**University of Waterloo**

**SENATE**

**Notice of Meeting**

**Date:** Monday, October 18, 2010  
**Time/Place:** 4:00 p.m./Needles Hall, Room 3001

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### OPEN SESSION

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>4:00</td>
<td>Consent Agenda</td>
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</tbody>
</table>

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

1. Approval of the September 20, 2010 Minutes [enclosed]  
   - Page: 2, A1  
   - Action: Decision

2. Report of the Chair  
   - Recognition and Commendation  
   - Page: 2, A2  
   - Action: Information

   - Call for ‘University Professor’ Nominations  
   - Page: 2, A3-A14  
   - Action: Information

4. Reports from the Faculties (excluding environment)  
   - Page: 2, A15  
   - Action: Decision

5. Other Business  
   - Annual Performance Indicators [enclosed]  
   - Page: 2  
   - Action: Information

   - Approval of Degrees, Diplomas and Certificates [lists of graduands available at Senate]  
   - Page: 2, A16  
   - Action: Decision

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### Regular Agenda

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>4:05</td>
<td>Business Arising from the Minutes</td>
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| 4:10 | Report of the Chair  
   - Environmental Scan  
   - Page: 2  
   - Action: Information

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| 4:20 | Report of the Vice-President, Academic & Provost  
   - Report of the Associate Provost, Students Working Group  
   - Page: 2, A17-A27  
   - Action: Information

   - Report on Undergraduate Student Retention Issues, Opportunities and Initiatives  
   - Page: 2, A28-A47  
   - Action: Information

   - Student Success Office  
   - Page: 2  
   - Action: Information

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| 4:40 | Report of the Vice-President, External Relations  
   - Page: 2  
   - Action: Information

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| 4:50 | Report of the Vice-President, University Research  
   - Page: 2  
   - Action: Information

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| 5:00 | Reports from Councils  
   - Graduate & Research  
   - Page: 2, A48  
   - Action: Information

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<th>Time</th>
<th>Event</th>
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| 5:05 | Undergraduate  
   - Page: 2, A49-A64  
   - Action: Decision/Information

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<th>Event</th>
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<tr>
<td>5:15</td>
<td>Other Business</td>
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### CONFIDENTIAL SESSION

<table>
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| 5:20 | Approval of the September 20, 2010 Minutes [enclosed]  
   - Page: 2, A65  
   - Action: Decision

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Agenda/minutes posted to the Secretariat website: [www.adm.uwaterloo.ca/infosec/governance/senate.htm](http://www.adm.uwaterloo.ca/infosec/governance/senate.htm)
The Executive Committee met on October 4, 2010 and wishes to report as follows:

OPEN SESSION

Consent Agenda

2. REPORT OF THE CHAIR
   Recognition and Commendation. The committee agreed to forward this report to Senate for information.

3. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST
   Call for ‘University Professor’ Nominations. The committee agreed to forward this report to Senate for information.

4. REPORTS FROM THE FACULTIES
   The committee agreed to forward these reports to Senate for information.

5. OTHER BUSINESS
   Annual Performance Indicators. The committee agreed to forward this report to Senate for information.
   Approval of Degrees, Diplomas and Certificates. The committee understood that the standard motion would be put before Senate.
   Committee Appointments. Recommended to Senate for approval.

Regular Agenda

7. REPORT OF THE CHAIR
   Environmental Scan. The chair will report as appropriate.

8. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST
   Report of the Associate Provost, Students Working Group. The provost will report as appropriate.
   Report on Undergraduate Student Retention Issues, Opportunities and Initiatives. The provost will report as appropriate.
   Student Success Office. The associate provost, student services will coordinate this presentation.

9. REPORT OF THE VICE-PRESIDENT, EXTERNAL RELATIONS
   The associate vice-president, principal gifts and campaigns will report on behalf of the vice-president.

10. REPORT OF THE VICE-PRESIDENT, UNIVERSITY RESEARCH
    The vice-president will report as appropriate.

11. REPORTS FROM COUNCILS
    Graduate & Research. The committee agreed to forward this report to Senate for information.
    Undergraduate. The committee agreed to forward this report to Senate for approval and information as indicated.
Recognition and Commendation

Ten students from Waterloo were among 117 from across Canada (and three from Hong Kong) who took part in the “Rising Stars of Research” undergraduate poster competition held in mid-August at the University of British Columbia. Prizes were awarded in seven theme areas. An honourable mention in computational sciences and technology went to Waterloo student Peter Forbes (statistics & actuarial science) whose project was “ENTREE, A Personalized Recipe Recommendation Engine.”

The Research + Technology Park received an Excellence in Economic Development Award for its WATCH Magazine in the category of Magazines for communities with populations of 25,000 – 200,000 from the International Economic Development Council (IEDC). The honour was presented at an awards ceremony on September 28 during the IEDC Annual Conference. “We recognize the University of Waterloo Research + Technology Park for providing successful strategies to promote new paradigms in economic development in this period of global recovery,” said William Best, IEDC chair. “Our awards honor organizations and individuals for their efforts in creating positive change in communities. The University of Waterloo Research + Technology Park are showing that they are at the forefront of the economic development profession and are using innovative and effective practices that can be replicated in other communities.”
Memorandum

To: Members of Senate
    Chairs of Departments and Directors of Schools

Copy: Chris Redmond

From: Feridun Hamdullahpur, Vice-President, Academic & Provost

Re: Call for 'University Professor' Nominations

To date, UW has awarded this distinction to sixteen individuals: Garry Rempel, Mary Thompson and Mark Zanna in 2004; Terry McMahon, Cam Stewart and Robert Jan van Pelt in 2005; Phelim Boyle and Ian Munro in 2006; Ken Davidson, Keith Hipel and Jake Sivak in 2007; Roy Cameron and Flora Ng in 2008; Ellsworth LeDrew and Ming Li in 2009; Stuart McGill and Janusz Pawliszyn in 2010.

This memo is to remind you of the process [described below] which was established in 2003 when Senate approved the introduction of the 'University Professor' designation. You should also be aware that the University Tenure and Promotion Committee [i.e. the selection committee] decided when it considered the first round of nominations that the dossiers of unsuccessful nominees would remain in the pool for two additional years, with the understanding that the appropriate Dean would provide updated information each year.

Please ensure that nomination material is in my hands before Christmas.

UNIVERSITY PROFESSOR
The University of Waterloo owes much of its reputation and stature to the quality of its eminent professors. UW recognizes exceptional scholarly achievement and international pre-eminence through the designation 'University Professor'. Once appointed, a faculty member retains the designation for life.

Not counting retirees, it is anticipated there will be 14 University Professorships at steady state, with at most two appointments each year. Such appointments are reported to Senate and to the Board of Governors in March and April respectively, and are recognized at Convocation.

Selection Process
1. Annually, nominations will be sought from Deans, Directors and Chairs, as well as from the University community generally. A nominee shall have demonstrated exceptional scholarly achievement and international pre-eminence in a particular field or fields of knowledge. The individual who nominates a colleague is responsible for gathering the documentation and submitting it to the Vice-President, Academic & Provost. The University Tenure and Promotion Committee will act as the selection committee; its decisions are final.

2. A nomination must be supported by at least six signatures from at least two UW departments and must be accompanied by a curriculum vitae and a short, non-technical description of the nominee's contributions. A nomination must also be accompanied by letters from the nominee's Dean, and from at least two and no more than five scholars of international standing in the nominee's field from outside the University. The letter of nomination should explain why these particular scholars were chosen as referees. The referees should be asked to comment on the impact and specific nature of the nominee's most influential contributions, addressing their responses directly to the Vice-President, Academic & Provost.
FOR INFORMATION

A. APPOINTMENTS

Definite-term Appointment
KENNEDY, Ryan, Research Associate Professor, Department of Health Studies & Gerontology, Propel Centre for Population Health Impact, September 7, 2010 - August 31, 2013. Bachelor of Environmental Studies (1998), Master of Applied Environmental Studies in Local Economic Development (2001), PhD in Psychology (2010), University of Waterloo. Dr. Kennedy will be involved with the Propel Centre for Population Health Impact conducting research that improves chronic disease.

Visiting Appointment

Adjunct Appointments

Instruction
DIXON, Shane, Lecturer, Department of Kinesiology, January 1, 2011 - April 30, 2011.

Research & Graduate Committee Membership
CARPENTER, Mark, Assistant Professor, Department of Kinesiology, July 1, 2010 - June 30, 2011.

SPRIET, Lawrence, Professor, Department of Kinesiology, July 1, 2010 - June 30, 2013.

Adjunct Reappointment

Other
GREEN, Howie (Professor Emeritus), Department of Kinesiology, July 1, 2010 - June 30, 2011.

Cancelled Appointments
McAllister, Christina, graduate student part-time lecturer, Department of Recreation & Leisure Studies, January 1, 2011 - April 30, 2011.

LEE, Anne, graduate student part-time lecturer, Department of Recreation & Leisure Studies, January 1, 2011 - April 30, 2011.

Susan J. Elliott
Dean, Applied Health Sciences
FOR INFORMATION

A. APPOINTMENTS

Definite-term Reappointments

PACI, Timothy, Lecturer, Department of Drama & Speech Communication, December 31, 2010 to December 31, 2011.

PSUTKA, Donna, Lecturer, School of Accounting & Finance, September 1, 2010 to August 31, 2011.

ROBINSON, Linda, Lecturer, School of Accounting & Finance, September 1, 2010 to August 31, 2011.

SPROULE, Robert, Lecturer, School of Accounting & Finance, September 1, 2010 to August 31, 2011.

Adjunct Appointments

Instruction

IRVING, Michelle, Lecturer, Department of Fine Arts, September 1, 2010 to December 31, 2010.

PAULITZKI, Jeff, Lecturer, Department of Psychology, September 1, 2010 to December 31, 2010.

Graduate Supervision

ALMEIDA, Quincy, Associate Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

Adjunct Reappointments

Instruction

ABBOTT, William (Professor Emeritus), Associate Professor, Independent Studies, September 1, 2010 to December 31, 2010.

ANDRES, Greg, Lecturer, Department of Philosophy, September 1, 2010 to December 31, 2010.

BALLARD, Sarah, Lecturer, Department of Drama & Speech Communication, September 1, 2010 to December 31, 2010.

BURIC, Helena, Lecturer, Department of Germanic & Slavic Studies, September 1, 2010 to April 30, 2011.

CORNING, Gail, Assistant Professor, Department of Drama & Speech Communication, September 1, 2010 to December 31, 2010.

DAGG, Anne (Professor Emerita), Associate Professor, Independent Studies, September 1, 2010 to December 31, 2010.

DEMAN, Andrew, Lecturer, Department of English Language & Literature, January 1, 2011 to April 30, 2011.
DUCHARME, Robert, Lecturer, School of Accounting & Finance, September 1, 2010 to December 31, 2010.

ENNIS, Richard, Lecturer, Department of Psychology, September 1, 2010 to December 31, 2010.

GINGRICH, Nadine, Lecturer, Department of English Language & Literature, January 1, 2011 to April 30, 2011.

HARVIE, Jo, Lecturer, Department of Drama & Speech Communication, September 1, 2010 to December 31, 2010.

HARRIGAN, Patrick (Distinguished Professor Emeritus), Professor, Department of History, September 1, 2010 to December 31, 2010.

HILL, Heather, Lecturer, Department of Drama & Speech Communication, September 1, 2010 to December 31, 2010.

HORTON, Don (Professor Emeritus), Associate Professor, Department of History, September 1, 2010 to December 31, 2010.

KRELLER, Paul, Lecturer, Department of English Language & Literature, January 1, 2011 to April 30, 2011.

LIEBERMANN FINESTONE, Dana, Lecturer, Department of Psychology, September 1, 2010 to December 31, 2010.

MACDONALD, Christy, Lecturer, Department of Political Science, September 1, 2010 to December 31, 2010.

MANN, Shari, Lecturer, School of Accounting & Finance, September 1, 2010 to December 31, 2010.

MCARTHUR, Kathryn, Lecturer, Department of English Language & Literature, January 1, 2011 to April 30, 2011.

RAMAKRISHNAN, Vivek, Lecturer, Department of French Studies, September 1, 2010 to December 31, 2010.

SCHWEITZER, David, Assistant Professor, Department of History, September 1, 2010 to December 31, 2010.

SIEBEL-ACHENBACH, Sebastian, Assistant Professor, Department of History, September 1, 2010 to December 30, 2010.

STACEY, Jeffery, Lecturer, Department of Drama & Speech Communication, September 1, 2010 to December 31, 2010.

STUMPF, Andrew, Lecturer, Department of Philosophy, September 1, 2010 to December 31, 2010.

TELL, Edmond, Lecturer, Department of Drama & Speech Communication, September 1, 2010 to December 31, 2010.
WALPOLE, Ellen, Lecturer, Department of French Studies, September 1, 2010 to December 31, 2010.

WILDING, Ethan, Lecturer, Department of Philosophy, September 1, 2010 to December 31, 2010.

Graduate Supervision
BIELING, Peter, Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

FARVOLDEN, Peter, Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

GIFFORD, Shannon, Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

MACLEOD, Karen, Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

MCBRIDE, Carolina, Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

TOMAN, Philip, Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

Other
BLUM, Alan, Professor, Department of Sociology & Legal Studies, April 1, 2011 to March 31, 2016.

Staff to Faculty Appointment
SYKES, Susan (Office of Research), Assistant Professor, Department of Psychology, September 1, 2010 to August 31, 2011.

Graduate Student to Part-Time Lecturer Appointments
ANDERSON, Joanna, Department of Psychology, September 1, 2010 to December 31, 2010.

BOYD, Jennifer, Department of Psychology, September 1, 2010 to December 31, 2010.

CHRISTELIS, Angela, Department of Philosophy, September 1, 2010 to December 31, 2010.

CLARK, Amanda, Department of Psychology, September 1, 2010 to December 31, 2010.

EVANS, Natalie, Department of Philosophy, September 1, 2010 to December 31, 2010.

LAURIN, Kristin, Department of Psychology, September 1, 2010 to December 31, 2010.

