


DATE: June 21, 2019

TO: Senate

FROM: Dr. Jerry Tomberlin, Provost and Vice-President (Academic), and Chair, Senate Academic Program Committee

RE: Final Assessment Report and Executive Summary: Undergraduate Programs in Biology



The purpose of this memorandum is to request that Senate approve the Final Assessment Report and Executive Summary arising from the cyclical review of the undergraduate programs in Biology.

The request to Senate is based on a recommendation from the Senate Academic Program Committee (SAPC), which passed the following motion at its meeting of June 13, 2019:

THAT SAPC recommends to SENATE the approval of the Final Assessment Report and Executive Summary arising from the cyclical program review of the undergraduate programs in Biology.

The Final Assessment Report and Executive Summary is provided pursuant to articles 4.2.5-4.2.6 of the provincial Quality Assurance Framework and article 7.2.23 of Carleton's Institutional Quality Assurance Process (IQAP). Article 7.2.23.3 of Carleton's IQAP (passed by Senate on June 26th, 2015 and ratified by the Ontario Universities Council on Quality Assurance on September 25th, 2015) stipulates that, in approving Final Assessment Reports and Executive Summaries 'the role of SAPC and Senate is to ensure that due process has been followed and that the conclusions and recommendations contained in the Final Assessment Report and Executive Summary are reasonable in terms of the documentation on which they are based.'

In making their recommendation to Senate and fulfilling their responsibilities under the IQAP, members of SAPC were provided with all the appendices listed on page 2 of the Final Assessment Report and Executive Summary. These appendices constitute the basis for reviewing the process that was followed and assessing the appropriateness of the outcomes.

These appendices are not therefore included with the documentation for Senate. They can, however, be made available to Senators should they so wish.

Major modifications described in the Action Plan, contained within the Final Assessment Report, are subject to approval by the Carleton University Committee on Quality Assurance, the Senate Committee on Curriculum, Admission, and Studies Policy, the Senate Academic Program Committee (SAPC) and Senate as outlined in articles 7.5.1 and 5.1 of Carleton's IQAP.

Once approved by Senate, the Final Assessment Report, Executive Summary and Action Plan will be forwarded to the Ontario Universities' Council on Quality Assurance and to Carleton's Board of Governors for information. The Executive Summary and Action Plan will be posted on the website of Carleton University's Office of the Vice-Provost and Associate Vice-President

(Academic), as required by the provincial Quality Assurance Framework and Carleton's IQAP.

Senate Motion June 21, 2019

THAT Senate approve the Final Assessment Report and Executive Summary arising from the Cyclical Review of the undergraduate programs in Biology.

**CARLETON UNIVERSITY COMMITTEE ON
QUALITY ASSURANCE
Cyclical Review of the undergraduate programs
in Biology
Executive Summary and Final Assessment Report**

This Executive Summary and Final Assessment Report of the cyclical review of Carleton's undergraduate program in Biology are provided pursuant to the provincial Quality Assurance Framework and Carleton's Institutional Quality Assurance Process (IQAP).

EXECUTIVE SUMMARY

The undergraduate programs in Biology reside in the Department of Biology, a unit administered by the Faculty of Science.

As a consequence of the review, the programs were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of good quality. (Carleton's IQAP 7.2.12).

The External Reviewers' report offered a very positive assessment of the programs. Within the context of this positive assessment, the report nonetheless made a number of recommendations for the continuing enhancement of the programs. These recommendations were productively addressed by the Chair of the Department of Biology, and the Dean of the Faculty of Science in a response to the External Reviewers' report and Action Plan that was submitted to CUCQA on May 22, 2019.

FINAL ASSESSMENT REPORT

Introduction

The undergraduate programs in Biology reside in the Department of Biology, a unit administered by the Faculty of Science. This review was conducted pursuant to the Quality Assurance Framework and Carleton's Institutional Quality Assurance Process (IQAP). As a consequence of the review, the programs were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of good quality. (Carleton's IQAP 7.2.12).

The site visit, which took place on December 6-7th, 2018, was conducted by Dr. Kenneth Wilson from the University of Saskatchewan and Dr. Yves Mauffette from the Université du Québec à Montréal. The site visit involved formal meetings with the Provost & Vice-President (Academic), The Vice-Provost & Associate Vice-President (Academic), Assistant Vice-President (Academic), the Dean of the Faculty of Science, and the Chair of the Department of Biology. The review committee also met with faculty members, staff, and undergraduate students.

