

## Graduate Education Council Meeting

Date: October 28th

Time: 12:30pm– 2:00pm (Pizza lunch starting 12:30 pm)

Place: International and Graduate Affairs Building Room 1N05

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*Regrets: Margret McGlynn, Catherine Steeves, Stephanie Barton, Jessica Esseltine, Catherine Nolan, Pauline Barmby*

1. Approval of the Minutes of May 5<sup>th</sup>, 2015 (attached)
2. Business arising from the Minutes
3. SGPS Announcements and Information (Linda Miller)
4. Reports from GEC Committees (Lorraine Davies, Miriam Capretz)
  - Policy Committee
    1. **Recommended that the Graduate Education Council accept and approve the following membership in the GEC**
      - a. Graduate Chair Representative July 2015-June 30 2018) (3 year term)
        1. Schulich School of Medicine & Dentistry - Dean Betts
      - b. Faculty Representatives (July 1, 2015 - June 30, 2018) (3 year terms)
        1. Engineering – Abdallah Shami
      - c. Graduate Assistant Representatives (July 1, 2015 –June 30, 2017) -(2 year terms)
        - Arzie Chant
        - Lori Johnson
      - d. Graduate student Representatives (July 1, 2015 – June 30, 2016) (1 year term) with an option on a second year
        - Arts – Jamies Brenes Reyes
        - Music – Chantel Lemire
        - Education – Eric Smiley
        - Health Science – Kristen Reilly
        - FIMS – Rebecca Kasperavicius
        - Law – Andi Ghosh
        - Ivey – Maya Kumar
        - Schulich – Catherine Nevin
        - Engineering – Kyle Fricke
        - Science – Gordon Irvine
        - Social Science – Stephanie Barton

**A reminder, please sign in on Council Attendance Sheet before leaving the meeting**

- e. SUPR-G Graduate Student Representative Required – Term ends June 30, 2017)  
(Nominees from the floor)  
<http://www.uwo.ca/univsec/pdf/senate/cttees/supr-g.pdf>

## **2. Operations and Agenda Committee**

Motion approved: That effective September 2015 the Graduate Education Council Operation/Agenda and Nominating Committee be discontinued effective September 15, 2015

- 5. Dr. Karen Campbell
  - a. Graduate Student Funding: solicitation of input

### **Other business**

For your information only-

Please see the attached Graduate Program Review Annual Report

## Minutes of the Graduate Education Council Meeting

Date: May 5<sup>th</sup>, 2015

The Meeting was held at 12:00 pm – 1:30 pm in Room 1N05 International and Graduate Affairs Building

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### *Attendees:*

<i>Amit Chakma</i>	<i>Linda Miller</i>	<i>Carol Beynon</i>
<i>Peter Simpson</i>	<i>Malcolm Ruddock</i>	<i>Matt Dumouchel</i>
<i>Rebecca Waldie</i>	<i>Cristine De Clercy</i>	<i>Jaime Brenes Reyes</i>
<i>Aisha Haque</i>	<i>Jason Brown</i>	<i>Doug Jones</i>
<i>Kristen Reilly</i>	<i>Paul Ragogna</i>	<i>Arzie Chant</i>
<i>Ron Wagler</i>	<i>Kamran Siddiqui</i>	<i>Catherine Nolan</i>
<i>Robert Wood</i>	<i>Eric Smiley</i>	<i>Nandi Bhatia</i>
<i>Ruth Martin</i>	<i>Cheryl Harding</i>	<i>Susan Scollie</i>
<i>Greg Kopp</i>	<i>Erika Chamberlain</i>	<i>Jiro Inoue</i>
<i>Chantal Lemire</i>	<i>Alison Shott</i>	<i>Alison Allan</i>
<i>Pam Bishop</i>	<i>Andrew Johnson</i>	<i>Katie Merchant</i>
<i>Matt Thomson</i>	<i>Paula Menzies Cameron</i>	<i>Pam McKenzie</i>
<i>Margret McGlynn</i>	<i>Liwen Vaughan</i>	<i>Catherine Steeves</i>
<i>Melanie Caldwell</i>		

### *Regrets:*

<i>Carol Jones</i>	<i>Joanna Quinn</i>	<i>Candace Loosley</i>	<i>Aaron Simkovich</i>
<i>Randal Graham</i>	<i>Lizhen Guo</i>	<i>Estee Fresco</i>	<i>Maya Kumar</i>
<i>Julie Shang</i>	<i>Nanda Dimitrov</i>	<i>Shirley Wales</i>	

1. Approval of the Minutes of December 9<sup>th</sup>, 2014 (attached)

*The Minutes of the meeting were approved as circulated with some further discussion regarding Membership.*

*Clarification: Supervision membership requires a faculty appointment which can be an adjunct appointment.*

2. Business arising from the Minutes (Carol Beynon)

2.1 Living Well @ Western: Wellness Wednesdays

- Launched for Graduate Students, started in April including Pet Therapy, Wellness Walks, and Music in the Atrium. Living Well at Western is also doing Yoga every Wednesday, everyone is welcome.

**A reminder, please sign the Council Attendance Sheet before leaving the meeting**

3. Reports from GEC Committees (Peter Simpson, Carol Beynon)

**i. Operations/Agenda and Nominations (Peter Simpson)**

Recommended that the Graduate Education Council accept and approve the following membership for GEC

- a. Graduate Chair Representative July 2015 - June 30 2018) (3 year term)
  - Tilottama Rajan
  - Rod Dekoter (*Rod Dekoter has since noted that he is unable to serve. A new nomination to come forward at the next meeting*)

*Acclamation*

- b. Faculty Representatives (July 1, 2015 - June 30, 2018) (3 year terms)
  1. Arts & Humanities – Jan Plug
  2. Music – Robert Wood
  3. Engineering – To be confirmed
  4. Science – Elizabeth Webb
  5. Social Science – To be confirmed

c. SUPR-G Representatives Required – Term ends June 30, 2017.

- Kamran Siddiqui, Faculty Representative
- Chantel Lemire, Graduate Student Representative

(Nominees from the floor)

<http://www.uwo.ca/univsec/pdf/senate/cttees/supr-g.pdf>

*Acclamation*

**ii. Academic Policy and Regulations Committee Report (Carol Beynon)**

- No additional information brought forward from the Policy Committee
- Update on revised graduate membership process that was approved through GEC in December and brought forward to UWOFA. Three slides were shown that reviewed membership categories; current memberships will be transferred over to the new process.

**iii. Postdoctoral Committee Report (Peter Simpson)**

- Canadian Survey of Postdoctoral fellows was conducted with three main concerns brought forward: remuneration; concern re status as neither faculty, student or staff, lack of preparation for careers outside academia.

To help address not being well prepared for life outside of academia Western has developed a Professional Development program that will launch July 1/2015. A round table for discussion has been set up in June to discuss the content of the Professional Development program. A major push will be in collaboration with supervisors to create with their students a training plan at the beginning to help guide students with their career plan.

- Research Forum to be held May 7 from 9:00 – 5:30 in the Great Hall; 3:30-5:00 is the Three Minute Research talks for PostDocs and a reception to follow in the Great Hall

#### iv. **Mentorship and Professional Development Committee Report**

- No report at this time
- A sincere thank you to the Teaching Support Centre for everything they do.

#### 4. GPS Announcements and Information (Linda Miller)

- PowerPoint presentation highlighting enrolment growth in graduate studies over the last decade, including increased number of programs and funding
- Set stage for dialogue with President Chakma for remainder of meeting

#### 5. Dr. Amit Chakma, President, Western University

- Open discussion related to Graduate and Postdoctoral Studies

#### 6. Other business

- The versatile PhD program Western has subscribed to for the last two years but is not being well used we are going to try for one more year.
- My Grad Skills is another program that is being used Western has topped the charts for students accessing the modules. Dr. Miller added that OCGS responded to the need for online course development, and they put forward an initiative to develop online research methods and data analyst modules that could be accessible to all graduate students across Ontario.
- Follow up to Policy, there has been some questions regarding why the policy committee has not met, please note that nothing has been brought forward to the Policy Committee or GEC to work on please bring forward any items you feel that need to be looked at.