LIAN, Huiwen, Department of Psychology, September 1, 2010 to December 31, 2010.

MACGREGOR, Jennifer, Department of Psychology, September 1, 2010 to December 31, 2010.

MCEWAN, Michael, Department of Philosophy, September 1, 2010 to December 31, 2010.

NADOLNY, Daniel, Department of Psychology, September 1, 2010 to December 31, 2010.
SOLCZ, Stephanie, Department of Psychology, September 1, 2010 to December 31, 2010.

B. ADMINISTRATIVE APPOINTMENT
WELCH, David, Professor, Department of Political Science, Interim Director of Balsillie School of International Affairs, May 21, 2010 to June 30, 2011.

C. SABBATICALS
For approval by the Board of Governors
BOIDO, Mario, Assistant Professor, Department of Spanish & Latin American Studies, January 1, 2011 to June 30, 2011 at full salary.

DENTON, Diana, Associate Professor, Department of Drama & Speech Communication, January 1, 2011 to December 31, 2011 at 85% salary.

KROEKER, Greta, Assistant Professor, Department of History, January 1, 2011 to June 30, 2011 at full salary.

PRUS, Robert, Professor, Department of Sociology & Legal Studies, January 1, 2011 to June 30, 2011 at 85% salary.

Ken S. Coates
Dean, Faculty of Arts
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Appointments

GARG, Siddharth, Assistant Professor, Department of Electrical & Computer Engineering, September 15, 2010 – June 30, 2013. PhD Carnegie-Mellon University, Pittsburg, PA (2009); MS Stanford University (2005); BTech Indian Institute of Technology, Madras, India (2004). Dr. Garg worked as a postdoctoral researcher at Carnegie-Mellon University and pursued research in dynamic voltage and frequency scaling algorithms for power and performance optimization. His research work has appeared in highly competitive conference proceedings and journals.

SMITH, Stephen, Assistant Professor, Department of Electrical & Computer Engineering, March 1, 2011 – June 30, 2014. PhD University of California (2009); MASc University of Toronto (2005); BSc Queen’s University (2003). Dr. Smith is currently a Postdoctoral Associate with the Computer Science & Artificial Intelligence Lab at the Massachusetts Institute of Technology. His main research interests lie in the control of autonomous systems, with a particular emphasis on robotic motion planning and distributed coordination.

Probationary-term Reappointments

CHEN, Zhongwei, Assistant Professor, Department of Chemical Engineering, July 1, 2011 – June 30, 2014. PhD University of California (2007); MS East China University of Science & Technology (2002); BS Nanjing University of Technology (1996).

GU, Frank, Assistant Professor, Department of Chemical Engineering, July 1, 2011 – June 30, 2014. PhD Queen’s University (2005); BSc Trent University (2001).

ZHAO, Boxin, Assistant Professor, Department of Chemical Engineering, July 1, 2011 – June 30, 2014. PhD McMaster University (2004); MEng Chinese Academy of Sciences, Beijing, PRC (1999); BEng Central South University of Technology, Changsha, PRC (1996).

Definite-term Reappointment


Visiting Appointments

AGHAMIRI, Seyed F., Scholar, Department of Chemical Engineering, August 12, 2010 – May 12, 2011.


HUBAUX, Arnaud, Scholar, Department of Electrical & Computer Engineering, October 1, 2010 - September 30, 2011.

KARIMI, Gholamreza, Scholar, Department of Mechanical & Mechatronics Engineering, September 1, 2010 – April 30, 2011.
LI, Rong, Scholar, Department of Chemical Engineering, August 21, 2010 – August 20, 2011.

MASOOD, Fartha, Scholar, Department of Chemical Engineering, October 15, 2010 – April 14, 2011.

OHADI, Seyed, Scholar, Department of Chemical Engineering, October 1, 2010 – December 31, 2010.

PIYA-AREETHAM, Pornlert, Scholar, Department of Chemical Engineering, September 1, 2010 – August 31, 2011.


WEBER, Kela, Scholar, Department of Chemical Engineering, September 1, 2010 – December 31, 2010.

Visiting Reappointment
SHOKOUHI, Shahriar, Professor, Department of Systems Design Engineering, October 21, 2010 – October 20, 2011.

Adjunct Appointments
Instruction
AL-MAYAH, Adil, Lecturer, Department of Civil & Environmental Engineering, September 1, 2010 – December 13, 2010.

CARTER, David, Associate Professor, Conrad Centre for Business, Entrepreneurship and Technology, September 1, 2010 – June 30, 2011.


HULLS, Carol, Lecturer, Department of Mechanical & Mechatronics Engineering, September 1, 2010 – December 31, 2010.

MANNING, Thomas, Lecturer, Department of Management Sciences, September 1, 2010 – December 31, 2010.

MCCLELLAN, Chris, Lecturer, Department of Management Sciences, September 1, 2010 – December 31, 2010.

MUSSON, Brian, Assistant Professor, School of Architecture, September 1, 2010 – December 31, 2010.

MUSTAFA, Ibrahim, Lecturer, Department of Chemical Engineering, September 1, 2010 – December 31, 2010.

OSTROWSKI, James, Lecturer, Department of Management Sciences, January 1, 2011 – August 31, 2011.
ROSE, Teresa, Lecturer, Department of Management Sciences, September 1, 2010 – December 31, 2010.

SHEHATA, Shady, Lecturer, Department of Electrical & Computer Engineering, September 1, 2010 – December 31, 2010.

WRIGHT, Derek, Lecturer, Department of Electrical & Computer Engineering, September 1, 2010 – December 31, 2010.

Research & Graduate Supervision
ENDRIZZI, Stefano, Researcher, Department of Civil & Environmental Engineering, August 31, 2010 – July 31, 2012.

LEVESQUE, Moren, Associate Professor, Department of Management Sciences, August 1, 2010 – August 31, 2012.

Graduate Supervision
SCHARCANSKI, Jacob, Associate Professor, Department of Systems Design Engineering, October 1, 2010 – September 30, 2012.

YAGAR, Sam, Professor, Department of Civil & Environmental Engineering, September 1, 2010 – August 31, 2012.

Cross Appointments
GRIERSON, Don (Professor Emeritus), Professor, Department of Civil & Environmental Engineering to Department of Mechanical & Mechatronics Engineering, August 1, 2010 – July 31, 2013.

GU, Frank, Assistant Professor, Department of Chemical Engineering to Department of Biology, Faculty of Science, August 1, 2010 – July 31, 2013.

NAZAR, Linda, Professor, Department of Chemistry, Faculty of Science to Department of Electrical & Computer Engineering, May 1, 2010 – April 30, 2013.

Cross Reappointment
DUSSEault, Maurice, Professor, Department of Earth & Environmental Sciences, Faculty of Science to Civil & Environmental Engineering, July 1, 2010 – June 30, 2012.

Graduate Student to Part-time Lecturer Appointments


IVKOVIĆ, Igor, Department of Management Sciences, September 1, 2010 – December 31, 2010.

NAOUM-SAWAY, Joe, Department of Management Sciences, September 1, 2010 – December 31,
2010.


Postdoctoral Fellow to Part-time Lecturer Appointment
ALEMOHAMMAD, Hamid, Department of Mechanical & Mechatronics Engineering, September 1, 2010 – December 31, 2010.

B. RESIGNATION
KHAMIS, Alaa, Visiting Research Associate, Department of Electrical & Computer Engineering, September 25, 2010.

C. SABBATICAL
   For approval by the Board of Governors
CRONIN, Duane, Associate Professor, Department of Mechanical & Mechatronics Engineering, May 1, 2011 – April 30, 2012 at 85% salary.

JEWKES, Beth, Professor, Department of Management Sciences, November 1, 2010 – October 31, 2011 at 100% salary.

ONAY, Selcuk, Assistant Professor, Department of Management Sciences, November 1, 2010 – April 30, 2011 at 100% salary.

Adel Sedra
Dean, Faculty of Engineering
A. APPOINTMENTS

Definite-term Appointment

FREELAND, Keith (BSc, 1990, University of Calgary; PhD, 1998, University of British Columbia), Lecturer, Office of the Dean of Mathematics, September 1, 2010 – August 31, 2012. Dr. Freeland will teach six courses per year, participate in course and program development as well as student advising and other activities in support of the Mathematics and Business Program.

Visiting Appointments


Adjunct Appointments

Instruction


Adjunct Reappointments

Instruction

KIERSTEAD, Caroline, Lecturer, David R. Cheriton School of Computer Science, September 1, 2010 – December 31, 2010.


Research


Postdoctoral Fellow to Part-time Lecturer Appointment


B. ADMINISTRATIVE APPOINTMENT

WATROUS, John, Associate Director, Undergraduate Studies, David R. Cheriton School of Computer Science, July 1, 2009 – June 30, 2011.

C. SABBATICALS

For approval by the Board of Governors

CAI, Jun, Associate Professor, Department of Statistics & Actuarial Science, January 1, 2011 – June 30, 2011 with 100% salary.

KIM, Joseph Hyun Tae, Assistant Professor, Department of Statistics & Actuarial Science, January 1, 2011 – June 30, 2011 with 100% salary.

Ian P. Goulden, Dean
FOR INFORMATION

A. APPOINTMENTS

Definite-term Reappointment

SMITH, Marilyn S., Lecturer, School of Optometry, May 1, 2011 to April 30, 2016.

Adjunct Appointments

Undergraduate Instruction

DAMASKINOS, Savvas, Lecturer, Faculty of Science, September 1, 2010 to December 31, 2010.

NAKHLA, Nardine, Lecturer, School of Pharmacy, September 1, 2010 to December 31, 2010.

RICHARD, Cynthia, Lecturer, School of Pharmacy, September 1, 2010 to December 31, 2010.

Graduate Supervision and Research

BOYD, Shelley R., Assistant Professor, Department of Physics & Astronomy, July 1, 2010 to June 30, 2013.

HEWITT, L. Mark, Assistant Professor, Department of Biology, October 1, 2010 to September 30, 2013.

SCHUSTER, Phillip C., Associate Professor, Department of Physics & Astronomy, September 1, 2010 to August 31, 2015.

TORO, Natalia, Associate Professor, Department of Physics & Astronomy, September 1, 2010 to August 31, 2015.

Research

HOWELL, E. Todd, Associate Professor, Department of Biology, November 1, 2010 to October 31, 2013.

WANG, Jianhua (Jay), Associate Professor, School of Optometry, August 1, 2010 to July 31, 2013.

Adjunct Reappointments

Graduate Instruction and/or Supervision and Research

deHART, Pieter A.P., Assistant Professor, Department of Biology, October 1, 2010 to September 30, 2013.

GOTTESMAN, Daniel, Lecturer, Department of Physics & Astronomy, May 1, 2010 to April 30, 2015.

GUILDFORD, Stephanie J., Associate Professor, Department of Biology, September 1, 2010 to August 31, 2013.

HARDY, Lucien, Associate Professor, Department of Physics & Astronomy, May 1, 2010 to April 30, 2015.

SMOKOROWSKI, Karen E., Assistant Professor, Department of Biology, October 1, 2010 to September 30, 2013.
Undergraduate Instruction

DEAKIN, Laura, Lecturer, Department of Chemistry, September 1, 2010 to December 31, 2010.

FRIND, Emil (Distinguished Professor Emeritus), Lecturer, Department of Earth & Environmental Sciences, September 1, 2010 to December 31, 2010.

GILBERT, Dara, Lecturer, Department of Chemistry, September 1, 2010 to April 30, 2011.

Cross Reappointment

JONES, Lyndon, Professor, School of Optometry, cross appointed to Department of Biology, October 1, 2010 to September 30, 2013.

B. ADMINISTRATIVE APPOINTMENT

HUDSON, Michael, Associate Dean, Computing, Faculty of Science, September 1, 2010 to August 31, 2013.

C. SABBATICAL

For approval by the Board of Governors

TANG, Xiaowu (Shirley), Assistant Professor, Department of Chemistry, January 1, 2011 to June 30, 2011, 100% salary arrangements.

T.B. McMahon
Dean
Approval of Degrees, Diplomas and Certificates

Motion:
That Senate approve the lists of candidates for degrees, diplomas and certificates as recommended by the faculty councils and the associate provost, graduate studies, and that Senate authorize the chair, the registrar and the associate provost, graduate studies to add to or change the lists of candidates for degrees, diplomas and certificates as approved at the meeting on October 18, 2010.
FOR APPROVAL

Committee Appointments

Motion:

That Senate approve the following appointments:

- **Finance Committee.** Luke Burke (arts), replacing Muhammad Ali Akbar, as undergraduate student representative, term to April 30, 2011.

- **Long Range Planning Committee.** Bradley Moggach (president, Federation of Students), replacing Steve Krysa, as undergraduate student representative, term to April 30, 2011.
Report of the  
Associate Provost, Students Working Group  
June 10, 2010

Working Group Members

Allan Babor, Meg Beckel, Mario Coniglio, Mike Makahnouk, Janet Passmore, Bud Walker, Roger Mannell (Chair), Bruce Mitchell, Deep Saini, Bud Walker

Working Group Terms of Reference

1. Conduct a broad review of student service functions at the University of Waterloo and recommend a new or modified structure for the student services portfolio.

2. Develop a position profile and job description for Associate Provost, Students.

Vision: An Emphasis on Student Success

The vision is for student services at the University of Waterloo to foster and support a “student-centred environment” to ensure student success. Student success is broadly defined as retention, graduation and educational attainment (Kuh et al., 2005). Successful students persist, benefit in desired ways from their university attendance, have a satisfying university experience and graduate (Manning et al., 2006). At Waterloo, student services include a broad range of activities and programs that are supported and managed by a number of units in the central University administration, the six Faculties and the affiliated university colleges. Underlying the vision for student services is the expectation that current services and future service innovations should be comprehensive, coherent and well coordinated.