The External Reviewers' report, submitted on January 4, 2019, offered a very positive assessment of the program.

This Final Assessment Report provides a summary of:

- Strengths of the programs
- Challenges faced by the programs
- Opportunities for program improvement and enhancement
- The Outcome of the Review
- The Action Plan

This report draws on five documents:

- The Self-study developed by members of the Department of Biology (Appendix A)
- The Report of the External Review Committee (Appendix B).
- Communication from CUCQA regarding the outcome of the external review (Appendix C).
- The response and implementation plan from the Chair of the Department of Biology and the Dean of the Faculty of Science (Appendix D).
- The internal discussant's recommendation report (Appendix E).

Appendix F contains brief biographies of the members of the External Review Committee.

This Final Assessment Report contains the Implementation Plan (Appendix D) agreed to by the Chair of the Department of Biology and the Dean of the Faculty of Science, for the implementation of

recommendations for program enhancement identified as part of the cyclical program review process.

The Action Plan identifies who is responsible for implementing the agreed upon recommendations, as well as the timelines for implementation and reporting. The following sections include excerpts provided from the External Reviewers' Report.

Strengths of the programs

General

The External Reviewer's reported that "the biology programs offered at Carleton University are of high quality and compare easily with other leading programs within the country."

Faculty

Speaking with regard to faculty, the external reviewers' stated:

"The faculty members and instructional staff of the Department of Biology were very committed to teaching and research excellence. As mentioned above, as a group they have made significant achievements in both areas. From that point of view, they have a well-balanced team. There is a focus on hiring outstanding new faculty who are committed to excellent teaching and have excellent communication skills."

Students

The external reviewers noted "the experience provided to students in the lab courses being an important complement in their training," and praised the involvement of lab coordinators in providing "an excellent learning experience for students." They identified the alignment of program structure and faculty research as helping to ensure the quality of the student experience, and identified student and faculty connection through capstone courses which help students envision future options.

Curriculum

The external reviewers were satisfied with the curriculum of the program stating that:

"The programs offered provide a sound intellectual profile in biology and strongly reflect the research strengths of the faculty. The four concentrations added in 2011 is a strength of the overall program and a good example of the research interests of the faculty. The opportunity of having these specializations could lead to greater employability by adding professional experiences in the curriculum."

Opportunities for program improvement and enhancement

The External Reviewers' Report made 8 recommendations for improvement:

1. Inadequate office support for the undergraduate program administration and poor department- student communications.
2. Poor quality undergraduate teaching lab space. The presence of noisy equipment, uncomfortable, and possibly hazardous furniture, and remote location with regard to the rest of the department and instructor offices detract from a strong recruitment tool. Students want to attend Carleton Biology because of the hands-on undergraduate labs, we expect that many are turned off by the experience.
3. Students feel overwhelmed during their 1st and 2nd years of the program due to the perceived workload. Many of their required courses have accompanying labs, many have weekly assignments, and there is no coordination across courses to stagger due dates or focus on shared learning outcomes.
4. Keep working on finding right balance between content and skills based LOs. There is still a need to proper assessment or certain LOs (reflection is needed to establish soft skills).
5. Improve communications between the department and students. This will be a challenge but is a much cheaper and faster alternative to a new biology building.
6. Explore opportunities to establish cohort groups within the Biology undergraduate population. This could be done with lab sections, and through encouraging additional meets ups throughout the term. This may be another way to aid in student recruitment and retention by cultivating the students' sense of belonging to the Department of Biology. Yet another way to leverage additional communications support.
7. Keep working on the culture of pedagogical awareness. The monthly meetings are great, a genuine interest on the part of a number of faculty and staff in the STOL will pay off in the long run. They will need continued support and encouragement because these are long term goals that can impact the entire department and possibly beyond.
8. Work on developing better survey of graduates. This would answer a number of the unknowns regarding the program, such as: are the BSc with Concentrations providing the intended impact for students? Why is the attrition rate higher than other units on campus? Working with data will allow the Faculty and Department to develop better answers to these

questions.

CUCQA considered all recommendations pertinent and invited the Department to address each of them in their response and Implementation Plan.

The Outcome of the Review

As a consequence of the review, the undergraduate programs in Biology were categorised by CUCQA as being of **GOOD QUALITY** (Carleton's IQAP 7.2.12).