Institutional Quality Assurance Process Report Year ending June 2015

Program	Degrees	Onsite Visit	SUPR-G Date	SCAPA	Senate	Outcome	Report	Report Due/Approved	Final Outcome
<b>2013-2014 Cycle -Cyclical Reviews</b>									
Business	EMBA, MBA, PhD, Management MSc	September 25-26, 2014	26-Jan-15	4-Feb-15	13-Feb-15	Good Quality	no	N/A	
Planetary Science (Collaborative)	Collaborative	2-Jun-14	26-Jan-15	23-Feb-15	4-Mar-15	Conditional with Report due September 2016	yes	September 2016	
Scientific Computing (Collaborative)	Collaborative	26-Sep-14	26-Jan-15	4-Feb-15	13-Feb-15	Good Quality	no	N/A	
Theoretical Physics (Collaborative)	Collaborative	N/A		27-Nov-13	6-Dec-13	Program admissions to cease / program no longer offered	no	N/A	Senate Dec 6, 2013
Chemical and Biochemical Engineering M.E.Sc.   M.Eng.   Ph.D.	M.E.Sc.   M.Eng.   Ph.D.	June 16-17, 2014	5-Jan-15 /23-Feb-15	4-Mar-15	13-Mar-15	Conditional with Report due January 2016	yes	January 2016	
Civil and Environmental Engineering M.E.Sc.   M.Eng.   Ph.D.	M.E.Sc.   M.Eng.   Ph.D.	February 6-7, 2014	21-Apr-14	30-Apr-14	9-May-14	Good Quality	no		
Electrical and Computer Engineering M.E.Sc.   M.Eng.   Ph.D.	M.E.Sc.   M.Eng.   Ph.D.	May 15 -16, 2014	17-Nov-15	26-Nov-14	5-Dec-14	Good Quality with Report (January 1, 2016)	yes	January 2016	
Mechanical and Materials Engineering M.E.Sc.   M.Eng.   Ph.D.	M.E.Sc.   M.Eng.   Ph.D.	March 18 -19, 2014	2-Jun-14	10-Sep-14	19-Sep-14	Good Quality with Report (June 2015)	yes	June 2015	Report rec'd program classified as Good Quality
Neuroscience M.Sc.   Ph.D.	M.Sc.   Ph.D.	May 21 -22, 2014	1-Dec-14	14-Jan-15	23-Jan-16	Conditional with Report due September 2016		September 2016	
Orthodontics M.Cl.D.	M.Cl.D.	April 16 - 17, 2014	2-Jun-14	10-Sep-14	19-Sep-14	Good Quality	no	N/A	
Computer Science M.Sc.   Ph.D.	M.Sc.   Ph.D.	June 9-10, 2014	18-Nov-14	26-Nov-14	5-Dec-14	Good Quality with Report (January 1, 2016)	yes	January 2016	
Physics (completed with Astronomy)	MSc, PhD	Jan 28 -29, 2014	21-Apr-14	30-Apr-14	9-May-13	Good Quality			
<b>2013-2014 Cycle New Programs</b>									
Masters in Management of Applied Science	MMASc	Jan 7-8, 2014	24-Mar-14	22-Apr-14	9-May-14	submitted to QC June 7, 2013, resubmitted to QC April 2014			Approved to commence August 4, 2014
Accounting	GDip	not required	17-Nov-14	26-Nov-14	5-Dec-14	Quality Council approval received January 21, 2015	no		
Master of Media in Journalism and Communication	MMJC	15-Sep-14	17-Nov-14	26-Nov-14	5-Dec-14	Quality Council approval received February 20, 2015	no		
<b>2014-2015 Cycle -Cyclical Reviews</b>									
Visual Arts	MA, MFA, PhD	March 31, April 1, 2015	Sep-15						
Women's Studies and Feminist Research	MA, PhD	February 12-13, 2015	20-Apr-15	29-Apr-15	8-May-15				
Music	MMus, MA, DMA, PhD	April 1, 2, 2015	1-Jun-15						
Popular Music	MA	April 1, 2, 2015	1-Jun-15						
Nursing	MScN, PhD and MN	June 25, 26, 2015							
Environment and Sustainability M.E.S	MES	April 16, 17, 2015	(report is late due to external illness)						
Public Administration	MPA	March 9, 10, 2015	Sep-15						
Sociology	MA, PhD	March 30-31, 2015	Sep-15						
Foods and Nutrition	M.Sc.F.N.	May 27, 28, 2015							
<b>2014-2015 Cycle New Programs</b>									
Driving Rehabilitation Therapy	MClSc		11-May-15	27-May-15	5-Jun-15	Quality Council July 2015 Meeting			
Public Administration	GDip	not required	26-Jan-15	27-May-15	5-Jun-15	Quality Council July 2015 Meeting			

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Ivey Business School</b>	
Degrees Offered:	MSc, MBA, EMBA, PhD	
Approved Fields:	<b>MSc *</b> <ul style="list-style-type: none"> <li>• International Business</li> </ul>	<b>PhD</b> <ul style="list-style-type: none"> <li>• General Management</li> <li>• Managerial Accounting and Control</li> <li>• Information Systems</li> <li>• Management Science</li> <li>• Marketing</li> <li>• Operations Management</li> <li>• Organizational Behavior</li> <li>• Finance</li> </ul>
	<b>MBA</b> <ul style="list-style-type: none"> <li>• Cross Enterprise Leadership</li> <li>• Health Care</li> <li>• Entrepreneurship</li> </ul>	
	<b>EMBA</b> <ul style="list-style-type: none"> <li>• Cross Enterprise Leadership</li> </ul>	
External Consultants:	Dr Vernon Jones Professor and Associate Dean Graduate Programs Huskyne School of Business University of Calgary	Dr Brian Bemmels Professor and Senior Associate Dean Academic Programs Sauder School of Business University of British Columbia
Internal Reviewers:	Dr Erika Chamberlain Associate Dean (Academic) Faculty of Law	Mark-Shane Scale PhD Candidate Library and Information Studies
Date of Site Visit:	25-26 September 2014	
Evaluation:	<b><i>Good quality</i></b>	
Approved by:	<i>SUPR-G on January 26, 2015</i> <i>SCAPA on February 4, 2015</i>	

**Executive Summary**

The Ivey Business School has a range of successful professional and research-based graduate programs. The reviewers were particularly impressed with the faculty's commitment to teaching excellence through the case method, the range of academic and career-related services available to students, and the quality and experience of the student body. The new Ivey building provides exceptional teaching resources, student work space, and technological supports.

The challenges facing Ivey's graduate programs are program-specific and are outlined below.

**Significant Strengths of Program:**

- In all programs, Ivey places emphasis on high-quality teaching. The faculty are enthusiastically committed to spending the time needed to properly employ the case method.
- Students receive exceptional support and training in career-building, self-marketing and recruitment. They are supported by a highly professional staff and alumni mentors.
- The Toronto EMBA program provides intensive training to experienced professionals from a diversity of backgrounds, and was especially praised for its international field experiences.
- PhD students receive training in both research methods and teaching. This increases their competitiveness when seeking academic positions after graduation.

**Suggestions for Improvement & Enhancement:**

- Ivey has experienced declining enrolment in the MBA and EMBA (Hong Kong) programs, which appears to be consistent with trends across North America. The Faculty will need to review the long-term sustainability of the Hong Kong program in its current form.
- The objectives of the MSc were not entirely clear: some described it as a pre-experience program for non-HBA graduates, and others described it as a pre-PhD program. This has the potential to create mixed expectations among students.
- The MBA and EMBA programs do not currently have measurable rubrics or independent scoring methods for assessing “leadership essentials.” Graduate faculty need to develop assessment methods for these key learning outcomes.
- While minimum funding for PhD students is currently \$28,000/year, this is low compared to some comparable institutions and may affect Ivey’s ability to attract top-quality PhD students in the future.