Approach

The recommendations in this report and the proposed Associate Provost, Students’ position profile were guided by the above vision and informed by the experience and current responsibilities of the working group’s members and existing Waterloo documents including the Sixth Decade Plan (2007), Beyond the Classroom: Living-Learning Project Report (2005) and Student Engagement Task Force Report (2008). Also, various reviews of student services’ practices and models were examined, including Manning et al.’s (2006) book on traditional and innovative models of student services’ practice, gathered from universities in Canada and the United States. Other information available to the working group included a summary and overview of Waterloo’s student service functions and their organizational location and an inventory of initiatives that currently exist centrally and in the six Waterloo Faculties for promoting student success and retention. The inventory was completed by Bud Walker. Also, Bud, in his role as Interim Associate Provost, Student Services, organized a workshop.

1 The title “Associate Provost, Students” has been used throughout this document. A number of people, including some members of the working group, feel that the removal of the word “services” places the focus where it should be, that is, on student outcomes and not services, which, themselves, are only a vehicle for the support of a student-centred environment.
involving Waterloo student services staff to gather information on the extent to which Waterloo student service areas are student centred or success oriented and to obtain views on developing a student success approach. A report on the outcomes of this workshop was prepared for the working group by Ron McCarville. Information was also provided by Career Services and Aboriginal Student Services at St. Paul’s.

This report primarily deals with services and supports for undergraduate students who complete the majority of their academic programs at the University of Waterloo’s main and satellite campuses. Services for students who are for the most part involved in extended learning and for graduate students also will need to be reviewed and further enhanced.

**Context**

The Sixth Decade Plan creates expectations that the University community will foster conditions that will “distinguish” Waterloo. In particular, it is expected that Waterloo will strive to increase the “quality of the student experience and learning through deeper integration of experiential learning” as well as “support services to enhance the quality of student life and the formation of strong alumni links with Waterloo.” Developing a student success culture is central to improving the quality of the student experience. All members of the university community share responsibility for student success. Student success refers to what is often called the development of the “whole student.” The goal is to positively influence Waterloo students’ character as much as their academic knowledge and skills, and their emotional well-being as well as their grade point average.

Various factors are driving the need for a student-centred or student-success approach besides the Sixth Decade Plan’s general directive to enhance the quality of student life. There is growing awareness of the need to increase students’ satisfaction with their experience at Waterloo, improve student retention rates, effectively compete with other educational institutions in attracting high quality students and adapt to students’ changing needs. In the case of changing needs, Waterloo attracts an increasingly culturally diverse student body that needs support. In addition to these factors, the Sixth Decade Plan identifies the need to increase the engagement of alumni with the University – a positive relationship is known to exist between a student success orientation and the maintenance of life-long connections with alumni.

Organizationally, student services that contribute to an effective student success orientation should have the following characteristics: (1) integrated – it must involve all the elements that comprise student life at the university (academic and non-academic); (2) flexible – student service provision should facilitate a dynamic setting in which creative and adaptive responses to student needs occur; (3) timely – efforts to enhance student success should quickly and effectively respond to student needs as they arise and begin with the very first contacts with students and continue after they have graduated; (4) supportive – the emphasis should be on meeting the needs of the various student groups and while doing so satisfy administrative and program requirements; and (5) quality driven – the goal should be to offer services in a manner consistent with the principles of service quality (empathy, responsiveness, reliability, etc.).

To make the student success vision a reality, some restructuring of existing student services will be required and some new services will need to be developed. Also, an Associate Provost, Students (APS) is
required who shares this vision and can act as its champion. This individual must be able to work effectively with other people and units at Waterloo with student service functions to achieve the vision.

Current Organizational Structure for Student Services

Many student services are located in the central administration in Academic and Student Affairs (see Appendix 1), Student Services, and University Business Operations. However, student-related services are also managed by the six Faculties and by other units in the central Waterloo administration under the direction of the Associate Provosts of Human Resources (e.g., student leadership development) and Information Systems and Technology (e.g., student computing), the Secretary of the University (e.g., parking and policing), and Associate Vice-President, Academic (Writing Clinic, Centre of Extended Learning, Centre for Teaching Excellence, WATPORT, Undergraduate Program Reviews) and Associate Vice-President, International (e.g., Waterloo International).

The Student Services portfolio is overseen by an Interim Associate Provost, Student Services who also oversees the University Business Operations portfolio (see below). These portfolios include services that for the most part are important student services. Also, included and labelled “governance” areas are committees of which the Interim Associate Provost is a member and that provide coordination of service/service/university business functions with student service functions located in other Waterloo units.

1. Current Departments/Units

a. Current Student Services

i. Athletics and Recreational Services
ii. Health Services
iii. Counselling Services
iv. Office of Persons with Disabilities
v. Theatre Centre
vi. Day Care Centres
vii. Student Life Office (is currently being transformed into a unit that will address student success through a significantly enhanced new-student transition program, service learning, parent programs, engagement initiatives, faculty mentorship programs, leadership training, and other purposeful student engagement activities)

b. Current University Business Operations

i. Housing and Residences
ii. Food Services
iii. Retail Services
iv. WatCard Office

c. Services Co-Managed with FEDS

i. Campus Bar Operations
ii. Student Life Centre
iii. Student Resource Office
2. Current Governance Areas

a. Oversight of student issues, policy, initiatives and government (FEDs & GSA)
b. Chairing of committees on student technology, alcohol management, food, LGBTQQ, AODA, transition etc.
c. Membership or oversight with respect to a number of governance bodies (Athletics Advisory Board, Res Council, Town & Gown committee, student relations committees, SSAC, and several ongoing student committees)
d. Executive Council

Reorganization and Development of the APS Portfolio

It is recognized that some of the essential characteristics (i.e., integration, flexibility, timeliness, supportive and quality) necessary for an effective student success structure are not present to the extent that they need to be because of the:

1. centralized and decentralized nature of Waterloo's structure and challenges of coordination;
2. distributed nature of the centralized student services and functions; and
3. lack of recognition of the importance of a student success orientation and culture for the overall health and reputation of Waterloo.

As an initial step in restructuring and reorganizing student services, a number of changes can be made immediately. However, further restructuring and reorganization of student services will be required as Waterloo builds its student success orientation and capacity and the Waterloo community comes to appreciate and support the development of a student success culture. Underlying this process of restructuring and reorganization, a “recruitment to being an alumnus lifecycle” approach should be taken that ensures that the student-centred focus begins with student recruitment and extends throughout the student experience to graduation and beyond.

It is recommended that an immediate restructuring and reorganizing involve: (1) creating a new Office of Student Success as part of the APS portfolio; (2) identifying those existing Student Service departments, units and programs, and those departments, units and programs from other areas that will report to this Office; (3) reviewing student service functions and developing plans for new services that should eventually be part of the APS portfolio; and (4) arranging for improved governance structures to enhance collaboration and coordination between student service/success units that will not immediately or ever become departments/units/programs in the APS portfolio. Regarding this latter point, strategies to ensure effective coordination between units and functions must be developed whether they report to the new APS or are located in Faculty or other central administrative units. Important and valuable contributions are made by these services but one of the significant challenges can be lack coordination. The restructuring and reorganization will assign substantial authority to the APS but this individual will have to work closely with those involved with student services, programs and activities across the University. Consequently, a governance model should link the APS to all student service functions either through a direct and indirect reporting structure within the APS portfolio or indirectly through appropriate coordinating governance committees to student service functions in other units outside the APS portfolio.
The proposed structure and governance arrangements for the APS portfolio are describe below. The organizational chart can be found in Appendix 2. Also identified and discussed are several units, functions or services that will need further review before a decision is made about relocating them to the APS portfolio.

1. Departments/Units/Programs

   a. The departments, units and programs that currently report to the Interim Associate Provost, Student Services should be included in the APS portfolio. The larger APS portfolio will need additional resources and a new support structure, which would include the creation of an Office of Student Success and the hiring of a Director of this Office who would report to the APS.

   In the new Office of Student Success, the programs and services listed below as items i. to v. should be included when the Office is created while services vi. and vii. require further study and discussion before a recommendation is made². Items viii. to xii. are examples of programs and services being developed or planned and could be located in the Associate VP Academic, Associate Provost Academic and Student Affairs or the APS portfolios³.

   i. Transition (start-up skills, bridge programs, transition programs, parent programs)
   ii. Learning support (supplemental instruction, advising, tutoring, study skills)
   iii. Student Development (leadership, mentorship, co-curricular record)
   iv. Entrepreneurship (centre & programs, Velocity)
   v. Applications management (student portal, mobile apps, incident/alert system)
   vi. Career services (currently AP Academic and Student Affairs)
   vii. International student support (currently AP International)
   viii. Bridge programs (possibly Student Success Office)
   ix. Central advising (possibly Student Success Office)
   x. Central tutoring (possibly Student Success Office)
   xi. Learning skills development (possibly Associate VP Academic)
   xii. Learning communities (possibly Associate VP Academic)

   b. A “Student Success Centre” is currently being promoted to the student leaders for their support. It would be a physical centre in a new building integrating many of the student support areas into a one-stop concept for career/academic advising, tutoring, supplemental instruction, counselling, entrepreneurship, transition, disability/accessibility support, study space, English skills, learning skills, development skills, technology support, a campus job centre and graduate student facilities. It should report to the Office of Student Success.

---

² Career Services and Waterloo International (the student support functions) could become part of the Student Success Office. It is very difficult to disentangle the academic and support roles for Waterloo International and it may be more useful for it to be in the unit overseen by the Associate VP International. However, the student support functions in Waterloo International would benefit from more formal linkage with the APS portfolio to offer more effective services and support to international students including recruitment.

³ Other possible student services that could be developed have been identified such as an Office of Student Advocacy.
Report of the Working Group on Associate Provost Student Services

c. An integrated “wellness” unit formed by combining Health Services, Counselling and the Office for Persons with Disabilities eventually should be created. In the meantime, they will each report independently to the APS.

d. Some retention initiatives could become part the Student Success Centre.

2. Governance areas

a. Governance structures such as the Student Relations Committee and Student Services Advisory Committee already exist and both are under the Associate Provost, Academic and Student Affairs. The APS should be a member of these committees.

b. There should be new student services/success committees to provide oversight for student entrepreneurship and the proposed Student Success Centre.

Position Profile/Job Description for the New Associate Provost Students

Based on the above recommendations for the development of a student-centred or student-success oriented culture at Waterloo and the recommendations for the immediate as well as possible future restructuring of student services and the creation of a Student Success Office, a position profile was drafted (see Appendix 3) for the type of individual needed to provide leadership to guide and facilitate these developments.

References


Appendix 1

Associate Provost, Academic and Student Affairs Portfolio

1. Departments/Units

   a. Registrar’s Office (includes student awards, undergrad recruitment, etc.)
   b. Library
   c. Co-operative Education and Career Services
   d. WatPD
   e. Academic Integrity Office
   f. Space

2. Governance Areas

   a. Faculty Relations
   b. Staff Relations and Compensation
   c. Student Relations committees
   d. Student Services Advisory Committee
   e. Senate membership
   f. Other areas where Associate Provost is involved in governance on the academic side – Deans Council, Executive Council, Aboriginal Programs at St. Paul’s, Chairs Forum, etc.
Appendix 2

Organizational Chart for the Proposed Associate Provost, Students Portfolio
<table>
<thead>
<tr>
<th>Student Facilities**</th>
<th>Student Success Office</th>
<th>Committe Oversight</th>
<th>Committee Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS support</td>
<td>Transition</td>
<td>Transition steering/mngt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academic skills start-up</td>
<td>STAC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advising/counselling</td>
<td>Alcohol &amp; Education</td>
<td></td>
</tr>
<tr>
<td>Buildings/Space</td>
<td>Bridge programs</td>
<td>Food Advisory Board</td>
<td></td>
</tr>
<tr>
<td>SLC</td>
<td>Culture change awareness/support</td>
<td>Diversity awareness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parent programs</td>
<td>Wellness Management (new)</td>
<td></td>
</tr>
<tr>
<td>Student Success Ctr Building</td>
<td>High school to university programming</td>
<td>Athletic Advisory Board</td>
<td></td>
</tr>
<tr>
<td>Student non-academic space</td>
<td>Welcome week/orientation</td>
<td>Residence council</td>
<td></td>
</tr>
<tr>
<td>Theatre Centre</td>
<td>Social acclimatization support</td>
<td>SLC Management Board</td>
<td></td>
</tr>
</tbody>
</table>
| Watcard             | Info & orientation re: services | Ad Hoc Committees:
|                     | Fall term transition courses |   - Buildings/student space |
|                     | Entrepreneurship        |   - Student policy, initiatives & issues |
|                     | Centre for entrepreneurship |   - Entrepreneurship (new) |
|                     | Entrepreneurship programs |   - Success Ctr Board (new) |
|                     | Velocity                |   - AODA |
|                     | Student Applications Management |   - Orientation |
|                     | Portal                  |                   |
|                     | Mobile, learning and web apps |               |
|                     | Incident system (alert system) |             |
|                     |                         |                   |
|                     |                      |                   |
|                     |                      |                   |

*Associate Provost, Student*

<table>
<thead>
<tr>
<th>Wellness</th>
<th>Housing &amp; Residences</th>
<th>Food Services</th>
<th>Athletics &amp; Rec</th>
<th>Retail Services</th>
<th>Student Facilities</th>
<th>Student Success*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Services</td>
<td>Counselling Services</td>
<td></td>
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</tr>
</tbody>
</table>

**Two new positions are proposed: Associate Provost, Students; Director, Student Success Office.**

**These units are to be implemented in 2011/12. Until then, Health Services, Counselling, OPD, WatCard, Theatre Centre, SLC and daycare will continue to report directly to the AP Students.**

***Subject to further examination and discussion, these are potential units in the SSO.**

Note: Units shaded in grey above have no relevant change from their current function.
Appendix 3
Draft Position Profile

University of Waterloo
Associate Provost, Students

The Opportunity

The University of Waterloo is seeking an outstanding leader for the position of Associate Provost, Students. Known as Canada’s most innovative university and home to the world’s largest post-secondary co-operative education program, Waterloo is committed to providing a holistic, student-success oriented learning environment in the context of its pursuit of global excellence. The new Associate Provost will play a key role in the realization of these ambitions.