The Action Plan

The recommendations that were put forward as a result of the review process were productively addressed by the Chair of the Department of Biology and the Dean of the Faculty of Science, in a response to the External Reviewers' report and Implementation Plan that was considered by CUCQA on May 22, 2019. The Department agreed unconditionally to recommendations #1, 2, and 3, and agreed to recommendations #7 and 8 if resources permit. They also agreed to recommendations #4, 5, and 6 while noting that additional resources could help facilitate these recommendations.

It is to be noted that Carleton's IQAP provides for the monitoring of Implementation plans. A midway report will be submitted by the academic unit and Faculty Dean, and forwarded to CUCQA for its review. In the case of the programs in Biology the majority of monitoring will be achieved by means of a Midway Report, which is expected by June 30th, 2022.

The Next Cyclical Review

The next cyclical review of the undergraduate programs in Biology will be conducted during the 2024-25 academic year.

IMPLEMENTATION PLAN

Programs Being Reviewed:

External Reviewer Recommendation & Categorization	Action Item	Owner	Timeline	Will the action described require calendar changes? (Y or N)
<p>1. Keep working on the culture of pedagogical awareness. (Opportunity). The monthly meetings are great, a genuine interest on the part of a number of faculty and staff in the SoTL will pay off in the long run. They will need continued support and encouragement because these are long term goals that can impact the entire department and possibly beyond.</p>	<p>Monthly teaching conversations</p>	<p>Mullally</p>	<p>Ongoing</p>	<p>N</p>
<p>2. Keep working on finding the right balance between content and skills based LOs. (Opportunity). There is still a need for proper assessment of certain LOs (reflection is needed to establish soft skills).</p>	<p>a. Form Assessment Team b. Assessment Team meets and discusses assessment</p>	<p>Rowland/Assessment Team Assessment Team</p>	<p>March 2019 March 2019-</p>	<p>Yes, if we decide that a new course or program change is the best way to ensure that LOs are being achieved.</p>
<p>3. Students feel overwhelmed during their 1st- and 2nd-years of the program due to the perceived workload. (Weakness).</p>	<p>a. Revising first-year labs b. Coordination of first- and second-year assignments</p>	<p>a. Benchmarking implementation team b. Within department: first- and second-year</p>	<p>a. Ongoing b. August 2019</p>	<p>N</p>

<p>Many of their required courses have accompanying labs, many have weekly assignments, and there is no coordination across courses to stagger due dates or focus on shared learning outcomes.</p>	<p>with courses from other units</p>	<p>profs communicate; between units: Dean's office (Cappuccino) to facilitate mid-term exam coordination between units.</p>		
<p>4. The graduate student TAs would like better training in how to fill the role of Teaching Assistant. Key points that could be addressed were: basic professionalism, first aid, marking, and conflict resolution.</p> <p><i>Note: Not a formal recommendation, was added by unit based on text in External Reviewers' Report.</i></p>	<p>Look into of requiring a course or workshop in Teaching/Mentoring for all grads in our MSc and PhD programs</p>	<p>Grad Studies Committee and Mullally</p>	<p>Sept 2019 Begin discussions (further action depends on coordination with U Ottawa colleagues, and the results of graduate program cyclical review)</p>	<p>N (possible Grad Calendar change)</p>
<p>5. Work on developing better survey of graduates. (Opportunity). This would answer a number of the unknowns regarding the program, such as: are the B.Sc with Concentrations providing the intended impact for the students? Why is the attrition rate higher than other units on campus? Working with data will allow the Faculty and Department to develop better answers to these questions.</p>	<p>a. New survey of upper-year students</p> <p>b. Develop method to survey graduates & maintain database of graduates</p> <p>Resources: Faculty time</p>	<p>a. Rowland and Recruitment & Retention Committee</p> <p>b. Recruitment & Retention Committee</p>	<p>a. already developed and ready for distribution</p> <p>b. March 2019</p>	<p>N</p>
<p>6. Explore opportunities to establish cohort groups within the Biology undergraduate population. (Opportunity). This could be done within lab sections, and through encouraging additional meet ups throughout the term. This may be another way to aid in student recruitment and retention by cultivating the students' sense of belonging to the Department of Biology. Yet another way to leverage additional communications support.</p>	<p>a. Already put in place for BSc Biology and Biotechnology (2nd- , 3rd- and 4th year common courses); explore possibility for other concentrations</p> <p>b. Analyze data from earlier cohort efforts implemented through the ODS.</p> <p>Resources: Faculty time</p>	<p>a. Recruitment & Retention Committee; Curriculum Committee</p> <p>b. Recruitment & Retention Committee</p>	<p>a. Ongoing</p> <p>b. March 2019</p>	<p>Possibly</p>