<b>Recommendations required for Program sustainability:</b>	Responsibility	Resources	Timeline
Eliminate “pre-PhD program” as an objective of the MSc	Program	None	Will be eliminated beginning with January 2015 intake
Review feasibility of Hong Kong MBA Program	Dean, Faculty	Potential financial and human resources if program restructured	Two years (summer 2015 intake has already been postponed)
Develop measurement rubrics for learning outcomes dealing with “leadership essentials”	MBA and EMBA program leadership		Two years

*\*New fields approved for the MSc Program at January 5, 2015, SUPR-G*

- *Analytics*
- *Entrepreneurship and Innovation*



**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Planetary Science Collaborative Graduate Program</b>	
Degrees Offered:	MSc and Ph.D.	
Approved Fields:	MSc in Geology (Planetary Science) or Geophysics (Planetary Science) PhD in Geology (Planetary Science) or Geophysics (Planetary Science) MSc in Physics (Planetary Science) PhD in Physics (Planetary Science) MSc in Astronomy (Planetary Science) PhD in Astronomy (Planetary Science)	
External Consultants:	Michael Higgins Sciences Appliquées, Université du Québec à Chicoutimi	Martin Duncan Department of Physics, Engineering Physics and Astronomy, Queen's University
Internal Reviewers:	P. Fraser Johnson Ivey Business School	Yann Benetreau-Dupin, Philosophy PhD Graduate Student
Date of Site Visit:	June 2, 2014	
Evaluation:	<i>Conditional with report due September 2016</i>	
Approved by:	<i>SUPR-G on February 23, 2015</i> <i>SCAPA on March 4, 2015</i>	

**Executive Summary**

Planetary science incorporates and synthesizes the disciplines of Astronomy, Biology, Chemistry, Earth Sciences, Geography, Physics and many other related subject areas. The recognition of this discipline is relatively recent – planetary science in its modern form is less than 60 years old, and the field is rapidly evolving. Planetary science research focuses on understanding the formation and development of planets and planetary systems, with particular emphasis on our own solar system.

The objective of the collaborative graduate program is to provide significant value-added educational exposure to the broad area of planetary science to students at Western involved in thesis research covered under the rubric of planetary science. This is accomplished by ensuring the student is exposed to areas of planetary science research outside of their home department, thereby integrating them into the Western planetary science research community. This is specifically done through graduate student attendance and participation in a planetary science journal seminar series, a common introductory planetary science graduate short course and mandatory attendance at planetary science colloquia given by external visiting speakers. Additionally, a suite of more specialized planetary science graduate courses are available to provide interested students with a more formal background in the sub-disciplines most germane to their own research communities.

All of these components of the Planetary Science Collaborative Graduate Program bring graduate students in the program more deeply into the interdisciplinary community of planetary science researchers, fundamentally adding to their experience above and beyond what the home programs alone offer.

**Significant Strengths of Program:**

- Integrated into a leading center of Planetary research in Canada.
- Strong demand: The program ranks among the top five worldwide in terms of number of students. It attracts top caliber students, who hold major scholarships, including Trillium, NSERC, and Vanier Canada Graduate Scholarships.
- Interdisciplinary collaborative program that spans several Western departments.

**Opportunities for improvement & Enhancement:**

<b>Recommendations for implementation:</b>	<b>Responsibility</b>	<b>Resources</b>	<b>Timeline</b>
Extension of program to engineering	PS graduate coordinator, CPSX director, Dean of Engineering	None	December 2015
Diversification of thesis supervisors	PS graduate coordinator	None	Ongoing
Coordinate with host programs to produce clearly articulated degree requirements for students	PS graduate coordinator, Associate Dean (Grad Programs)	consultation with host programs	September 2015
Harmonization of course weights between different host programs	PS graduate coordinator, Associate Dean (Grad Programs)	consultation with host programs	September 2015
Define a plan for long-term financial stability of the program	PS graduate coordinator, Associate Dean (Grad Programs), Dean	budgetary	January 2016
Academic Director	Dean of Science	None	September 2015

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Scientific Computing Collaborative Graduate Program</b>	
Degrees Offered:	Masters or PhD	
Approved Fields:		
External Consultants:	Nikolas Provotas, Professor, McGill University	An-Chang Shi, Professor, McMaster University
Internal Reviewers:	Nandi Bhatia, Professor, Western University	
Date of Site Visit:	September 26, 2014	
Evaluation:	<b><i>Good Quality</i></b>	
Approved by:	<i>SUPR-G on January 26, 2015</i> <i>SCAPA on February 4, 2015</i>	

**Executive Summary**

The one day visit of the review team provided the occasion for reviewers to interact with faculty members from the departments of Applied Mathematics, Computer Science, Statistical and Actuarial Sciences, and Physics and Astronomy, in addition to meeting graduate students, staff members, Assistant university librarian, and representatives of SGPS. The conversations revealed useful information about what makes the Program in Scientific Computing, in the reviewers' words, a "value add" program, and pointed out ways in which the program could be further strengthened. Overall, the reviewers support the continuation of this program, identifying it as "well-structured and innovative," timely, and providing "incremental value" to students getting trained in the field of Scientific Computing. Below are some points that external reviewers identified as the program's strengths while simultaneously offering suggestions for improvement.

**Significant Strengths of Program:**

- High competence of faculty in research, teaching, training of students, and strong record of publication
- Collaborative nature of the program offers an innovative approach to the teaching of scientific computing at the graduate level
- Learning outcomes are well expressed in the brief as well as in course descriptions
- Program's requirements are clearly articulated, both in the brief and in the course structure, and the course structure is appropriate
- Timeliness of the program and its ability to bridge a severe training gap at the undergraduate level, a gap based on limited competency in scientific computing in most undergraduate curricula in Canada
- High quality of students
- Excellent resources that include the Sharcnet facility, library materials, study rooms, group workrooms, and seminar practice rooms

**Suggestions for improvement & Enhancement:**

- While course learning outcomes are defined, identifying concrete learning outcomes for the program would be useful (for example, learning how to program, formalizing knowledge of numerical techniques, innovative thinking, gaining formal credibility on their diploma). Some clarification as to how specific courses measure these learning outcomes is recommended
- Clarification regarding requirements for the seminar course and Sharcnet workshop would be helpful

- The Sharcnet element of teaching is an exciting component of the program and should be both promoted and further expanded to better address the program’s needs in terms of consolidating students’ experience and skills
- Scientific Computing is relevant to many disciplines that are not currently included within the scope of the program. Broadening participation, and course offerings, to include appropriate aspects of biology, biochemistry, health sciences, finance, computer science, statistics, and “big data” would help with interdisciplinary outreach and would increase program enrolment.

<b>Recommendations required for Program sustainability:</b>	Responsibility	Resources	Timeline
Upgrade the Sharcnet course to a “capstone” course, which will enable clear documentation for professional development	Core faculty	Sharcnet	Sept. 2015
Introduce programming courses for students with insufficient programming background	Core faculty		Sept. 2015
Promote the Program through advertisement, an improved website, and an active recruitment strategy, in order to achieve higher enrolments	Director, Chairs of participating programs, graduate chairs	Program	Sept. 2015
Define a mission statement and high-level outcomes for the Program through consultation with current, and potential new, participating departments	Program director and advisory committee		Sept. 2015
Broaden scope of program, and increase the number of participating departments, to embrace opportunities to highlight the relevance of scientific computing in disciplines such as biology, biochemistry, health sciences, finance, computer science, and statistics.  Increase interdisciplinarity by adding partner programs and introducing opportunities to create relationships which support interdisciplinary research	Program director and advisory committee		Sept. 2015
Evaluate resources and supports for program and program director	Dean, Associate Dean, program chair	Possibly budgetary	Sept. 2015

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Chemical and Biochemical Engineering</b>	
Degrees Offered:	M.E.Sc., M.Eng, Ph.D.	
Approved Fields:	Biomaterials and Biochemical Engineering Environmental and Green Engineering Particle Technologies and Fluidization Reaction and Process Systems Engineering <b>NEW-</b> Macromolecular and Materials Engineering <b>NEW-</b> Water and Energy	
External Consultants:	Phillip Choi University of Alberta	James McLellan Queen's University
Internal Reviewers:	Pam McKenzie FIMS	James Kryklywy Neuroscience
Date of Site Visit:	June 16-17 2014	
Evaluation:	<b><i>Conditional with report in January 2016</i></b>	
Approved by:	SUPR-G on February 23, 2015 SCAPA on March 4, 2015	

**Executive Summary**

On June 16th and 17th, 2014, the review team interviewed a large group of graduate students (~ 30 of them) on the main campus and at ICFAR, the Dean and Associate Dean of the Faculty of Engineering, the Chair, Graduate Chair and the Director of the MEng Program, both junior and senior faculty members and the administrative and laboratory support staff. We also visited many laboratories including those at ICFAR. We were impressed that laboratories are well equipped for carrying out research projects in the theme areas defined by the Department. We collected a great deal of valuable information about the Department.