The University

Located in the Waterloo Region of Ontario and in the heart of Canada’s Technology Triangle, the University of Waterloo has become one of Canada’s leading comprehensive research universities with 23,100 full-time undergraduate, 1700 part-time undergraduate students, 3,300 full-time graduate students, and 670 part-time graduate students from more than 100 countries. Through the co-operative education program, opportunities are provided for students to experience the symbiotic benefit of academics integrated with practical public and private sector work experience. Waterloo has developed a reputation for producing leaders of tomorrow through the excellence and relevance of its undergraduate and graduate education in both co-operative and regular programs delivered through six Faculties: Applied Health Sciences, Arts, Engineering, Environment, Mathematics and Science. Waterloo also has strong relationships with its federated and affiliated university colleges: St. Jerome’s University, Conrad Grebel University College, Renison University College, and St. Paul’s University College. Founded in 1957, the University’s 1000-acre Waterloo campus remains the hub, with campuses now in the neighbouring cities of Cambridge and Kitchener and the United Arab Emirates, and plans for a campus in Stratford. There are 977 faculty and 2,277 staff at Waterloo.

The Position

As the chief student services officer for the University of Waterloo, the Associate Provost, Students (APS) will provide vision, leadership and strategic direction for all the departments, units and programs in this portfolio dedicated to creating and maintaining an institutional climate fostering student learning and development for an increasingly diverse student body. The APS has overall responsibility for developing and implementing the strategic vision for student life and student services at Waterloo as well as administering these services. This vision requires the APS to serve as a steward of the quality of student life and to provide leadership to enhance the student learning environment to ensure a total educational experience and the development of student personal growth. The goal is to promote student success, that is, the development of the “whole student” by positively influencing Waterloo’s students’ character as much as their academic knowledge and skills, and their emotional well-being as well as their grade point average. The APS advises senior administration on issues and policies related to student life, including dealing with students in crisis, non-academic misconduct by students, and the ongoing development of a student code of conduct. The position also requires the maintenance of ongoing, excellent working relationships with leaders of student government and business acumen as
the APS has ultimate responsibility for an 80 million dollar budget and works with the Federation of Students concerning student fees, culture and policies and procedures. The APS will also work closely with the Associate Provost, Graduate Studies to meet the needs of graduate students.

The APS will provide oversight of the following areas: Student Success Office, Athletics and Recreational Services, Health Services, Counselling Services, Office of Persons with Disabilities, Housing and Residences, Food Services, Retail Services, WatCard Office, Theatre Centre and Day Care Centres as well as co-managing with the Federation of Students Campus Bar Operations, Student Life Centre and Student Resource Office. Further, the APS will be responsible for student leadership development, crisis and risk management, communications, financial and resource management, the advancement of diversity and inclusion, and student advocacy. The successful candidate will strive to achieve Waterloo’s goals, as articulated in its Sixth Decade Plan, by developing and implementing collaborative working relationships. The APS reports to the Vice-President Academic and Provost and serves as a member of the University’s Executive Council.

The Candidate Qualifications

Waterloo seeks a distinguished, proactive, and visionary candidate with: a vision for and strong commitment to a quality student experience in a large, public, residential, research university; a record of progressive executive leadership in an academic setting; excellent communication skills; an understanding of the major issues facing today’s university students; experience applying best practices and addressing a wide range of business, administrative, and legal issues in post-secondary education and student services; experience managing professional staff and significant financial resources; successful collaborative experiences with key constituencies including students, faculty, staff, and community partners; experience in the development and implementation of various student and emergency protocols; collaborative experiences with academic units that have facilitated co-curricular student learning experiences; a commitment to and demonstrated experiences with diversity and inclusion as an integral component of a quality university experience; and strong leadership and administrative skills including planning and evaluation, budgeting, personnel management, fundraising, assessment, and facilities management. The successful candidate will have a demonstrated awareness of the range of student services structures in use in post secondary education today. A graduate and/or a professional degree are the preferred credentials, but the search committee will consider other backgrounds.

The Appointment

The new Associate Provost’s 5-year appointment will commence on ??????, or as soon as possible thereafter, and may be renewed. The Search Committee will begin consideration of candidates in September 2010. Nominations and applications, including relevant qualifications and accomplishments, should be submitted in confidence to the address shown below.

Waterloo respects, appreciates and encourages diversity. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents, but nominations and expressions of interest are invited from any qualified member of the global community. Also, please see www.hr.uwaterloo.ca.

All inquiries regarding this position will be treated in strict confidence and should be directed to...
UNDERGRADUATE STUDENT RETENTION ISSUES, OPPORTUNITIES AND INITIATIVES

William Chesney
Mario Coniglio
Wayne Loucks
Geoff McBoyle
Ron McCarville
David McKinnon
Bruce Mitchell
Mark Seasons

UNIVERSITY OF WATERLOO

30 April 2010
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SUMMARY

The University of Waterloo ranks behind Queen’s, Western, Toronto, Guelph and Wilfrid Laurier University in retaining students between first and second year. As a result, it is recommended that Waterloo aim to improve its overall comparative retention rate of 89% in 2008-2009 of first year students to 90%, and then systematically increase it to 93%. A retention rate of 93% would place Waterloo second behind Queen’s in the Province of Ontario.

Retention is a complex matter, and no single approach or solution will improve retention. Rather, best practice requires a mix of coordinated and collaborative initiatives by both central units and Faculties.

The committee recommends that central units of Waterloo in 2010-2011 take action to: (1) improve provision of accurate and realistic information about support services to undergraduate students; (2) provide a one-stop portal service, especially to help students who decide to change academic programs; (3) ensure specific needs of international visa students are identified, and appropriate support is available; and, (4) initiate exit interviews for all students who leave Waterloo before completing a degree, as well as for a sample of students who graduate from Waterloo, to inquire about issues that challenged or supported their retention.

The committee also recommends that Faculties in 2010-2011 take action to: (1) improve provision of accurate and realistic information about Faculty-specific support services to their undergraduate students. This will require coordination with central units providing other information; (2) introduce early warning and intervention initiatives to identify and help students at risk in their academic programs; and (3) facilitate a student-focused learning environment, including enhanced student engagement. A key component will be to provide more and enhanced mentoring, by faculty, staff and senior undergraduate students.

Finally, the committee recommends that Waterloo needs to give attention to: (1) developing capacity for routinely monitoring progress related to retention; (2) designating responsibility for oversight for retention management; (3) determining incremental resources required to allow enhancement of existing support or introduction of new support activities; and (4) designing specific activities to deal with retention issues.
1. **INTRODUCTION**

An Undergraduate Student Retention Committee was created by the Vice President Academic and Provost, with endorsement by Deans Council, in the Fall term 2009, with a mandate to: (1) document and examine current retention rates; (2) propose realistic objectives regarding enhanced retention; and (3) identify best practice initiatives that should be improved or introduced. All of these aspects were to be considered in the context of the Sixth Decade Plan’s statement that, “To achieve UW’s academic excellence goals, each academic program is expected to: (1) attract excellent students, and (2) offer strong scholarly plans and programs …” These statements in the Sixth Decade Plan indicate that improved retention will not be sought at the expense of reducing quality of academic programs, or allowing students who are not performing satisfactorily to continue.

2. **COMMITTEE MEMBERSHIP AND APPROACH**

The Retention Committee membership includes the Associate Provost, Academic and Student Affairs (Chair), the Associate Vice President Academic, and the 6 Associate Deans, Undergraduate Studies.

In addition to reviewing literature related to retention and examining practices at other universities, the Committee met regularly during the Fall 2009 and Winter 2010 terms. Consultation occurred with members of the Faculty Relations Committee, the Manager of Residences, and residence dons, and the Undergraduate Student Relations Committee. In addition, the Associate Deans consulted with 94 first year students and 54 senior year students in the Faculties, as well as with 33 faculty teaching first year courses, plus 9 support staff.

3. **BASIC CONCEPTS**

*The students who withdraw in first year fall into two categories: those genuinely dissatisfied with the program offered and those who give up before they realize the program’s benefits. It is the second group that the University should target .... (Instructor in first year course)*

*Living away from home for the first time was a bit of a shock, not having access to friends and family. I was homesick early on in the year. (First year undergraduate student)*

The literature identifies various concepts or categories related to students and retention (http://www.answers.com/topics/college-student-retention):

1. **Stayer/Retained**
   A student who enrolls each term until graduation, studies full time, and graduates in 3 or 4 years (regular general or honours student) or in 5 years (co-op student), from either the program initially enrolled in or from another program at UW.
(2) **Leaver**  
A student who begins an academic program but withdraws before graduation and never returns to UW. Students leave in two categories: (1) in good standing, or (2) required to leave due to unacceptable academic standing.

(3) **Transfers**  
A student who starts at UW, but subsequently transfers to another university or college.

(4) **Stopout**  
A student who re-enrolls, after voluntarily leaving UW.

(5) **Slowdown**  
A student who begins at UW on a full-time basis, but later becomes a part-time student.

Although the above categories do not capture every situation, they do reflect different situations most likely to be encountered. In this report, the focus is upon full-time first year undergraduate students, and the issues they face in making a successful transition to second year. Attention is on the ‘stayer/retained’ and ‘leaver’ categories. It also is recognized that some students will leave Waterloo for good reasons, such as when accepted into a professional program (Dentistry, Law, Medicine, etc.) before completing an undergraduate degree.

### 4. PERSPECTIVES ON RETENTION

*Retention is not a problem. If it’s retention of individuals who cannot pass first year courses – then I think it’s questionable why we are trying to ‘retain’ these students. You risk ‘dumbing down’ courses to artificially increase the number of ‘passes’, and you do a huge disservice to those individuals who are capable of handling more demanding material – they are not challenged, nor required to do more than average work. Is this really a monetary problem? Because if it is, trying to solve it by massaging course work to ‘retain’ students is the last thing that should be done.* (Instructor in first year course)

**Yes:** We don’t want to lose capable students if they are unprepared through no fault of their own (e.g., poor quality high school). **No:** We don’t want to retain students who are not capable of meeting our standards. (Instructor in first year course)

*The whole transition was difficult. Living away from home was a huge adjustment. Also the work load was very different, and handling my time is hard to learn how to do.* (First year undergraduate student)

In order to improve overall retention, student persistence, academic success and graduation rates, it is necessary to identify effective student retention initiatives and support to enable more students to meet their academic goals. In addition to helping
... the cost of recruiting students is significantly higher than the cost of retaining students. Indeed, it is often cited that the cost of recruiting one new student to the university approximates the cost of retaining 3 – 5 students already enrolled. (Brock University, 2007, Undergraduate Retention Strategy, February 13th: 1, 2)

No 'silver bullet' or 'standard recipe' exists to enhance retention. Various measures can be used to help students persist and successfully complete their degrees, but the specific approach has to fit the culture of a specific university and its students. Furthermore, a single initiative is unlikely to have a significant impact. A mix normally is required, requiring systematic coordination and collaboration among different units to ensure activities are complementary. Finally, it is critical that students are aware of the support to help them. A common challenge for universities is to ensure students are aware of services they can use to help them if they are having problems. Students may not be aware of the range of support, or encounter systemic difficulties in accessing what is available. The above conclusions are supported by the following comments from other institutions.

Regarding the need for a mix of coordinated strategies and initiatives, Colorado State University has stated that:

No single program or collection of unconnected strategies will produce meaningful change. Improvement [of retention] requires a 'web of interlocking initiatives' that engage many students in profound ways and increase the quality of the undergraduate experience.

(Colorado State University, http://www.president.colostate.edu/retention.aspx.)

The above conclusion is reiterated by the experience at the University of North Carolina.

Retention has been studied extensively over the past fifty years and there exists no single answer for improving retention and graduation rates. Students leave college for varying reasons .... It is important to note that many students who leave college do so for reasons other than poor grades.

... most experts agree that any successful intervention effort must involve a comprehensive plan in which all areas of the campus work together to improve student learning and engagement in the campus community. (University of North Carolina, Charlotte, 2005, The Role of Faculty in Undergraduate Retention Efforts, September 19:1).

In terms of benchmarking against retention rates in the United States, the following statement from the Encyclopedia of Education provides perspective:
The highest institutional retention rates in the country are above 95 percent, while the lowest may be only 10 percent. Typical graduation rates for elite schools may be 85 percent or higher; for average schools about 50 percent; and for non-elite schools 15 to 25 percent. Freshmen are most likely to drop out of school, .... For an average institution, freshman to sophomore attrition is about 25 percent; sophomore to junior year attrition is about 12 percent; junior to senior year attrition is about 8 percent; and about 4 percent of seniors might leave school. (http://www.answers.com/topic/college-student-retention).

5. RETENTION INFORMATION: WATERLOO RELATIVE TO CANADA AND ONTARIO

5.1 Retention Rates in Ontario and selected other Canadian Universities, 2006-2007, 2007-2008 data, for Fall Cohort of First-Year, Degree-Seeking, Full-time students

Five Ontario universities had higher average retention rates (Queen’s, 94.9%, Western, 91.5%, Guelph, 90.4%, Toronto, 90.3% and WLU, 89.4%) than Waterloo (88.2%) for first year students in 2006-2007 and 2007-2008 (Appendix 10.1). McGill at 91.6% is also ahead of Waterloo. Data from the same source also show that the Waterloo retention rate for 2008-2009 was 89.0%, with comparable data from the other universities not available until the summer of 2010. Most of these other universities are recognized as having large graduate programs and being research intensive, yet do better than Waterloo regarding retention of undergraduates.

In addition, some students with very high academic standing leave Waterloo, and the understanding is that they do so because they are not satisfied with the ‘Waterloo experience’. We also know that some students leave before completion in order to attend professional programs at other universities. The interest at Waterloo related to retention should be on the first category.

Given the better retention rates of other research intensive universities in Ontario, we recommend a Waterloo objective of 90% for an overall retention rate for students moving from first to second year (based on the methodology to calculate retention shown in Appendix 10.1). We propose that Waterloo should aim to increase overall retention by 1% annually until the 90% target is reached, and then aim to continue improving retention until a 93% target is achieved.

