Teaching* program in January 2011. We had 22 more students complete the CUT this past year, with 93 active participants. The *Fundamentals* program has already had 17 completions so far in its first term. New instructional programming was also launched for postdoctoral fellows, with 19 participants completing the first offering.

• **Space** – Finding new office space was one of our key challenges expressed in last year’s report. We have plans to move our main offices to the 3rd floor of Environment 1 in August 2011. Our workshop space will be moving to the same building by Fall 2012.

• **International training** – We welcomed 20 faculty members from King Saud University for two weeks last July. We have now been asked to develop an international teaching certificate
program and have had interest from universities in Saudi Arabia and China to pursue further training with us. We plan to launch a new program next summer.

Current Challenges

- **Learning Management System (LMS) Transition** – The migration of approximately 2,500 courses over the next two years from UW-ACE to the new D2L platform will be a significant undertaking for our staff. We have been working on developing pedagogical training strategies and materials as well as common standards and templates to assist faculty members in moving to the new LMS. We are working very closely with Instructional Technologies and Multimedia Services and the Centre for Extended Learning to make this transition as smooth as possible, and we are looking forward to the opportunity to reconnect with faculty members about their course designs. An e-portfolio tool has also been purchased as part of the new LMS which will increase opportunities to implement it in more courses and programs, along with other integrative learning methods. The projected sheer volume of work in these areas will make it challenging to meet the requests from our many clients.

Upcoming Initiatives

- **New faculty training** – We have been asked to provide more extensive instructional support for new faculty members. To assist us with this task, we have recently released a survey to pre-tenure faculty members at Waterloo. The intent of the survey is to identify the best possible formats for instructional programming so that we can devise a program that will meet the needs of our faculty members. One key challenge at Waterloo is that new faculty members arrive continuously throughout the year, making one annual orientation event impractical. We anticipate that at least one new staff position will be required for us to deliver this program in addition to other key services that arise from our increasing efforts at the department level.

- **Innovative and scholarly teaching practices** – An eight-member task force will report in June on best practices and recommendations to promote the adoption of innovative teaching practices at Waterloo that promote deep approaches to student learning. CTE will be a key player in supporting the implementation of the recommendations. The task force membership includes one faculty member from each faculty and two staff members from CTE. To promote more scholarly teaching practices, this year’s *Opportunities and New Directions* conference will highlight the disconnect between existing research on effective teaching and learning and the practices typically applied in higher education. Two conference keynotes, a plenary session, and a Provost’s Forum for senior administrators will all challenge our campus community to consider how we can use and create the scholarship of teaching and learning.

Myriad opportunities exist to support the development of high quality teaching and learning at Waterloo; CTE could always do more if resources were available.

For more information about CTE’s various services and a staff listing, please visit our website at: cte.uwaterloo.ca or contact Donna Ellis, Director, at donnae@uwaterloo.ca