**Significant Strengths of Program:**

The program is of high quality overall.

- Research activity is significant with very good productivity and a broad range of themes; the department maintains a key position in a few key areas
- The program is a healthy size with a strong proportion of doctoral students
- Completion times are good
- The department is well equipped with specialized equipment and the ICFAR facility is excellent.
- There is strong leadership from the Chair and the Graduate Co-Ordinator and good support from the Graduate Assistant, technologists, and Western Libraries.
- The department has the human, physical, and financial resources to be one of the leading chemical engineering research programs in Canada.

**Opportunities for improvement & Enhancement:**

The reviewers identified a number of concerns from the site visit and review of the supporting briefs.

- The department is a collection of individuals and largely independent research programs with limited communication, very strong individual identities, and an inability to come together to work cohesively toward common goals. This lack of cohesion detracts from the overall strength of the department. The department is approaching a retirement wave over the next 10 years and there seems to be no common vision for the future and no succession plan to ensure that the department maintains healthy programs of research and teaching and establishes and maintains common goals and vision.
- Individual labs are located in physically distributed research facilities and students identify more with their supervisor and lab than with the Department. This combination exacerbates the lack

of departmental cohesiveness for faculty and students alike and poses challenges for remote students' participation in TAs and graduate courses.

- Competition among faculty members results in less than optimal use of lab space and access to equipment.
- The single Assistant Professor in the department is tasked with the role of Graduate Co-ordinator with no course release.
- During our tours, we observed a number of graduate students and research associates/postdocs not wearing the proper Personal protective equipment (PPE, e.g., safety glasses, goggles, lab coats). There was some concern about whether they were receiving sufficient safety training specific to their equipment, and whether Standard Operating Procedures (SOPs) were sufficient.
- There was considerable discussion and divergent opinions on the structure of the course work, particularly with respect to the concept of Core Courses.
- Some concern was expressed about ensuring the quality of graduate courses, and ensuring that they are revised to stay current with technical developments.
- During discussions with graduate student and faculty groups, the underutilization of the Supervisory Committee structure for doctoral student programs was a recurring theme.
- Major concern was expressed by both faculty and graduate students that the 78% rule for retaining a Western Engineering Scholarship is leading to grade inflation in graduate courses in the department and more broadly across the Faculty of Engineering.
- There appears to be a lack of awareness (and possibly agreement) as to the purpose of an M.Eng. program. M.Eng. students tend not to be as strong or as well-prepared as research students and are seeking broader, more applied treatment of material in the courses taken commonly.
- Students seemed to be unaware of opportunities for communications training.
- Concerns were raised about the scope, breadth, and attendance at the weekly seminar program.
- Faculty raised concerns, common among graduate chemical engineering programs across Canada, about the ability to recruit qualified Canadian graduate students. Conversely, common to other Ontario universities, international students exact a financial penalty on the department compared to domestic students.
- Graduate student stipends are low in comparison to other chemical engineering graduate programs in Canada.
- Concerns were expressed amongst the graduate student group that in some instances, TA expectations from instructors exceed the number of paid hours for the TA.

<b>Recommendations for implementation:</b>	Responsibility	Resources	Timeline
Hold regular meetings between Graduate Chair and Associate Dean to ensure co-ordination of response across the Faculty	Graduate Chair, Associate Dean		Immediately
Institute a periodic review of graduate courses to: 1. ensure that course scheduling and progression supports the participation of all students, on-campus and off, M.Eng and M.E.Sc/ Ph.D.; 2. balance and communicate the demands of core Chemical Engineering knowledge with strongly interdisciplinary work; 3. ensure the effectiveness of programming on communications; communicate and encourage opportunities to students.	Graduate Chair, Graduate Assistants, Department Chair		Ongoing
Investigate strategies for recruiting more and stronger domestic students; Review student support stipend packages to ensure they are	Graduate Chair, Graduate Assistants,		Ongoing

competitive with other programs; Review 78% scholarship policy.	Department Chair, Faculty		
Ensure effective and appropriate use of research equipment: 1. Develop space allocation and equipment plan and policies to ensure full and effective use of research space, equipment, and consumables. 2. Establish training, standard operating procedures, and enforcement policy for the use of personal protective equipment.	Department chair, Dean		Immediately
Encourage building student cohesion and identity across the department as a whole.	Department		
Require at least one meeting annually between thesis students and their advisory committees to ensure progress	Graduate faculty, Graduate Chair, Graduate Assistants		Ongoing
Review the implementation of and adherence to the provisions of the GTA collective agreement with respect to mid-term review of the Duties Specification Agreement.	Department		

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Civil and Environmental Engineering</b>	
Degrees Offered:	Master of Engineering Science/Master of Engineering/PhD	
Approved Fields:	Structures and Infrastructure Engineering; Geotechnical and Geo-Environmental Engineering; Environmental and Water Resource Engineering; Wind Engineering	
External Consultants:	Paul Van Geel Carleton University	John Newhook Dalhousie University
Internal Reviewers:	Pam Bishop, Associate Dean Graduate Programs, Faculty of Education	Sarah Hogarth Rossiter, PhD Candidate, Department of Philosophy
Date of Site Visit:	February 6 & 7, 2013	
Evaluation:	<i>Good Quality</i>	

**Executive Summary:**

The external reviewers acknowledged the high quality of faculty and allied personnel associated with this program. Faculty have strong research agendas, substantial funding and typically supervise 5 thesis-based students. On the basis of research, supervision and publication data, the external reviewers noted that four of the five fields—Structures and Infrastructure Engineering; Geotechnical and Geo-Environmental Engineering; Environmental and Water Resource Engineering; and Wind Engineering—are robust and sustainable. Phasing out of the fifth field, Natural Disaster Mitigation, is recommended.

**Significant Strengths of Program:**

Thesis-based students are particularly well supported in terms of financial assistance, provision of office space and library resources. As well, students have access to both high quality labs, and innovative program facilities such as Wind Engineering, Energy and Environment Research Institute is (WINDEEE), Insurance Research Lab for Better Homes (IRLBH) and Boundary Layer Wind Tunnel Laboratory (BLWT). Thesis-based students were highly satisfied with the quality of the curriculum, instruction and supervision. Whilst completion times for most PhD students were deemed appropriate, the external reviewers noted that the median time-in-program for thesis-based MESC students could be reduced from 2.3 to 2 years.

**Opportunities for improvement & Enhancement:**

To further enhance the substantial nature and achievements of the program, the external reviewers identified three key recommendations. The most pressing of the recommendations concerns the vital need to appoint a Graduate Chair (as the position is currently vacant). The second key recommendation pertains to the need by all Faculty to review the design and delivery of the course-based Master of Engineering to ensure that the goals, objectives and anticipated learning outcomes reflect the program's core purposes. Once done, the nature and format of the program needs to be communicated clearly to each cohort of students at the outset of their studies. The third key recommendation relates to communication and a need for students to be provided with more information about both what is expected of them and the disparate resources available to them in the Faculty of Engineering and elsewhere at Western.

In summary, the external reviewers highly praised the quality of the program.