5.2 Retention by Faculty at Waterloo (Performance Indicators Reports, 2006, 2007, 2008, 2009)

Waterloo monitors undergraduate degree distribution by academic Faculty. Each cohort of students is tracked to determine the percentage graduating with a degree from their Faculty of first registration, graduating from another Waterloo Faculty, still
studying, or having withdrawn. We also calculate the three-year average of the number of full-time terms to complete a degree in their Faculty of first registration.

When the Ministry of Training, Colleges and Universities measures degree completion rates, it typically allows a six-year window for students in a four-year program to complete their degrees. Since students in a co-operative program generally require an extra year to complete their academic studies, due to their work term employment, we typically allow a seven-year window.

There is considerable variation in retention and withdrawal rates by Faculty for the cohorts between 1999-2000 and 2002-2003 (Appendix 10.2). For the 2002-2003 cohort, Engineering has the lowest withdrawal rate (10%), followed by Mathematics and Applied Health Sciences (17% each), Environment (22%), Science (23%) and Arts (27%). However, several Associate Deans have noted that the current attrition rate in their Faculties has been increasing since the figures shown in Appendix 10.2, indicating that the attrition rate is likely higher than shown in that Appendix. The actual situation in each Faculty needs to be documented with up-to-date information, to establish baselines against which to track changes.

Given the different nature of academic programs, and different retention base lines related to the withdrawal rates mentioned above, the same approach to improve retention will not be appropriate. For example, initiatives effective with the cohort classes in Engineering are unlikely to be transferable to most other Faculties. As a result, while there will be value in Waterloo-wide efforts to improve retention, there also needs to be capacity to meet needs in individual Faculties - one size will not fit all.

One of the difficulties with the public data is the lag between the student being unsuccessful (in first or second year) and the time it shows up in the retention data. This means that any change to improve retention will not be evident for many years. To address this situation, it is recommended that internal measures be defined and goals established by each Faculty. Appendix 10.3 provides retention information from IAP for 1, 2 and 3 elapsed years. It may be that one Faculty may decide to focus on increasing retention as measured after 2 elapsed years and another after 3. Information about withdrawal rates by Faculty is provided in Appendix 10.4.

It is recommended that, once there is endorsement for the proposals in this report, each Faculty determine the number of incremental students it will retain in order to reach a 90% retention rate in 2010-2011 for Waterloo overall, relative to the CSRDE data in Appendix 10.1, and then move to a goal of 93% retention for Waterloo overall.

6. MAIN RETENTION ISSUES AT WATERLOO

I don't know how to, a priori, distinguish the unprepared from the incapable. (Instructor in first year course)

I found time management the hardest, and I underestimated the work load, and the difficulty of the courses. I do not feel that high school prepared me enough. I struggled a lot first term. (First year undergraduate student)

Based on a review of the literature, examination of experiences at other universities, and consultation with students and first year instructors at Waterloo, our
conclusion is that retention requires engagement by students, faculty and staff. Furthermore, faculty are key individuals related to retention. Faculty need to understand their role related to retention, and what initiatives they can take, individually and collectively, to help students achieve success in courses and programs. Main retention issues include:

1. Some guidelines and practices (e.g., aspects of progressions rules) reduce flexibility and impede efforts to improve retention.

2. Waterloo provides some forms of support to help domestic students overcome difficulties and challenges related to retention. However, less support is provided for specific needs of many international students. Furthermore, for both domestic and international students, too often they are not aware of this support, and therefore do not take advantage of it. Thus, communication with students must be improved to alert them about existing support.

3. Given that Waterloo has support services related to retention, existing services must be delivered in a collaborative, coordinated, and timely manner.

4. Some students are in denial about the problems they are encountering or may not be motivated to seek help. As a result, Waterloo has to be more effective in identifying as early as possible students who need assistance (e.g., by the middle of their first academic term) and then in being systematically proactive in connecting with them.

5. Parents are increasingly involved in their children’s lives while at university, especially in first year. Waterloo needs to enhance information and insight provided to parents about Waterloo and the first year experience.

6. Waterloo’s reputation is of an institution with high quality programs which are very demanding and require focus and high commitment from undergraduate students. Furthermore, the very best students often have opportunity to receive enriched programs and to be celebrated. Less able students are weeded out. Attention is needed to ensure any student admitted to Waterloo receives appropriate support to be as good as he or she can be, and understands that they are valued.

7. If a student concludes he or she is not in an appropriate program, or a Faculty concludes the student should not continue, and then the student wishes to move to another program within the same Faculty or in another Faculty, Waterloo does not provide effective support to facilitate examination of choices and help in the transfer process.

8. Students consulted during this review indicated that many students do not feel they are part of a Waterloo community, and instead often feel isolated and alone.

Any initiatives to improve persistence and retention should relate to at least these eight issues. In Sections 7 and 8, we identify best practices which allow universities to address such issues.
7. BEST PRACTICES FOR RETENTION

I had a hard time learning how to study for exams. In high school, studying for an exam meant reading my notes once and making sure I knew the equations. I can’t do that anymore. (First year undergraduate student)

Difficulties included adjusting to a variable class schedule; managing time between classes, homework, and leisure time; developing an effective work ethic that was suitable to each class; finding new friends. (First year undergraduate student)

My impression is that as many as 20% of first-year students are wasting everyone’s time, and their parent’s money. It would be a better service to them and the academic integrity of the University if they were sent away to mature before being re-admitted. (Instructor in first year course)

Frequently used best practices, which become components of an overall retention strategy, include (based on: http://www.answers.com/topic/college-student-retention; http://www.retain.unl.edu/bestpractices.shtml)

(1) Bridge programs that introduce high school students to university courses.
(2) Orientation or transition programs emphasizing academic strategies, social support and information about campus life.
(3) Programs for parents to help them understand student life and the support structures in place to help students make the transition from high school to university.
(4) First-term courses that continue and extend orientation.
(5) Academic advising, as well as psychological and social counselling.
(6) Development of academic skills, including time management, tutoring, course specific skills.
(7) Instructors provide early (within first 3 weeks of class) assessment so students have early feedback before mid-term exams or first assignments are due.
(8) Mid-term check for all first year students.
(9) Early alert and intervention system focused on students encountering difficulties.
(10) Social programming for information socializing as well as physical places for socializing.
(11) Programs to celebrate cultural diversity.
(12) Exit interviews.

8. OPPORTUNITIES FOR WATERLOO TO ENHANCE RETENTION

These are all useful activities. To my mind, the “big failing” comes in getting students who need these support activities to take advantage of them (sending them more e-mail messages, or posting more signs, etc., will not help, I don’t think). My perception is that students are already bombarded with a tonne of information they simply ignore and/or cannot understand. (Instructor in first year course)
I do know that those students who are having difficulty with courses, do not seek out appropriate help or advice. For example, I have in past years withheld midterm grades of those who fail in the hopes that they would come to see me to get their mark, and in so doing take an opportunity to see where they are going wrong and get my assistance. This did not work for me - the majority of these students never contacted me and seem quite content not knowing their midterm grade. I’m sure we can offer many useful initiatives, but if the students don’t uptake them, it will not help. (Instructor in first year course)

The NSSE 2008 survey asked students if they came to class without having completed readings or assignments. The percentage of first year students at Waterloo indicating they had not completed readings or assignments was AHS (35.7%), Arts (38.9%), Engineering (26.4%), Environment (43.7%), Math (28.6%) and Science (35.4%). The responses by students in their graduating year were AHS (40.4%), Arts (34.7%), Engineering (53.3%), Environment (32.4%), Math (42.7%) and Science (54.8%).

I would say, in general people don’t like it here much, they just learn to deal with it for 5 years. Make it more pleasant. (Undergraduate student)

Students feeling engaged and having profs take interest in them is important. If the prof knows their name or has office hours, is personable and interested in the students it makes a difference. (Undergraduate student)

With regard to the issues identified in Section 6, the Retention Committee believes that, over time, Waterloo can improve retention by enhancing current practices and by introducing new initiatives to:

1. improve provision of accurate and realistic information about support services to undergraduate students.
2. ensure students receive program advice before they arrive at Waterloo, and then continue to receive program advice when in first and subsequent years.
3. improve existing support services, such as those offered by Counselling and the Writing Center, to ensure needs are met in a timely manner.
4. introduce early warning and intervention initiatives to identify and help students at risk in their academic programs.
5. create and offer a new for-credit course for students required to withdraw after their first academic term due to unsatisfactory academic performance. The new course will focus on competencies and skills necessary for academic success.
6. ensure specific needs of international visa students are identified, and appropriate support is available.
7. provide a one-stop portal service, especially to help students who decide to change academic programs.
8. review curricula to ensure a focus on learning and understanding rather than primarily on content.
9. provide appropriate information to parents while undergraduate students are enrolled for their degrees.
use exit interviews to allow students to reflect on their experience at Waterloo, and to provide advice about changes which might be made to make that experience better.

The Retention Committee believes that it is not realistic for all of the above 10 activities to be enhanced or introduced at the same time. As a result, it recommends that priority be given by Waterloo to the following in 2010-2011:

1. Improve provision of accurate and realistic information about support services to undergraduate students.
2. Provide a one-stop portal service, especially to help students who decide to change academic programs.

Regarding a one-stop student portal service, the committee envisions it to be an e-portal, but also leading to a human presence. Ideally, students would find their way to the correct advice after clicking or talking through some fundamental questions. Either way, the initial experience would be fairly uniform and thorough, and follow a template.

The student portal would allow a student to easily consider the various dimensions of her/his situation, and then seek the appropriate advice. It would first help a student to place her/his situation into one of a number of categories: is the issue primarily academic (I'm in the wrong program; I'm flunking), personal (I'm depressed), financial, or social (I'm disconnected; I'm bored). Careful thought would be needed to determine the right categories, and how cross-over matters (which could well dominate: I'm depressed because I'm flunking and I'm flunking because I'm depressed) could be designed to still lead a student to the right outcome: my problem is first emotional, therefore I am directed towards counselling, and secondarily academic, so I will also seek academic advice with a better understanding of my issues.

3. Ensure specific needs of international visa students are identified, and appropriate support is available.
4. Initiate exit interviews for all students who leave Waterloo before completing a degree, as well as for a sample of students who graduate from Waterloo, to inquire about issues that challenged or supported their retention.

The Retention Committee is aware that another group led by Bud Walker is working to design a new transition program for first year students to replace the existing orientation program. Therefore, action is underway regarding the need “to ensure students receive program advice before they arrive at Waterloo, and then continue to receive program advice when in first and subsequent years.”

Faculties should consider initiatives to complement the above activities by central units, recognizing that what will be appropriate will vary among Faculties. The committee recommends the following:
(1) Improve provision of accurate and realistic information about Faculty-specific support services to their undergraduate students. This will require coordination with central units providing other information.

(2) Introduce early warning and intervention initiatives to identify and help students at risk in their academic programs.

(3) Facilitate a student-focused learning environment, including enhanced student engagement. A key component will be to provide more and enhanced mentoring, by faculty, staff and senior undergraduate students.

9. NEXT STEPS

The Retention Committee concludes that attention is required regarding several aspects to ensure progress is achieved to improve retention. In particular, decisions should be taken related to the following:

9.1 Monitoring Progress related to Enhanced Retention

Up-to-date retention data related to the progression of first year undergraduate students into second year need to be established for two levels: overall University, and for each Faculty.

Such data should be generated annually by Institutional Analysis and Planning, and be included in the annual key indicators report published by Waterloo.

A long-term goal, beyond the mandate of the Retention Committee, should be to collect and track other data reflecting changes, if any, in academic standing by students who access support services relative to students who do not. By collecting such data, it will be possible to determine systematically the value added by various retention initiatives.

9.2 Oversight for Retention Planning and Management

One management position should be assigned the role for overall retention planning and management, recognizing that such planning and management also will have to occur within each Faculty. Furthermore, there must be a close connection with Institutional Analysis and Planning, given its key role in compiling data related to retention.

Three positions are obvious candidates to take on oversight for retention: (1) Associate Vice President Academic, (2) Associate Provost, Academic and Student Affairs, or (3) Associate Provost, Students. The latter position is now being created, and it has been suggested in the draft report regarding this position that retention be allocated to its portfolio.

Given that the next Associate Provost, Students likely will not be hired until the autumn, the committee recommends that one of the other two positions should be given this oversight role immediately, in order to ensure actions are taken. Once the new Associate Provost, Students’ role is determined, there should be an assessment about which senior position should have ongoing responsibility for overseeing retention.
The committee also believes a Waterloo Undergraduate Retention Committee should be created and chaired by the central Waterloo person with responsibility for retention. Its membership would include an individual from each of the six Faculties and also from selected academic support units. Such a group should be in operation for the autumn term, 2010.

9.3 Incremental Resources

Assuming support is confirmed for enhancing existing services related to retention and/or adding new services, incremental financial and human resources will be required. The nature and amount of such incremental human and financial resources will need to be determined for both central and Faculty initiatives. Without such incremental financial and human resources, it is unlikely that significant progress will be achievable.

9.4 Specific Initiatives

Specific activities will need to be developed once there is agreement about direction and general means. For example, regarding early warning and intervention initiatives targeted at students at risk, what specific activities should be developed to facilitate early warning and follow up with proactive support? Regarding accurate and realistic information, which specific information needs to be provided and/or improved, and what are the best ways to get it to first year students? Identifying such specific activities will require attention by academic support units and Faculties.
10. APPENDICES

Appendix 10.1 Summary of CSRDE Results

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<tr>
<th></th>
<th>Year1 - Year2</th>
<th>Rank</th>
<th>Year2 - Year3</th>
<th>Rank</th>
<th>Year1 - Year2</th>
<th>Rank</th>
<th>Year2 - Year3</th>
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Notes: The CSRDE survey is based on a 4-year duration, regular program. Waterloo’s co-op program retention is adjusted to match the "regular" pattern. That is, the 5-year co-op cohort is restated to match the equivalent 4-year regular cohort who started at the same time. Ranking for Waterloo is indicated with ( ).
CSRDE uses Fall to Fall counts, so it is not dependant on the year-level of the student. i.e., a student in year-level 1B in their second year is counted as continuing to year 2. Coop students are allowed 1 extra year for graduation purposes, e.g., a coop student graduating in 5 years is reported as having graduated in 4 years on the CSRDE submission report. Continuation and Graduation rates are reported as a percentage of initial cohort, e.g., 100 students in 2006/07 cohort, 88% continue to year 2, 78% continue to year 3 means out of the initial 100, 78 have progressed to their 3rd year, i.e., to Fall 2008. CSRDE reports by total, gender, and international student levels.


<table>
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<tr>
<th>Faculty</th>
<th>Degree from Faculty of First Registration</th>
<th>Graduate From Another Faculty</th>
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<th>Withdrawn</th>
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<td>2%</td>
<td>22%</td>
</tr>
<tr>
<td><strong>MATH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999/2000 (975)</td>
<td>77.5%</td>
<td>5.1%</td>
<td>1.7%</td>
<td>15.6%</td>
</tr>
<tr>
<td>2000/2001 (991)</td>
<td>77.8%</td>
<td>5.8%</td>
<td>2.8%</td>
<td>13.6%</td>
</tr>
<tr>
<td>2001/2002 (1050)</td>
<td>75.9%</td>
<td>7%</td>
<td>1.8%</td>
<td>15.3%</td>
</tr>
<tr>
<td>2002/2003 (1028)</td>
<td>72%</td>
<td>7%</td>
<td>4%</td>
<td>17%</td>
</tr>
<tr>
<td><strong>SCI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999/2000 (688)</td>
<td>68.2%</td>
<td>10.6%</td>
<td>.9%</td>
<td>20.3%</td>
</tr>
<tr>
<td>2000/2001 (523)</td>
<td>66.3%</td>
<td>9.8%</td>
<td>5%</td>
<td>18.9%</td>
</tr>
<tr>
<td>2001/2002 (639)</td>
<td>67.8%</td>
<td>10.2%</td>
<td>1.7%</td>
<td>20.3%</td>
</tr>
<tr>
<td>2002/2003 (630)</td>
<td>64%</td>
<td>6%</td>
<td>7%</td>
<td>23%</td>
</tr>
</tbody>
</table>

*Percentages do not always total 100% due to rounding errors.
Appendix 10.3 Waterloo Retention Information from IAP for 1, 2 and 3 elapsed years

### Number of students in withdrew state

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Cohort</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>COHORT 2001/02</td>
<td>0</td>
<td>282</td>
<td>510</td>
<td>640</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2002/03</td>
<td>0</td>
<td>280</td>
<td>531</td>
<td>653</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2003/04</td>
<td>0</td>
<td>298</td>
<td>541</td>
<td>682</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2004/05</td>
<td>0</td>
<td>385</td>
<td>657</td>
<td>832</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2005/06</td>
<td>0</td>
<td>314</td>
<td>562</td>
<td>740</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2006/07</td>
<td>0</td>
<td>350</td>
<td>617</td>
<td>780</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2007/08</td>
<td>0</td>
<td>365</td>
<td>652</td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2008/09</td>
<td>0</td>
<td>379</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
0 elapsed years is the year of entry and so none have withdrawn as yet

Retention rates for the same data as in the above Table.

### Waterloo Retention Rate by cohort

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Cohort</th>
<th>Elapsed Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>COHORT 2001/02</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2002/03</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2003/04</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2004/05</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2005/06</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2006/07</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2007/08</td>
<td>100.0%</td>
</tr>
<tr>
<td>University</td>
<td>COHORT 2008/09</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Fiscal Year Cohort of First-Year, Degree-Seeking, Full-time students. Includes students who have their first term in the Spring, Fall, or Winter term of a particular fiscal-year, as opposed to CSRDE which only looks at students starting in the Fall term. Continuation rates are also measured as of succeeding fiscal years as opposed to CSRDE which only checks to see if a student is in succeeding Fall term as a point of measurement. The Retention Cube contains more reporting dimensions than CSRDE and is better suited for internal comparison. This cube has 3 variations By Faculty, By Department, and by 2nd Year Entry Department. Additionally, it contains a "snapshot" dimension to show what each cohort looked like in years out from the start of the cohort.

Students are placed in 4 categories: 1. Degree in Same Faculty/Dept, 2. Degree in Different Faculty/Dept, 3. Still Registered, and 4. Withdrew. This cube also has an Academic Standing dimension to show the academic standing of students. The ADR Retention Cube is the source for both the Academic Department Review retention information and the degree distribution charts in the annual Performance Indicator Report.
Appendix 10.4 Withdrawal Rates by Faculty, 2001-2008 and 2001-2006

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Elapsed 1: Withdraw 2001</th>
<th>Elapsed 1: Withdraw 2008</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHS</td>
<td>24</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>ARTS</td>
<td>133</td>
<td>131</td>
<td>-2</td>
</tr>
<tr>
<td>ENG</td>
<td>17</td>
<td>46</td>
<td>29</td>
</tr>
<tr>
<td>ENV</td>
<td>28</td>
<td>34</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>24</td>
<td>79</td>
<td>55</td>
</tr>
<tr>
<td>SCI</td>
<td>56</td>
<td>60</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Elapsed 3: Withdraw 2001</th>
<th>Elapsed 3: Withdraw 2006</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHS</td>
<td>60</td>
<td>70</td>
<td>10</td>
</tr>
<tr>
<td>ARTS</td>
<td>252</td>
<td>253</td>
<td>1</td>
</tr>
<tr>
<td>ENG</td>
<td>61</td>
<td>134</td>
<td>73</td>
</tr>
<tr>
<td>ENV</td>
<td>43</td>
<td>31</td>
<td>-12</td>
</tr>
<tr>
<td>MATH</td>
<td>102</td>
<td>123</td>
<td>21</td>
</tr>
<tr>
<td>SCI</td>
<td>120</td>
<td>143</td>
<td>23</td>
</tr>
</tbody>
</table>
Senate Graduate & Research Council met on September 13, 2010 and agreed to forward the following items to Senate for information.

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

FOR INFORMATION

1. Renewal of Centres and Institutes

   Institute of Biochemistry and Molecular Biology (IBMB). (Guy Guillemette, director). The primary purpose of the IBMB is to shepherd the undergraduate biochemistry program, which is shared between the departments of biology and chemistry. The institute runs a weekly seminar series to raise the profile of research being done on campus, recruit and retain undergraduate students, and expose graduate students to work outside of their own fields. Recent initiatives include monthly informal presentations given by graduate students and annual visits to companies that hire scientists. The institute’s seminars are well attended with students from science, engineering and applied health sciences, but the director is working to encourage students to take more of an active leadership role in organizing the events and speakers.

   Noting that the IBMB is not a traditional research institute, but rather a mechanism created to steward an interdisciplinary program, council approved renewal of the institute for a two-year term (December 2010 – November 2012). It is hoped that an alternative structure to that of a research institute reporting to the vice-president, university research will have been identified by that time.

2. Curricular Modifications

   On behalf of Senate, council reviewed and approved curricular modifications for the Faculty of Applied Health Sciences (kinesiology and health studies & gerontology).

3. Scholarships and Awards

   On behalf of Senate, council approved creation of the Walter Metzger Memorial Awards (endowment), Derick Wood Graduate Scholarship in Computer Science (endowment), and Perimeter Institute PhD Award (trust).

4. Memberships

   On behalf of Senate, council approved two new members of the Human Research Ethics Committee.

/e/w George Dixon  Sue Horton
Vice-President, University Research  Associate Provost, Graduate Studies
Senate Undergraduate Council met on September 14, 2010 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

NEW ACADEMIC PLANS  [effective September 1, 2011]

Faculty of Applied Health Sciences
Kinesiology
Human Nutrition Minor

1. Motion: To approve the new minor as provided below:

   Academic Requirements for the Minor:
   1. Students must be in an honours or four-year general program at the University of Waterloo.
   2. An overall minimum average of 67% is required for courses presented for the minor.
   3. Normally, a maximum of 5 courses (2.5 units) obtained on letter of permission or in transfer credit may be applied toward fulfillment of Human Nutrition Minor course requirements. These courses must be equivalent to courses listed in the course requirements as assessed by the department offering the replaced course.
   4. Successful completion of 5.0 units from the following requirements:

   Required Courses (2.5 units):
   - KIN/HLTH 346: Human Nutrition
   - KIN 446: Physiological and Biochemical Aspects of Nutrition and Health
   - BIOL 273: Principles of Human Physiology 1
   - BIOL 373: Principles of Human Physiology 2

   Electives: (2.5 units):
   - KIN 307: Methods in Physiological Research
   - KIN 404: Physiological Basis of Obesity and Type 2 Diabetes
   - KIN/HLTH 407: Physiology of Coronary Heart Disease
   - KIN 408: Cardiovascular Physiology and Pathophysiology
   - KIN 429: Bone and Joint Health
   - KIN 432: Research Project (Nutrition) OR HLTH 432: (B) Honours Thesis (Nutrition)*
   - KIN 433: Senior Essay (Nutrition) OR KIN 472: Directed Study in Special Topics (Nutrition) OR HLTH 472: Independent Study (Nutrition) OR HLTH 473: Contemporary Issues in Health (Nutrition)*
   - KIN 470: Seminar in Kinesiology, Topic: Nutrition*
   - HLTH 421: Nutritional Aspects of Chronic Disease
   - HLTH 349: Health Behaviour Change OR HLTH 360: Psychological Determinants of Health
   - HLTH 449: Alcohol and Drug Use and Abuse in Contemporary Society
   - HLTH 471: Psychopharmacology and Addiction
   - BIOL 241: Intro to Applied Microbiology
   - BIOL 345: Microorganisms in Foods

   *Topic of independent study, research projects and seminar courses must be approved by program director.
**Rationale:** The Human Nutrition Minor will give recognition to students who choose to specialize in the study of nutrition. The minor will provide students with knowledge of nutritional biochemistry, digestion, absorption and metabolism. After completing this minor, students will be able to evaluate nutrient intakes of individuals and appraise the intake of nutrients at the population level. Students will also be proficient at interpreting the scientific literature to develop evidence-based hypotheses in the area on nutrition and human health. The following departments have been consulted and have approved the proposed plan: institutional analysis and planning, library, biology department, chemistry department.

ACADEMIC PLAN CHANGES  [effective September 1, 2011; also see note in rationale]

►Faculty of Engineering

**BASc and BSE Specific Degree Requirements**

Implementation of Calendar Matters Related to PDENG Renewal Task Force Recommendations

2. Motion: To approve the changes to these degree plan requirements as provided below [bold = new text; strikeout = deleted text]:

*Examinations and Promotion Rules:*

Four Three work term report credits are required of all BASc and BSE students. A work term report credit is obtained by achieving a grade of satisfactory or better for a work term report. No student will be allowed to graduate without having achieved the required four three work term report credits.

Work term reports are required to be submitted in specific terms, as identified in the table below, and form part of the courses required for the corresponding term. Students enrolled in programs using a DRNA designation for the work-term report will be enrolled in the corresponding WKRPT course for the term listed in the table. Students in programs using the DRNC designation may enrol for a work-term course in a term prior to the one listed in the table, however should they students who have not earned a credit for the work-term course by the term specified they will automatically be enrolled in that course in that the specified term. The work term reports are identified as WKRPT 100, WKRPT 200, WKRPT 300, and WKRPT 400, respectively, on all transcripts.

*Academic Content and Evaluation:*

Students entering the BASc or BSE program prior to fall 2004 are required to take one of the COOP courses (COOP 1 - COOP 6) during each of their work terms. The academic content and evaluation described below applies to those students entering the BASc and BSE degree programs as of September 2004.

In the Faculty of Engineering, the experience gained during the work term is a central component of the engineering program (BASc and BSE). Associated with each work term are two components related to the degree. The type and quality of the work performed by the student (captured in courses labeled as COOP 1 to COOP 6) is evaluated and a grade (credit or no credit) is assigned by the Engineering Program Assistant Director in the Co-operative Education and Career Services department using criteria specified by the faculty. A sixth work term, although not required as part of the degree requirements, is available to students willing to meet the requirements.

In addition to the work related course, there is a professional development course associated with each work term. These courses focus on the development of the professional aspects of engineering. These courses (PDEng 15, PDEng 25, PDEng 25, PDEng 45 and PDEng 55) are associated with the five required co-op work terms. These courses focus on communication and the development of the three themes: responsibility, leadership, and critical analysis. Each course helps the student to develop the skills and perspectives required to be a practicing
engineer on graduation. The courses also provide material that is useful in the work-term experiences as well as the academic terms. These courses are intended for on-line delivery and are graded credit/no credit.

Professional Development - Engineering
This section is new and is correct for students enrolling in fall 2011 and beyond, students entering engineering prior to fall 2011 are directed to earlier calendars or to their program advisor for the requirements in this area.

In addition to the work related courses described in the previous section, there are five professional development courses required for the BASc and BSE degrees. These courses are normally taken during work terms and students are expected to enrol in one such course each work term until the requirement has been completed. The professional development program is composed of two core courses (PD 20 and PD 21) that are to be taken during the first two work terms. Once PD 20 and PD 21 have been successfully completed, students choose three elective courses from the PD elective course suite to be completed one per work term. These professional development courses are considered to be required courses of type DRNA: failed courses contribute to the accumulated failed count (see rule 6). In the event that a student has taken a PD course in each work term, but has failed the most recent PD course, the student may request permission to repeat, in a subsequent academic term, the PD course that was failed. Students should contact their advisor to determine if they qualify for this alternative.

Students are automatically enrolled in the two core PD courses (PD 20 and PD 21). Students must, however, enrol in the elective PD courses using the normal Quest enrolment process. Questions and special requests related to enrolment are to be directed to the appropriate program advisor.