<b>Recommendations for implementation::</b>	<b>Responsibility</b>	<b>Resources</b>	<b>Timeline</b>
Ensure appointment of a Graduate Chair (currently vacant) in a timely manner.	Dean Associate Dean	Dean Appointments Committee	July 1, 2014
Clarify the purposes, objectives and overall design of the Masters of Engineering program.	Associate Dean Graduate Programs Committee	No incremental resources needed	January 1, 2015
Provide students with policies and other information in relation to the supervisory relationship; message students electronically and post hard copies inside the building re mental health supports and services; dispute resolution.	Associate Dean Graduate Faculty	No incremental resources needed	Immediately
Assess the viability of providing more technical support personnel.	Associate Dean Graduate Chair	Salary support	Immediately
Provide specialized training to certify the chief technician so that only he can operate the overhead cranes in the lab. Place signage in the lab to ensure the lab floor is clear when the crane is to be used and operated.	Associate Dean	Budgetary (Faculty of Engineering)	July 1, 2014
Provide additional storage facilities in the structures lab for safe-keeping of samples and safe usage of the lab by students and staff.	Dean Associate Dean	Budgetary (Faculty of Engineering)	January 1, 2015
Closely monitor progression of students in the thesis based MEng program to more consistently achieve timely completion. (normally 2 years).	Associate Dean Graduate Chair Graduate Programs Committee	Consultation with SGPS	September 1, 2014
Phase out the Natural Disaster Mitigation Field.	Dean Associate Dean Graduate Chair	No incremental resources needed	Ongoing
Provide better remote access to university-supported software; and provide more specialized software on MEng study room computers.	Dean Associate Dean	Budgetary (Faculty of Engineering)	Ongoing

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Electrical and Computer Engineering</b>	
Degrees Offered:	MEng, MEng, PhD	
Approved Fields:	Research: Applied Electrostatics & Electromagnetics Biomedical Systems Communications Systems & Data Networking Microsystems & Digital Signal Processing Power Systems Engineering Robotics and Controls Software Engineering  MEng Communications Systems & Data Networking Power Systems Engineering Robotics and Controls Software Engineering Cybersecurity and Computer Forensics (new field)	
External Consultants:	Dr. Sofiene Affes Institut National de la Recherche Scientifique	Dr. Qusay H. Mahmoud University of Ontario Institute of Technology
Internal Reviewers:	Dr. Margaret McGlynn Faculty of Social Science	Ms. Renee Willmon Department of Anthropology
Date of Site Visit:	May 15-16, 2014	
Evaluation:	<i>Good with Report January 1, 2016</i>	
Approved by:	<i>SUPR-G on November 17, 2014</i> <i>SCAPA on Nov 26, 2014</i>	

**Executive Summary**

The external reviewers commented favourably on the strength of the ECE faculty, noting that there are outstanding researchers in all of the fields along with a balance both in terms of seniority and distribution of fields which bodes well for the future development of the program. They are impressed with their high level of funding, the relevance of their research, the quality of the lab equipment and infrastructure and their ability to attract industry partners.

The reviewers are enthusiastic about the proposed new field in Cybersecurity and Computer Forensics, commenting that it is both timely and relevant, and pleased that the department has hired a new faculty member in this field.

The reviewers note that the faculty each supervise a fairly large number of graduate students quite effectively while offering a reasonable number of graduate courses, though the courses are not evenly distributed across the fields. Their assessment is that the department cannot undertake any further growth without further faculty positions.

There is some pressure on the current graduate course offerings caused by the two-stream graduate program. The MEng students are looking for more courses with a practical, hands-on focus, while the research students are looking for more intensive theoretical courses. The current practice of having both sets of students in the same, double-numbered course with different assignments and different expectations is causing some dissatisfaction. The reviewers suggest that the strategic use of reading courses for research students might alleviate some of their concerns, and an additional focus on

internships for MEng students would be beneficial both in terms of developing industry experience and potentially alleviating financial pressures. They also recommend some specialized courses for the MEng students, including one on “Ethics and Law” to help them with the PEng.

During the review there was some confusion among both faculty and students over the number of courses required for the PhD program and which courses taken as part of a Master’s degree at Western or elsewhere could be counted towards PhD course requirements. The reviewers recommend that this matter be clarified and broadly communicated to both faculty and students.

The reviewers question the SGPS policy of not allowing junior faculty members sole supervision of a PhD student until they had graduated an MSc student, though they note that senior ECE faculty and administration generally support the policy.

They also note that the department is eager to increase its domestic enrolments and suggest drawing the Accelerated Master’s Program and the Mitacs internship opportunities to the attention of the current undergraduate population.

There has been a lack of continuity in the staff administering the programme over the past few years and at the time of the review the department was without an AO. Both faculty and students expressed great regard for the current staff and concerns that without some immediate reorganization of their workload and management they might choose to leave the department.

**Significant Strengths of Program:**

- New field in cybersecurity
- Research strength of faculty
- Quality of research labs

**Opportunities for improvement & Enhancement:**

- Development of some courses tailored to the particular needs of both MEng and research students
- Greater synergies within the department and across departments e.g. access to equipment in other labs, courses in other departments etc.
- Renovation of office space and common space, especially for MEng students

<b>Recommendations for implementation:</b>	Responsibility	Resources	Timeline
Offer more practical courses for MEng students	Department	Faculty time	1 year
Review the advising structures for MEng students to ensure they are getting appropriate guidance on course selection and professionalization	Department	Faculty time	1 year
Add “Ethics and Law” course as elective non-technical course for MEng	Department	Faculty time	1 year
Renovate MEng common space and office space for research students	Faculty	Financial	1 year
Offer some non-technical electives online to increase access for research students	Faculty	Financial / faculty time	1 year
Clarify course requirements for the PhD program	Department	None	1 year
Review GTA assignments and workload	Faculty	Faculty time	1 year
Reorganize the staff workload, including the management of CREATE and UNENE, to alleviate retention problems	Department / Faculty	Financial	1 year

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	Mechanical and Materials Engineering	
<b>Degrees Offered:</b>	MEng, MEng, PhD	
<b>Approved Fields:</b>	<ol style="list-style-type: none"> <li>1. Mechanical Engineering</li> <li>2. Thermofluids</li> <li>3. Materials and Solid Mechanics</li> <li>4. Automation Technologies and Systems</li> <li>5. HVAC (Heating, Ventilating and Air Conditioning) Systems (MEng Program only)</li> <li>6. Composite Materials (MEng Program only)</li> <li>7. Engineering in Medicine (MEng Program only)</li> <li>8. Micro and Nano Systems (New)</li> </ol>	
<b>External Consultants:</b>	<b>Christine Wu</b> , Professor and NSERC Industrial Research Chair, Department of Mechanical and Manufacturing Engineering, University of Manitoba	<b>Sanjeev Chandra</b> , Professor, Department of Mechanical & Industrial Engineering, University of Toronto
<b>Internal Reviewers:</b>	<b>Jim Dickey</b> , Assistant Professor School of Kinesiology University of Western Ontario	<b>Ivan Lee</b> , PhD Candidate, Department of Geography
<b>Date of Site Visit:</b>	March 18 – 19, 2014	
<b>Evaluation:</b>	<i>Good Quality with Report June 2015</i>	
<b>Approved by:</b>	<i>SUPR-G on June 2, 2014</i> <i>SCAPA on September 10, 2014</i>	

**Executive Summary**

Western's Mechanical and Materials Engineering graduate program is a vibrant and dynamic program that has shown a large amount of growth since the last review in 2007, and expansion of the MEng program in 2011. The review was conducted on March 18th and 19th 2014 and was headed by externals, Dr Sanjeev Chandra (Associate Chair of Graduate Studies, Mechanical and Industrial Engineering, University of Toronto) and Dr Christine Wu (Professor, Mechanical and Manufacturing Engineering, University of Manitoba). The review was collegial, comprehensive and well organized. The externals were impressed by the overall quality of the faculty, the professional and administrative staff, the state of the research (particularly the Micro-Nano-Bio Systems and Nanomaterials Research Laboratories) and teaching laboratories (particularly the mechatronics and wind tunnel laboratories), and the innovative components of the program (including CSTAR, the WINDEEE wind tunnel and the Fraunhofer Project Centre).

The externals prepared a concise but constructive report that outlined a handful of specific recommendations including re-examination of the level of funding for graduate students, involving staff and students in program decisions and better integration of learning outcomes within the program and courses. The externals concluded that there was sufficient faculty strength and expertise to support the current fields and to support the proposed new field of research in Micro and Nano Systems. In terms of the curriculum and training aspects of the program, the externals identified student concerns about the program seminar professional ethics and the desire for more assistance with career preparation. Dr Siddiqui prepared a comprehensive and detailed response to the externals' report and outlined their plans of immediate investigation and implementation of changes. The Engineering Dean, Dr Andy Hrymak has acknowledged the issues raised in by the external reviewers and has suggested that SGPS should review the issue of whether teaching assistant pay should be considered within or above the

funding package. He has also presented a contrasting view regarding engagement of staff and graduate students in department decision making; he has suggested that demonstration of changes in practice to address issues, of which Dr Siddiqui presented several examples, are more important than engagement of staff and graduate students in department decision making. He also raises an important point about learning outcomes in the graduate program; he suggests that it may be possible for individual students to assemble their program based on a selection of courses that do not meet the overall graduate program learning objectives.