Rationale: After a decanal review of the PDENG program, an engineering taskforce released a series of recommendations for renewal of the program. The renewed program will ensure coverage of fundamental professional development skills in two engineering-specific core courses while requiring three electives in the upper years. The core courses will emphasize the development of communications skills (as well as the engineering content) and thus permit engineering to replace the first work term report by successful completion of the two new courses (PD 20 and 21). The renewed program will leverage high quality, state-of-the-art online learning models and technologies developed by the University of Waterloo. [Note: in addition to requesting approval for the 2011-2012 calendar, the faculty is also seeking approval of changes to the degree programs for current BASc or BSE cohorts so that they may shift (if desired) to components of the WATPD Engineering model. Students will be advised that PDENG courses will not be available after the end of the winter term in 2012.]

CHANGES TO FACULTY REGULATIONS  [effective September 1, 2011]

►Faculty of Applied Health Sciences

Degree Upgrade

3. Motion: To approve the addition of the following section to the applied health sciences section of the undergraduate calendar:

Degree Upgrade
Recreation and leisure studies general students may pursue a degree upgraded from general to honours. Graduates with a general degree who wish to upgrade will be admitted on a case-by-case basis. Normally, applications to upgrade a degree must be completed within eight years following completion of the general degree. Students wishing an upgrade are required to turn in the earlier degree in order to be granted the upgraded degree. Such upgrades do not require clearing of averages for transfer credit purposes or the creation of new averages.
Rationale: Students who would like to complete an honours degree will not need to start a new degree. A similar practice is currently in place in arts.

Faculty of Environment
Auditing courses

4. Motion: To approve the following change in the environment section of the undergraduate calendar [bold = new text; strikeout = deleted text]:

7. Students in the Faculty of Environment may not register for courses on an audit basis. Students may request to register for audit status (AUD) in a course taught on campus if the faculty of the course allows audits. No credit is granted for a course in which an AUD grade is awarded. Students interested in an audit must consult with the course instructor at the beginning of the course to ascertain what conditions are attached to the granting of an AUD by the course instructor. Audits must be approved by the course instructor and the student’s advisor during the two week add period. Failure to satisfy the conditions of audit will result in the course receiving a grade of WD.

Rationale: The decision to not allow audits addressed the possibility that students who were not doing well in their courses would switch to audit, often late in the academic term. The proposed procedure provides that students wishing to audit a course need the permission of the instructor early in the term. Students wishing to change their courses to audit status after the course add deadline need to petition to do so.

FOR INFORMATION

Academic Program Review Reports

Society, Technology and Values – See attachment #1.

School of Architecture – See attachment #2.

Curricular modifications

On behalf of Senate, council approved new courses for WatPD-Engineering (PD 20; PD 21) and changes to academic plans, new courses, course changes and course inactivations for the faculties of: applied health sciences (‘AHS’ course subject code; faculty examinations and standings rules; recreation and leisure studies) and science (pharmacy).

/kjj
September 20, 2010

Geoff McBoyle
Associate Vice-President, Academic
Society, Technology and Values

Review Process

This was the second review of the Centre for Society, Technology and Values (STV) and its Option, the first one having been conducted in 2001. The review process followed the Senate Guidelines for Reviews of Interdisciplinary Programs. The self study of the Centre for Society, Technology and Values (CSTV) and its Option was submitted July 7, 2008; the internal review team carried out its interviews over two days, September 26 and October 31, 2008; and the review team report was received on March 3, 2009. The final strategic plan for the Centre and the Option was submitted June 28, 2010.

Characteristics of the Program

Historical Review

The CSTV was established in 1984 and began operating in winter term 1985. In December 1985 Senate approved an undergraduate Option in STV and in winter term 1987 the Centre offered its first course. The Centre was originally created as an interdisciplinary academic unit. Over time the greatest need for its courses eventually came from Engineering - it became more Engineering-oriented and -dominated.

The fourth Director was appointed in 1991 and in 1992 CSTV became part of the Faculty of Engineering. This Director was the first to devote all his administrative activity and teaching to the Centre and its courses. CSTV’s budget came from the Academic Development Fund run by the Office of the Vice President Academic and Provost. As of 1992, the budget flowed via the Faculty of Engineering. With a more predictable funding base in place the Director was able to add new courses and serve more students.

Although the Centre is a very small unit in terms of budget and number of faculty members, it has served the University well in part because it has changed when necessary. If the Centre is to continue to serve the University well, it needs to continue to change. For CSTV, the last decade has been marked by a loss of momentum - no new courses have been initiated since 2002 and four courses “on the books” have not been offered.

Program Objectives

CSTV is a teaching centre that exists almost exclusively to offer single courses to students who, for a variety of reasons, need, or want, a course offering a view of technology and society relations and interactions that differs from those contained within the constraints of a single academic discipline. It offers courses where students work with students from other Faculties, Departments and disciplines.

Distinctiveness/Benchmarking

CSTV is different. The Centre plays an important role in fulfilling the Faculty of Engineering’s philosophy of education that Engineering students should have a variety of ways to meet their “impact of technology on society” requirement for accreditation. All STV courses, except the fourth year project, fit the Engineering Impact Courses from the Complementary Studies Course List.

Academic Plans Offered

The Society, Technology and Values Option is open to students in all Faculties. To complete the Option students must complete six courses following requirements A, B, C, and D.
Requirement A: Completion of two of the following courses with a minimum two-course average of 70%:

- STV 100 Society, Technology and Values: Introduction
- STV 202 Design and Society
- STV 205 Cybernetics and Society

Requirement B: Completion of one of the following courses with a minimum grade of 70%:

- STV 201 Society, Technology and Values: Special Topics
- STV 203 Biotechnology and Society
- STV 302 Information Technology and Society
- STV 303 Cross-cultural Change, Technology and Society
- STV 401 Society, Technology and Values: Advanced Topics
- STV 404 Technology in Canadian Society.

Requirement C: Completion of two additional courses with a minimum two-course average of 70%, either:

- Two other STV courses from those listed in Requirements A and B; or
- One other STV course from those listed in Requirements A and B, and one non-technical course that is shown to be relevant to STV subject matter and approach as well as to the research undertaken in Requirement D, and that is approved by the CSTV Option Coordinator; or
- Two non-technical courses that are shown to be relevant to STV subject matter and approach as well as to the research undertaken in Requirement D, and that are approved by the CSTV Option Coordinator.

Requirement D:

Students may meet their research requirement in one of the following two ways:

- Completion of STV 400 (Society, Technology and Values: Senior Project) with a minimum grade of 70%. STV 400 is a supervised reading and research course on a technology-and-society area and topic approved by the CSTV Option Coordinator; or
- Students who do a fourth-year thesis or project in their home department may add a significant technology-and-society component or components to their thesis or project. The STV component(s) must deal with technology-society aspects of their research topic. The topic must be approved by the CSTV Option Coordinator. The project will be graded by the CSTV Option Coordinator or other representative of the Centre for Society, Technology and Values, and must receive a minimum grade of 70%.

The four courses: STV 201, 303, 401 and 404 have not been offered in the last decade, although they have been taught at least once before then.

Certain students are required to take a particular STV course to graduate. All students in the International Development program are required to take STV 202. Engineering undergraduates must take at least one course from “List A – Impact Courses” which contains all STV courses. The Studies in Islam program includes every STV course in its list of electives. The Applied Health Sciences’ Health Informatics Option includes a smaller list of particularly relevant STV courses, as do several other programs on campus.
Students

Student demand for STV courses is strong. For the seven year period, 2001-2002 to 2007-2008, a total of 3,160 students attended the six main courses: 100, 202, 203, 205, 302 and 400. This averages 451 students per year. In 2009-2010, extra sections of these courses have brought the average up to approximately 600 students per year.

Engineering students generally represent the majority of STV students, although the percentage of students in STV courses from this Faculty has changed over the life of CSTV. Whereas in 1994 Engineering students accounted for 85.2 per cent of students enrolled in STV courses, this figure fell to 43.9 per cent in 1999. However, the percentage of Engineering students has begun to increase again from 45 per cent in 2001-2002 to a high of 73 per cent in 2008-2009.

Since the last review in 2001, the number of students from other Faculties has decreased. The number of students from the Faculty of Mathematics dropped from 27 per cent in 2001-2002 to 11 per cent in 2007-2008. The numbers from the remaining Faculties fell from 33 per cent in 2003-2004 to 18 per cent in 2006-2007. This has resulted in a more homogenous class reducing one of the important types of learning opportunities that has been the hallmark of STV courses.

There are thought to be many reasons for the changes in background of students taking STV courses. The drop in Mathematics students is thought to be related to a change in their elective requirements. The total number of Engineering students has increased and Engineering Departments are vigilant that their students meet the accreditation of taking a course on the impact of technology on society. In addition, anecdotal evidence suggests that the perception of some students from outside the Faculty of Engineering is that, since the courses are offered from the Faculty of Engineering, the courses are therefore more suitable for Engineering students.

The STV Option has never attracted a large number of students. In terms of both CSTV priorities and total number of students taking the courses, the STV Option is insignificant. However, to the students who take the Option and the instructors who supervise, the Option can be of great personal importance and typically alters the career paths chosen by students.

Of the 14 students who have graduated with the Option since 1999, six were from Arts; three from Engineering; two from Environment; and one from each of the other three Faculties. For Arts students the main obstacle to greater participation is that STV courses are not cross-listed as Arts courses. The main obstacle for Engineering students appears to be that many do not learn about STV until second and third years, by which time they have already used some of their non-technical electives and there is neither room in their timetable nor time to fit in the required number of prerequisite courses.

Faculty

At the time of the self study in 2008, STV had a Director who each year taught two courses, a full-time lecturer on contract who taught five courses annually, and a part-time lecturer who taught three courses each year.

The Director retired April 2010 and a new Director was appointed June 2010.

STV 100, 202 and 203 are lecture-based and are capped at 80 students each. Each of these courses requires at least one teaching assistant (TA). However, given the absence of a graduate program in STV it
is difficult to find suitable TAs but CSTV has been fortunate to find excellent assistance from inside and outside the University. The smaller classes (STV 203 and 302), capped at 25 students, are similar to seminars and the instructor is responsible for all of the marking.

Currently CSTV teaches in all three academic terms: STV 100, three times a year; STV 202, three times a year with two sections in the Fall; STV 302 twice a year; STV 203 and 205 once a year; and STV 400 when students require it. At current staffing levels CSTV is unable to offer the other STV courses.

Main Strengths

The Centre is well respected for teaching impact of technology on society courses to students.

Concerns/Opportunities for Improvement

A few years ago it appeared that the Centre was in danger of finding itself with a dangerously low profile – an Option that serves few students; courses not well known outside of the Faculty of Engineering; a group of instructors working in intellectual isolation; and few Engineering professors with a deep interest in the area. While the Faculty of Engineering needs the services of CSTV professors, there are more professors in the Faculties of Arts and Environment with an interest in common with CSTV.

The Review Committee recommends:

“that CSTV continues to be housed in the Faculty of Engineering. Its purpose, as constituted, is to provide the accreditation function for Engineers. Its objectives could be met by providing contractually-limited staff positions to teach, a consideration in these perilous times. Many of the courses now offered, and which have low enrolments, could be stricken from the books, with the concentration by Engineering on one course that would provide the necessary accreditation for its students. If, at a future date and in more favourable economic times, the Faculty of Arts wishes to launch a program or Centre that investigates the impact of technology on society, then the case for integrating CSTV into that initiative could be reviewed at that time.”

Response: With respect to the review team, it is not clear on what several of these recommendations were based or how they would benefit students. The purpose of the Centre is to provide interdisciplinary studies of the relationship between technology and society. The accreditation function is a strong side-benefit and one that would be threatened by reducing the Centre to a single service course limited to Engineering students with no opportunity to interact with other students. Also, a single STV course could not meet the interdisciplinary needs of all the Centre’s students inside and outside of Engineering, including the many students who require particular courses unrelated to Engineering’s accreditation needs. Contractually-limited lecturers have little to no incentive to improve or sustain the Centre, create new courses, or form links with the rest of campus. Overall, it is not clear why it would be desirable to effectively dismantle CSTV only to hypothetically relaunch it in another location, rather than encourage collaboration across existing Faculties and programs.
Strategic Plan

Renewal and Revitalization

The Centre has reached a crossroads and the time has come for renewal and revitalization. In particular, the April 2010 retirement of the Director of 20 years opens doors inaccessible a few years ago.

Given that undergraduate teaching forms much of the identity of the Centre, the number, type and level of courses deserve re-examination at this time. Although the STV courses have by intention always been open to any student from any Faculty, the Centre has also come to be perceived by some as being strongly linked with the Faculty of Engineering.

Unfortunately, by joining the Faculty of Engineering, CSTV has fallen off the radar of many non-engineering students interested in the junction between technology and society. Those who do know about CSTV often see it as “for engineers only” and non-engineering students who do take STV courses have expressed feelings of intimidation. It has also limited the Centre’s meaningful interactions with the University community.

Now is a time to reconsider the issues discussed above, prepare a new future, and pursue new connections and opportunities across campus.

Going Forward for the Next Seven Years

The Centre for Society, Technology and Values is a small, hard-working, efficient centre with few complaints or demands, and with a clear benefit to a broad range of undergraduates. For its next seven years it will do best by anticipating evolutionary, rather than revolutionary, changes that will renew its vitality and enhance its role in the university community.

The following sections outline several short-term and long-term plans and goals for the Centre.

Teaching

Given that the teaching of core STV courses (STV 100, 202, 203, 205 and 302) is already at capacity, and student demand for STV courses appears to be increasing, there are several options to grow the Centre’s teaching.

A straightforward growth option is to hire additional instructors to teach one or more sections of the existing courses. Existing faculty members would then have time to redevelop one of the existing, but dormant, STV courses. For example, the new Director is a historian of Canadian technology and could offer the currently dormant STV 404: Technology in Canadian Society. Any such new course could also be developed with a plan to alternate offerings with an existing course every other year.