The recommendations made and described below have been acknowledged in the program's response to the external assessors' report. In fact, the program has described a number of initiatives that have already been put into place (such as additional graduate student representation on the Department Council and the formation of a new committee that will meet on a monthly basis to discuss concerns of the administrative and technical staff). They also describe that they are planning a departmental retreat for the summer of 2014, in collaboration with the Teaching Support Centre and SGPS, to specifically focus on learning objectives.

**Significant Strengths of Program:**

- Clear departmental administrative structure with 1) Department Chair, 2) Associate Chair, Graduate Research Programs, and 3) Associate Chair, Graduate Professional Programs.
- Clear departmental staff structure with Chris Seres (Administrative Assistant), Joanna Blom (Graduate Coordinator), and assistance from Claire Naudi (Undergraduate Coordinator).
- Responsiveness to needs, such as expanding the associate chair (research and professional)
- Strong technical and research support for the graduate students (such as the machine shop)
- Excellent research and professional training programs for the graduate students
- Unique opportunities for faculty graduate research in nationally and internationally renown laboratories (such as CSTAR, the WINDEEE wind tunnel and the Fraunhofer Project Centre).

**Opportunities for improvement & Enhancement:**

- Although the departmental administrative staff structure appears clear, it appears that the roles of the individuals is not totally clear to the students.
- The program must more thoroughly examine the program's learning outcomes with particular attention to how the program supports and evaluates the outcomes.
- The department seminar series should be specifically considered within the context of program learning outcomes.

<b>Recommendations for implementation:</b>	<b>Responsibility</b>
Level of funding for graduate students	Graduate program with guidance from SGPS
Input of staff and graduate students in Departmental Affairs	Graduate program
Thorough address of learning outcomes at the program and course levels	Graduate program
Review the graduate seminar with particular attention to identify and address specific learning outcomes	Graduate program
Guidance in career preparation and professional ethics	Graduate program
Survey graduates, particularly from the MEng program, regarding their views on the professional courses	Graduate program

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Neuroscience</b>	
Degrees Offered:	MSc, PhD	
Approved Fields:	Molecular and Cellular Neuroscience (MCN) Behavioural and Cognitive Neuroscience (BCN)	
External Consultants:	Alan Fine Professor, Department of Physiology & Biophysics Dalhousie University	Kathryn Murphy Professor and Director, Neuroscience McMaster University
Internal Reviewers:	Catherine Nolan, Associate Dean (Graduate Studies) Don Wright Faculty of Music	Patricia Wilbur PhD Candidate Civil and Environmental Engineering
Date of Site Visit:	May 21-22, 2014	
Evaluation:	<i>Conditional with report due to SUPR-G September 2016</i>	
Approved by:	<i>SUPR-G on December 1, 2014</i> <i>SCAPA on January 14, 2015</i>	

**Executive Summary**

The Neuroscience program is a large Interdisciplinary program, hosted jointly by the Schulich School of Medicine and Dentistry and the Department of Psychology; the Molecular and Cellular Neuroscience, or MCN, field is affiliated with Schulich, while the Behavioural and Cognitive Neuroscience, or BCN, field is affiliated with Psychology. In addition to the two approved fields of research, MCN and BCN, the program has proposed a third field called Translational Neuroscience (TN) for the MSc degree; the TN field would be aimed at attracting medical residents, fellows, and other students who require advanced graduate training in neuroscience, but whose career pathway does not require the completion of a research-intensive MSc degree.

The Neuroscience program has a long history at Western. It was established in 1991, and pioneered graduate education in Neuroscience in Canada. The program has over 50 faculty members from a variety of Faculties and Departments across the University, and continues to grow. The enrolment in the program is healthy with about 60 students currently enrolled, and an intake of about 20 students per year. The program plans to expand its enrolment in part through the introduction of the new TN field.

The external reviewers comment favorably on the high quality of graduate supervision in the program and the disciplinary leadership of the primary faculty in the two fields. The reviewers raised concerns about deficiencies in student support practices and the effect of this on enrolment in the BCN field. The reviewers also expressed notable concerns that a strong vision of the interdisciplinary nature of neuroscience is not being adequately transmitted to the students, who tend to think of the two fields (MCN and BCN) as two programs, because of the disciplinary and cultural differences between the program members aligned with the two fields. The reviewers also expressed concern about creating a new field (TN) before the various issues about the current structure of the graduate program are addressed.

**Significant Strengths of Program:**

- Recognition of Neuroscience as a signature research area at Western
- Research strength of faculty
- Well-established research laboratories
- Leading-edge laboratory facilities
- Excellent library resources

**Opportunities for improvement & Enhancement:**

- The program has suffered from problems in leadership and administration. Action to address these problems has been initiated through the temporary appointment of two Interim Co-Directors representing the two units that host the program (Schulich and Psychology) and the creation of a Neuroscience Coordinator position that will encompass the undergraduate and graduate program in Neuroscience. The impact of these changes should be monitored over the coming year to ensure the long-term stability and success of the program. In particular, the success of the newly introduced Co-Director model of leadership of the program should be evaluated, with consideration given to its long-term potential.
- The program should ensure that students in MCN and BCN receive a uniform minimum funding level regardless of which field they are in. This issue has already been addressed through a budget model agreed upon between the two Deans.
- The program should take steps to build an inclusive Neuroscience community in order that students identify with the rich, interdisciplinary nature of Neuroscience, regardless of their field (MCN or BCN).

<b>Recommendations for implementation:</b>	<b>Responsibility</b>	<b>Resources</b>	<b>Timeline</b>
Establish effective and balanced leadership for the program. (See above.)	Deans	Faculty time	September 2015
Establish clear communication between the MCN and BCN fields.	Program leadership Program Committee	None	September 2015
Ensure that students in both MCN and BCN fields receive comparable minimum funding. (See above.)	Program leadership	None	Ongoing
Build a strong Neuroscience community with the introduction of events and opportunities that engage members of both fields. These might include: workshops, seminars, colloquia, student representation on selected committees, social events, etc.	Program leadership Program Committee Program members	None	Ongoing
Postpone introduction of the Translational Neuroscience (TN) field until stable, effective leadership is in place and until there is evidence of a strong Neuroscience community supporting the new field. When appropriate, the Program will complete the Major Modification template for the new field and submit to SUPR-G for approval.	Program leadership Program Committee	None	When ready
Ensure that all students in the program have access to the required Neuroscience 9500 course.	Program leadership	None	Ongoing
Reconstitute a Steering/Advisory Committee that will meet 2-3 times per year to set the overall direction of the program and receive reports of the Program Director (or Co-Directors) and consider issues that arise.	Deans		Ongoing

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Orthodontics Graduate Program</b>	
Degrees Offered:	M.Cl.D.	
Approved Fields:	None	
External Consultants:	Dr. Emile Rossouw, Graduate Orthodontic Program, University of North Carolina	Dr. Bryan Tompson, Director, Graduate Orthodontic Program, University of Toronto
Internal Reviewers:	Carol Jones, Associate Dean, Faculty of Science	Mathew MCreedy Graduate Student
Date of Site Visit:	April 16, 17 2014	
Evaluation:	<i>Good Quality</i>	
Approved by:	<i>SUPR-G on June 2, 2014</i>	<i>SCAPA on September 10, 2014</i>

**Executive Summary**

This program is flourishing, meets the Commission on Dental Accreditation of Canada (CDAC) requirements and recommendations from a 2010 accreditation review have all been met. Graduates have been successful in private practice and/or academic appointments and have all passed their National Dental Specialty Examination (NDSC) upon completion of the program. The clinic is well organized and the current space is adequate but the planned renovations with additional orthodontic chairs and clinical support space will allow for more efficiency in the treatment of the orthodontic patients and allow for the addition of a Dental Specialty Assessment and Training Program (DSATP) student.

**Significant Strengths of Program:**

- Program is deemed to be a high-caliber program that attracts excellent students.
- Program is a category 2 course based masters but it also produces a thesis which is defended orally with some of the projects published so the expectations of this program exceed typical category 2 programs.
- The students and alumni of this program are exceeding happy with the training they receive. Every student in the program (as well as every staff member) took time to meet with the reviewers and their feedback was positive. As further evidence of the satisfaction in the program, the alumni have helped to establish a professorship fund that will assist with future faculty needs and have contributed to the renovation costs.

**Opportunities for improvement & Enhancement:** There were no formal recommendations but the external reviewers made two suggestions for future consideration.

- While the program is flourishing under the leadership of Dr. Mamandras, and he is not planning to retire soon, where possible more faculty resources be pursued to assist the existing faculty members. The Graduate Orthodontic Clinic Director, Dr. Ali Tassi, currently holds a 60% position and the reviewers suggest that, if possible, this position be converted to 100%. Fund raising efforts are already underway to address these issues with the Mamandras Endowment Fund currently over \$700,000.00. Dividends from this fund can support extra faculty resources.
- While a category 2 program would not normally be expected to publish projects, as mentioned above, some of their results should be made available to this community as the projects were deemed to be of very high quality. As a suggestion to facilitate publication, collaborative research may help to disseminate the research data more freely and rapidly. The program is already employing such a strategy. During the past year a new Faculty member (Western PhD Engineering Graduate) has been working with the program on collaborative research projects involving Graduate Orthodontics, Dental Biomaterials, Skeletal Biology, Robarts Imaging, and Engineering. These activities have already resulted in an accepted publication and a submitted publication.



**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Computer Science</b>	
Degrees Offered:	PhD, MSc	
Approved Fields:	<ul style="list-style-type: none"> <li>• Artificial Intelligence and Computer-Based Games</li> <li>• Graphics, Image Processing, and Computer Vision</li> <li>• Distributed Systems</li> <li>• Software Engineering and Human Computer Interaction</li> <li>• Theoretical Computer Science</li> <li>• Computer Algebra</li> <li>• Bioinformatics and Biocomputing</li> </ul>	
External Consultants:	Dr. Ian Munro University of Waterloo	Dr. Evangelos Milios Dalhousie University
Internal Reviewers:	Dr. Benjamin Hill University of Western Ontario	
Date of Site Visit:	June 9-10, 2014	
Evaluation:	<i>Good Quality with Report due January 1, 2016</i>	
Approved by:	<i>SUPR-G on November 17, 2014</i> <i>SCAPA on November 26, 2014</i>	

**Executive Summary**

The Computer Science department is a generally solid program and is estimated to rank among the top twelve in Canada. The graduate program is successful and currently on par with the better programs across Canada. It also seems to be at an important crossroads regarding its directions for the future and would benefit from a coherent plan for moving forward.

Two fundamental issues repeatedly arose during the review. First, the program needs to develop a strategic plan for moving into the next stage of its existence. Key components of this plan should include: developing and strengthening connections and collaborations with industry partners for research and student development and improving participation in Faculty of Science initiatives such as Science Themes, Western Clusters. Related to the department's strategic vision is the issue of hiring. The department's biggest concern was the lack of assistant professors within the department and not having hired for the past ten years. The addition of two positions through the Western Clusters of Research Excellence program and the recruitment of excellent junior faculty members to replace retirees would support the program's continued strength.

The second fundamental issue was an apparent lack of communication within the department and between the department and the Faculty of Science. This was especially acute surrounding the issue of international student funding, but it seemed to be more generalized. Faculty members seemed unaware of university policies, practices, and positions. Graduate students complained most about the absence of direction or clear expectations regarding long-standing and new policies, such as the Topics Research Survey / Proposal (TSP) exam. Better lines of communication and more effective means of discussing issues and developing consensus within the program should be implemented.

The contribution of supervisors' research funds to student support was seen to be below the norm for comparable programs and the program is encouraged to increase its level of funding support. This aspect of student funding was not addressed in the program's response. Rather, focus was given to the cultivation of outside funds (from the Faculty of Science, industry), and to the creation of other programs (e.g. a professional MSc, a MMASc program, and/or joint programs with Statistics or Schulich) to bring funds into the department that can be used for additional international student support.

The international student "quota" was a major source of concern to the program because it is so dependent on international student enrollments. The challenge to recruiting domestic students is not

unique to Western's program, but it should be pressed, and attention should be given to the recruitment of part-time students from industry. Growth in the course based MSc is thought to be possible in this regard.

Although the external report noted with surprise that the post-BA and post-MSc PhD program had the same requirements, there were no recommendations regarding the curriculum content. They only recommend that some clarity regarding the expectations for students and the content of the research methods course be offered by the program.

**Significant Strengths of Program:**

- Good record of publication by both the faculty and graduate students
- Good record of research funding
- Strength in the areas of symbolic algebra, theory and bioinformatics, distributed systems, image analysis, and computer vision/artificial intelligence
- Adequate library and program resources
- Good interdisciplinary outlook of the faculty compliment

**Opportunities for improvement & Enhancement:**

- Develop a departmental strategic vision and plan for the next ten years
- Improve communication between the Faculty and the Department, especially with regard to fiscal matters and policy issues
- Improve communication between Department Administration and members of the Department
- Better inform the graduate students of the policies and expectations, especially those concerning student milestones
- Cultivate closer ties with industry partners in London
- Replacement and renewal of faculty compliment
- Strengthen the Department's connections with Faculty of Science initiatives

<b>Recommendations for implementation:</b>	Responsibility	Resources	Timeline
Develop a strategic plan for the graduate program for the next decade	Department Chair	Consultation with all relevant stakeholders, including faculty, staff, students, industry	June 2015
Faculty renewal	Faculty of Science	Financial resources and support	Next 2-3 years
Strengthen and improve connections with Faculty of Science initiatives, especially the Big Data research cluster initiative	Department Chair, Graduate Chair		ongoing
Grow enrollment of the course-based MSc	Graduate Chair	Funding and support for advertising and recruitment	2 year
Cultivate closer connections and ties with industry	Department Chair, Graduate Chair and program members		ongoing
Increase the minimum and average amount of student support from supervisors	Department Chair, Graduate Chair and program members	Research funds	August 2015
Improve communication generally between the Faculty and the Department, and within	Faculty of Science Dean and Associate Deans, Department Chair, Graduate Chair		ongoing

the Department, and especially with regard to policies			
Improve communication between the Department and the Graduate Students, especially regarding Graduate Program policies and expectations Suggest the development of program handbook/guide, improvements to the program website	Department Administration		Sept 2015

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	<b>Physics and Astronomy</b>	
Degrees Offered:	M.Sc. Physics, M.Sc. Astronomy, Ph.D. Physics, Ph.D. Astronomy	
Approved Fields:		
External Consultants:	Dr John Dutcher, Department of Physics University of Guelph	Dr Sara Ellison Department of Physics & Astronomy University of Victoria
Internal Reviewer:	Pam McKenzie, Associate Dean Faculty of Information and Media Studies	
Date of Site Visit:	January 29-30 2014	
Evaluation:	<i>Good Quality</i>	
Approved by:	<i>SUPR-G on April 11, 2014</i> <i>SCAPA on April 30, 2014</i>	

**Executive Summary**

The reviewers met with representatives of the University, SGPS, Western Libraries, the Faculty, and the program. Faculty, students, and staff were very supportive of both the programs and of the review process.

**Significant Strengths of Program:**

- Strength of faculty, including significant renewal of Astronomy faculty and broad variety of cross-appointment and adjunct faculty. Faculty have strong international reputations and strong research and funding records.
- Flexible (rolling) admission
- Excellent training and strong academic and financial support for students.
- Students are engaged and motivated, publication rates in keeping with rates at other North American programs, quality of publication venues is high
- Completion rates are compatible with other North American institutions; innovative project M.Sc. in Astronomy allows for quick completion and a publication for a significant number of graduates, Physics M.Sc.s may transfer to Ph.D..