Another way to increase the number of STV students would be to increase the enrolment cap on the large courses (STV 100, 202 and 205). While the 80-student cap was arrived at carefully and has been stable for the past two decades, it may be time to consider increasing this limit if the associated TA resources are forthcoming. If done gradually, it is likely that the negative effects to student and instructor experience would be minimal. To increase the enrolment cap beyond 25 for STV 203 or 302 would require additional TAs and would seriously change the course experience, negatively affecting the quality of teaching. However, with additional faculty resources these courses could be offered more frequently.
Another way to increase STV enrolment is to offer an existing course such as STV 100 in an online format. This could catch the many overflow students who are unable to enrol in the campus courses. In the past, many co-op students on a work-term in Waterloo Region have taken STV courses at night to satisfy elective requirements. An online version would make such an option available to every co-op student at the University. Although planning for this venture is in the preliminary stages and bureaucratic limitations might appear, there does not appear to be any pedagogical objection. Perhaps the greatest difficulty would be in locating the necessary marking assistants.

Three full-time teaching faculty members (instead of the current two, and permanent instead of contractual) would give CSTV considerable flexibility in its ability to offer courses, but recent University budgetary constraints and personnel freezes suggest that this goal is not likely to be met in the immediate future. The prospect of reactivating one or more of the dormant STV courses or creating entirely new STV courses is appealing, but without additional financial support would not come without a cost to the existing program. However, developing online courses could be cost-effective. CSTV will be exploring this option this fall with an eye toward developing a version of STV 100 for 2011-2012.

**STV Option**

The Centre does not currently have the resources to handle major growth in the Option. If interest in the Option increases above one or two students per year, accommodations for faculty time will need to be considered or alternative arrangements in the scheduling or supervision of STV 400 may become necessary.

**Interdisciplinary Activities**

Given that STV courses are enrolled to capacity – even after adding two new sections of STV 202 and STV 302 in the past year – it might seem that there is no need to overhaul the Centre’s reputation. There does not appear to be any shortage of willing students and CSTV has not in recent times advertised its courses outside of the University Calendar. However, if the Centre were to lose its interdisciplinary cachet and became too widely perceived as an engineering-only service centre, then the quality of education would be at risk.

One of the most important goals for the Centre over the following years will be to increase the variety of students in its courses, especially those underrepresented from the Faculty of Arts and the Faculty of Science, and to improve the Centre’s overall interdisciplinary reputation on campus among faculty members.

The Centre can begin with simple measures such as advertising: brochures or posters to be distributed across campus or online. To improve its online presence, earlier this year CSTV overhauled its website and added a faculty blog to note and discuss news and events relevant to society and technology. The website also highlights past STV Option research projects; future plans include a showcase of projects from other STV courses. Ultimately, an increase in student interest will increase competition among students to enrol. To avoid limiting access, particularly to engineering students, the Centre will explore expanding course offerings as discussed earlier.

The Centre will also return to its roots and again organize and host on-campus talks and seminars. While funding can be a concern for larger events, a minimally expensive mechanism is to generate opportunities for guest lecturing. The Centre has had discussions regarding cross-lecturing opportunities with the
Studies in Islam program, and many STV course iterations of recent years have invited other faculty members, academic support staff, or external guests to assist in delivering a course component.

The CSTV Board should be re-examined in the coming years and possibly reactivated. Such a Board would provide invaluable guidance, visibility and opportunities for the Centre. In particular, it could open doors to potential donors to fund CSTV activities such as seminars or student prizes.

Does CSTV best belong in the Faculty of Engineering? Arguably, given the subject matter of technology and society interaction, CSTV could be located in any Faculty. Most, if not all, Waterloo Faculties offer a small handful of STV-like courses or include STV courses on lists of recommended electives. Accordingly, in an attempt to broaden the appeal of CSTV, the past Director, in 2008, made a preliminary investigation into the possibility of CSTV’s working more closely with another Faculty (without leaving the Faculty of Engineering).

Worthy of note in this discussion is the December 2009 announcement that the University of Waterloo had been awarded the endowed Wolfe Chair in Science and Technology Literacy, to be located in the Department of Philosophy in the Faculty of Arts. The process by which the University applied for the Chair revealed that many previously unidentified and unconnected individuals and groups on campus conduct research or teach in areas related to CSTV. Additionally, the process revealed deep support among Waterloo administrators for increased interdisciplinary activity in this area. The Centre is ideally positioned to participate.

Should the Centre remain in the Faculty of Engineering? Yes. The Faculty provides the best and most logical anchor at this time. At the very least, this relationship maintains the continuity and expectations of students and faculty members. The Centre should remain in Engineering to maintain the Faculty’s interests in the area of technology and society studies even while CSTV faculty members work with the holder of the Wolfe Chair and other interdisciplinary centres on campus.

However, having the Centre in the Faculty of Engineering risks isolating its faculty members from their natural colleagues. Consideration needs to be given to appointing CSTV instructors as cross or adjunct faculty members to appropriate disciplinary departments to facilitate research and collaboration with peers. Such an appointment acknowledges the importance of supporting the research of every faculty member, even in a Centre that emphasizes undergraduate teaching.

This final observation suggests that the Centre should investigate possibilities for a graduate program. The continued interest in the STV Option suggests there is potential for such a program, but one that must cross Faculty boundaries. A promising development for the next decade would be a joint program with the Faculty of Arts, developed in conjunction with the Wolfe Chair in Science and Technology Literacy.

Conclusion

Each of the above goals and plans for the Centre for Society, Technology and Values is intended to reinvigorate the Centre and its relationship with the rest of the university and the academic community. Admittedly the Centre has remained relatively static in the past decade or so. However with a new Director, it can take advantage of existing structures and look to build new ones to again be a strong interdisciplinary hub of activity for Waterloo’s students and faculty members.
Two-year Progress Report of the School of Architecture

The Self Study of the School of Architecture was submitted August 2005 and the review team’s report was received November 28, 2005. The School’s strategic plan was submitted April 2006. The report on the School of Architecture was approved by Senate Undergraduate Council on April 8, 2008 and was presented to Senate on May 20, 2008. This report describes progress in the past two years.

Program Changes

Following the principles established in the Faculty of Engineering’s Vision 2010 Plan, the School of Architecture has taken steps to enrich the undergraduate curriculum, making it more flexible and enhancing the connections between Design Studios and other academic streams. Two important steps were taken. Option Studios have been introduced in the 3B term, replacing the unified Urban Design Studio. The principles of urban design are now introduced in lower level studios, specifically 2A and 3A.

The 3B term now presents students with three options, each with a strong conceptual base and experimental program. Working in groups of approximately 20 students makes it possible to have a full-time faculty member and an adjunct with each group. The course outcomes have been extraordinary as have the student course evaluations. This initiative not only increased flexibility in the undergraduate curriculum, it also exposed students to research, documentation, communication and the development of concepts which prepared them for the challenge of the Master’s thesis. Option Studios focussing on digital design and the landscape of Canada’s north have been added more recently.

A second change in the 3B core curriculum introduced the Design Build course in the Technology Stream. A traditional course in concrete design (Arch 363) was combined with Steel design to create a new course in the 3A term on the analysis and design of structures for large buildings. Arch 363 itself was replaced by Arch 365: Structural Design Build. In this course students design, construct and analyze a small structure; in this case a chair. After four decades in which structure courses did not relate to design studio, nor have an internal creative agenda, the new Arch 365 truly puts structural design and analysis within the professional and creative scope of the architecture curriculum without losing the connection to science and numeracy.

Response to Accreditation Team’s Concerns

Concern 1: The single most cause for concern and this cannot be understated; the team found was the continued lack of diversity in faculty gender and race. The program boasts of having a heavier percentage of female students while continuing to accept a full time teaching establishment that is predominantly male. The team also observed that there was a very insular reliance on Waterloo grads to fulfill academic positions. The students also expressed this concern.
In 2006-07 the School hired three new full-time faculty members and another three in 2007-08. Of the six, five were women. Two junior faculty members (one male, one female) moved to an American university in September 2009. As of now, the School of Architecture has 17 faculty members of whom six (35%) are female.

According to the School’s strategic plan (Vision 2010) there should have been an additional three hires by the end of 2009. However, because of financial pressures the Faculty of Engineering has slowed down hirings.

The next round of hires in the School of Architecture will reflect both the gender and cultural mix of the student body.

Concern 2: The accreditation team was concerned to find evidence that, on top of a very heavy and stressful academic load that the students were required to research and petition the University to provide basic student services at the Cambridge facility. The further frustrating delay in implementing the agreed services has increased the stress level placed on the students.

This is no longer an issue as the services are in place and students are working with the Student Life Coordinator (a graduate student hired by the School of Architecture) to develop new programs and activities to sustain the quality of student life in the School.

Concern 3: While the accreditation team noted that Co-op is one of the program’s strengths, the team must express concern about the administration of the program being on "auto-pilot". The team recommends that CECS explore more ways to be more responsive to student concerns and to communicate to potential employers about managing expectations for the various levels of skill sets available to potential employers especially for 2A and 2B placements.

A committee consisting of graduate and undergraduate students, faculty members, academic support staff and representatives of the Department of Co-operative Education and Career Services was constituted to develop a new model for Architecture Co-op, reflecting its specific nature and the needs of students, employers and the School. The process has been thorough, returning to the fundamental intentions of the Co-op Program.

Concern 4: The accreditation team expressed concern about the lack of evidence found vis-à-vis grant applications, research scholarships, publications, presentations at conferences, peer-reviewed papers, etc. on behalf of the faculty. The program was continually described as aspiring to be “world class” during the team meetings with the President, Dean of Engineering and full-time faculty members. It would seem to follow that research; creative works; publications and grants should be consistent with such a “world class” program.

Scholarship, research and outreach have increased.
A faculty member won a SSHRC Creator’s grant in addition to two international awards including the first prize in the Vida 11 competition from Europe’s Fundacion Telefonica.

Another three faculty members have all won major national and international design competitions. Two of these three were named to the Young Architects’ Forum by the Architecture League of New York.

Faculty members led projects to the finals of the Toronto Gateway Public Art Competition and the US Department of Energy Solar Decathlon.

Faculty members have been awarded research funds in such diverse areas as “the stock of heritage buildings in Cambridge” to “floating foundations for the protection of houses in New Orleans”.

Scholarship and research are proceeding at a high level in the School of Architecture.

Concern 5: Finally, while the team understands that the focus has been on finalizing the building endowment fund, the team recommends as a cause for concern that the program refocuses its efforts on improving the “student bursary program” and securing more funds.

Funding has been provided to 91 graduate teaching assistants, almost triple the number of teaching assistantships provided in 2005. A concerted effort has been made to improve the record on competitive scholarships such as OGS and SSHRC. Finally, the Faculty of Engineering has recently launched a new fundraising campaign that set a goal of $1,500,000 for architecture graduate scholarships.

Program Responses to Unmet Accreditation Perspectives

Program Self-assessment

The accreditation team expressed disappointment that the Self Study did not respond to strategic goals set by the University. At the time of the visit the School of Architecture was involved in developing plans to be included in Vision 2010: A Blueprint for Excellence in Engineering Education and Research. The School of Architecture’s goals include: expanded graduate program; a larger faculty complement; increased space and facilities; further internationalization of the curriculum; enrichment of the graduate student experience; increased advancement targets; and expansion of research activity. A set of benchmarks has been established in each of these areas. These can be found in Vision 2010.

Social Equity

The issue of the shortage of female faculty members has been addressed (see above).

Human Resources Development

The team’s comments related to the creative and scholarly production of faculty members have been addressed above.
Other Relevant Information

Admissions

The program continues to attract excellent students at both undergraduate and graduate levels. The number of undergraduate applicants has increased steadily for the past decade, from 499 applicants in 1999 to 1,166 in 2009. In the same time period, the first year enrolment target rose from 62 to 72. The distribution of students admitted has been:

Waterloo Region 9%
Toronto 41%
Rest of Ontario 35%
Rest of Canada 15%

Ninety-three per cent of the members of the first year class won admission scholarships.

While the vast majority of students in the graduate program continue to be graduates of the Waterloo BAS, the School has begun admitting students from other Canadian and foreign institutions – nine of 62 in 2007-08, and nine of 49 in 2008-09. Most of these students must complete at least one qualifying term in order to fulfill the Comprehensive Building design requirement before entering the Master’s program.

Space and Equipment

In order to accommodate a large expansion to the graduate program, the School leased 6,000 square feet in the building across Melville Street from the main entrance. The space has been set up as graduate studio space to the same standard as the main building.

Community Engagement

The School continues to be directly involved in a huge variety of community activities. It plays host to over 60 public meetings and events annually.

Each year Design at Riverside Gallery, a partnership with Cambridge Galleries, but located in the School of Architecture, mounts approximately seven exhibitions, most of which are created within the School.

Each day, on average, 500 members of the general public enter the building to visit the café, Design at Riverside Gallery, Stantec Gallery, film theatre, or simply to see what is going on. This amounts to a total of over 150,000 visitors in the course of a year.

In addition faculty members, staff and graduate students work with the four municipal governments and private developers in Waterloo Region to improve the quality of design in this economically vibrant
community. Equally important is the contribution to public building and a series of cultural projects including the new City Hall and the Drayton Theatre project in Cambridge.

At the secondary school level, the School continues to collaborate directly with Galt Collegiate Institute to create the Region’s first Design Magnet Program for high school students. This project could have profound implications in the development of design curriculum for secondary schools in Ontario.

The School of Architecture over the last few years has been directly involved with the following municipalities and government departments: Toronto, Barrie, Burlington, Milton, Stratford, St. Catharines, New Orleans, Economic Development Ontario, Ministry of Municipal Affairs and Housing, Ministry of Agriculture Food and Rural Affairs, and Ministry of Public Infrastructure Renewal. In addition, the School continues to collaborate with community leaders and Laurentian University in Sudbury towards the creation of the Northern Ontario School of Architecture.

**Rome Program**

The Rome Program continues to thrive. The undergraduate program in the fall term normally houses 64 to 66 students. The Rome graduate program in the winter term, with approximately 10 students, is now fully integrated with the graduate workshop in history at the Faculty of Architecture at *Roma Tre* University. During the fall term the School of Architecture at Cambridge hosts exchange students from *Roma Tre*.