**Opportunities for improvement & Enhancement:**

- Small number of faculty in Condensed Matter Physics
- Lack of clarity of funding information
- Breadth and regularity of course offerings is a challenge in some areas

<b>Recommendations for implementation:</b>	<b>Responsibility</b>
Ensure parity of M.Sc. degree options: Introduce project-based option in Physics M.Sc. and allow for direct transfer to Ph.D. for M.Sc. Astronomy students.	Department/faculty
Evaluate clarity of student funding communication.	Department/Faculty/SGPS
Review level of TA responsibilities.	TA Co-ordinator
Explore new sources for graduate student travel funding.	Department, Faculty
Explore feasibility of "provisional" supervisor as recruitment incentive.	Graduate Affairs Committee
Prioritize hiring of a condensed matter theorist.	Department, Faculty

**Final Assessment Report**  
Submitted by SUPR-G to SCAPA

<b>Program:</b>	Women's Studies and Feminist Research	
Degrees Offered:	MA PhD	
Approved Fields:	Feminist Theory; Health and Embodiment; Representation and Cultural Embodiment; Globalization, Equity and Social Structure; Sexuality	
External Consultants:	Dr. Andrea O'Reilly; Professor School of Gender, Sexuality & Women's Studies; York University	Dr. Mary Bryson; Professor and Director Institute for Gender, race, Sexuality and Social Justice, Faculty of Arts and Language and Literacy Education; Faculty of Education; University of British Columbia
Internal Reviewers:	Dr Andrew Watson Ob/GYN & Physiology & Pharmacology; Western University	Dexin Xi PhD Graduate Student Science; Western University
Date of Site Visit:	February 12 and 13 <sup>th</sup> 2015	
Evaluation:	<i>Good Quality</i>	
Approved by:	<i>SUPR-G on April 20, 2015</i> <i>SCAPA on April 29, 2015</i>	

**Executive Summary**

The review was very well organized; the externals were well-chosen, obvious experts and very committed to their task. All meetings with faculty, staff and students displayed a strong commitment to the program and its strengths. All displayed obvious pride and commitment to the program. Overall a very strong new program, that is emerging from initial phases of origins, with a likely capacity to grow much further and mature during the next phase of its history.

**Significant Strengths of Program:**

- The faculty and their scholarly accomplishments and their commitment to the program
- The staff and their commitment to the program
- The students and their enthusiasm and commitment to the program
- Times to completion are in line with expectations

**Suggestions for improvement & Enhancement:**

- A retreat to conduct curriculum mapping would be very helpful as only 3 courses are offered every year: WS 9550 *Feminist Theory*", and two methodology courses, WS 9560 *Researching Lived experience: Feminist Methodologies*" (oriented to students building expertise located in Social Science) and WS 9565 *Feminist Theory and Methods in the Arts and humanities*" (oriented to students building expertise located in Arts and Humanities). However both MA and PhD students must take 6 half course to complete requirements
- Assist joint appointment faculty in developing clear workload expectations that are coordinated with both faculties to ease stress on faculty
- Consider hiring future faculty recruits into WSFR rather than as joint appointments

- Contributions of affiliate faculty members should be counted in their workload agreements. As it stands their contributions are voluntary and their large numbers imply that the program is very well resourced.
- 4 year time for PhD completion was described by the external reviewers as not optimal or realistic

<b>Recommendations required for Program sustainability:</b>	Responsibility	Resources	Timeline
Complete curriculum mapping to align with LOs and to support timely completion	Graduate chair and faculty	none	May 2015
Assist faculty with joint appointments in developing clear workload expectations	Dept Chairs and Deans	none	2015-2016
Current space is not adequate	Dept Chairs and Deans	Physical space	2018 and beyond
Consideration should be given to adding a new faculty member	Dept Chairs and Deans	Budgetary	2018 and beyond

**University:** Western  
**Reporting Year:** 2014-2015  
**Date Submitted:** 25-Jun-15  
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Name of Program Modified	Degree Designation	Classification of Major Modification	Type of Major Modification	Brief Description of the Major Modification	Date of Internal Approval (MM/DD/YYYY)	Date the Major Modification becomes Effective (MM/DD/YYYY)
Physiology and Pharmacology	MSc	Graduate	Add new field, concentration, stream	A new Accelerated Option to be offered within existing MSc program. Option is a thesis degree, based on the development of an original, advanced research project, together with course work and non-course competency requirements. Completion of the acceleration option is 3-4 terms.	4/12/2015	5/1/2015
Management of Applied Science	MMASc	Graduate	Add new field, concentration, stream	Data Analytics Field-goal of this new field is to give students who are already trained in mathematical or computational sciences, the essential business and communication skills and expertise in data analytics that extends their undergraduate training.	4/12/2015	9/1/2015
Management of Applied Science	MMASc	Graduate	Add new field, concentration, stream	Computer Science Field- goal of this new field is to -goal of this new field is to give students who are already trained in Computer Sciences, the essential business and communication skills and expertise in computer science that extends their undergraduate training.	4/12/2015	9/1/2015
Management	MSc	Graduate	Add new field, concentration, stream	"Analytics" & "Entrepreneurship and Innovation" fields -landscape of grad business education is changing and students are seeking pre-experience specializes masters programs to compliment their undergraduate degrees prior to seeking fulltime employment. Employers have expressed interest in hiring more graduates with deeper knowledge and specific skills.	1/23/2015	1/1/2015
Biochemistry	MSc	Graduate	Add course based option	new option will be a one-year non-thesis degree based on formal course work and an independent research project.	12/5/2014	1/1/2015
Epidemiology and Biostatistics	Grad Certificate	Graduate	Closure of a program	no students enrolled -only 3 since 2007. Closing the program does not result in any changes to course offerings for MSc or PhD programs	12/5/2014	8/31/2014
PhD in Educational Studies	PhD	Graduate	Change field name	Renaming "Educational Psychology / Special Education" to School and Applied Child Psychology"	10/17/2014	9/1/2015
Schulich School of Medicine & Dentistry and Faculty of Science: Introduction of a Major in Epidemiology and Biostatistics	BMSc	Undergraduate	Add specialization, honours, option, concentration, stream	Currently, the Department of Epidemiology & Biostatistics offers an Honors Specialization in Epidemiology & Biostatistics. The proposed Major in Epidemiology & Biostatistics enriches options available to students in the Bachelor of Medical Sciences Program, and will allow students in other degrees (BSc, BHSc) to complete a module in Epidemiology & Biostatistics.	8/5/2015	1/9/2015
Faculty of Arts and Humanities, Department of French Studies and Modern Languages and Literatures, Faculty of Social Science, Department of Anthropology: Introduction of an Honors Specialization in Linguistics	BA	Undergraduate	Add specialization, honours, option, concentration, stream	Faculty in this program identified the need to offer an Honors Specialization for students interested in graduate studies in Linguistics. There is evidence of student demand.	5/6/2015	1/9/2015
Faculty of Arts and Humanities and Faculty of Social Science, Department of Women's Studies and Feminist Research and Huron University College Centre for Global Studies: Introduction of an Honors Specialization in Global Gender Studies	BA	Undergraduate	Add specialization, honours, option, concentration, stream	The rationale behind this proposal is rooted in the historical practices of students studying in both the Department of Women's Studies and Feminist Research (WSFR) and the Centre for Global Studies (CGS). Since both WSFR and CGS were formed, there has been a stream of students pursuing modules in each academic unit that have sought complementary studies in the other. There is an existing and well established interest amongst students at both Western and Huron to bring the studies available in both sets of educational programs into productive integration and confluence with one another, in recognition of the educational value that the respective programs bring out in each other.	5/6/2015	1/9/2015

Faculty of Science, Department of Biology: Introduction of an Honors Specialization in Biodiversity and Conservation	BSc	Undergraduate	Add specialization, honours, option, concentration, stream	The Honors Specialization module in Biodiversity and Conservation is an initiative by the Department of Biology to become a destination of choice for students with particular interest in the study of modern ecology, evolution and intersecting disciplines. It is an undergraduate Biology link with the recently articulated Faculty of Science research theme in Sustainability and Environment. The module has a strong laboratory/research component in Years 3 and 4 with a focused curriculum that culminates with key capstone offerings in fourth year that build on prerequisite courses. The module has clear degree-level outcomes in terms of both knowledge and skills. With these in hand, graduates will be prepared to pursue a diverse array of careers from basic research to public policy in a range of fields that are particularly pertinent today including impact of climate change on biological diversity, conservation and restoration.	5/6/2015	1/9/2015
Schulich School of Medicine & Dentistry and Faculty of Science: Introduction of an Honors Specialization in Microbiology and Immunology with Pathology	BMSc	Undergraduate	Add specialization, honours, option, concentration, stream	The current Honors Specialization in Microbiology and Immunology provides students with a limited understanding of disease pathogenesis as it is focused on microbes and immunity in primarily infectious diseases, autoimmune diseases and cancer. There has been interest expressed over the past few years from undergraduate students for a module that combines microbiology, immunology and pathology. As such, many universities have an integrated Department of Pathology and Immunology (and often Microbiology). This new, limited enrollment Honors Specialization module will benefit both departments and will allow top students in the BMSc Program the opportunity to improve and expand their understanding of general mechanisms of diseases.	5/6/2015	1/9/2015