<p>7. Inadequate office support for the undergraduate program administration and poor department-student communications. (Concern).</p>	<p>a. Explore need for additional admin staff or reorganization of staff duties.</p> <p>b. UG chair needs ability to email students</p> <p>b. Area-specialist assistant advisors to support UG chair</p>	<p>a. Rowland/Dawson/Dean</p> <p>b. Rowland/Dawson</p> <p>c. Rowland/Dawson</p>	<p>a. July 2019</p> <p>b. March 2019</p> <p>c. July 2019</p>	<p>N</p>
<p>8. Poor quality undergraduate teaching lab space. (Concern). The presence of noisy equipment, uncomfortable, and possibly hazardous furniture, and the remote location with regard to the rest of the department and instructor offices detract from a strong recruitment tool. Students want to attend Carleton Biology because of the hands-on undergraduate labs, we expect that many are turned off by the experience.</p>	<p>a. Replacing outdated furniture</p> <p>b. Student club space (Biology Society) in Tory</p> <p>c. Long-term plan for new Bioscience building near NB & CTTC to house teaching labs and allow future expansion of Department</p>	<p>a. Rowland/Dean in consultation with lab coordinators</p> <p>b. Rowland/Dean</p> <p>c. Rowland/Dean/Upper Management</p>	<p>a. We will be replacing outdated furniture and have already obtained quotes. Lab stools will possibly be replaced in time for Fall 2019; benches will be replaced in 2020.</p> <p>b. Students have been offered departmental space on a booking basis. It is unlikely that permanent space can be freed up in Tory over the short term for club use.</p> <p>c. Planning to begin in summer 2019</p>	<p>N</p>
<p>9. Improve communications between the department and students. This will be a challenge but is a much cheaper and faster alternative to a new biology building.</p>	<p>a. Explore need for additional admin staff or reorganization of staff duties.</p> <p>b. UG chair needs ability to email students</p> <p>b. Area-specialist assistant advisors to support UG chair</p>	<p>a. Rowland/Dawson/Dean</p> <p>b. Rowland/Dawson</p> <p>c. Rowland/Dawson</p>	<p>a. July 2019</p> <p>b. March 2019</p> <p>c. July 2019</p>	<p>N</p>




DATE: June 21, 2019

TO: Senate

FROM: Dr. Jerry Tomberlin, Provost and Vice-President (Academic), and Chair, Senate Academic Program Committee

RE: Final Assessment Report and Executive Summary: Undergraduate & Graduate Programs in the Sprott School of Business



The purpose of this memorandum is to request that Senate approve the Final Assessment Report and Executive Summary arising from the cyclical review of the undergraduate and graduate programs in the Sprott School of Business.

The request to Senate is based on a recommendation from the Senate Academic Program Committee (SAPC), which passed the following motion at its meeting of June 13, 2019:

THAT SAPC recommends to SENATE the approval of the Final Assessment Report and Executive Summary arising from the cyclical program review of the undergraduate and graduate programs in the Sprott School of Business.

The Final Assessment Report and Executive Summary is provided pursuant to articles 4.2.5-4.2.6 of the provincial Quality Assurance Framework and article 7.2.23 of Carleton's Institutional Quality Assurance Process (IQAP). Article 7.2.23.3 of Carleton's IQAP (passed by Senate on June 26th, 2015 and ratified by the Ontario Universities Council on Quality Assurance on September 25th, 2015) stipulates that, in approving Final Assessment Reports and Executive Summaries 'the role of SAPC and Senate is to ensure that due process has been followed and that the conclusions and recommendations contained in the Final Assessment Report and Executive Summary are reasonable in terms of the documentation on which they are based.'

In making their recommendation to Senate and fulfilling their responsibilities under the IQAP, members of SAPC were provided with all the appendices listed on page 2 of the Final Assessment Report and Executive Summary. These appendices constitute the basis for reviewing the process that was followed and assessing the appropriateness of the outcomes.

These appendices are not therefore included with the documentation for Senate. They can, however, be made available to Senators should they so wish.

Major modifications described in the Action Plan, contained within the Final Assessment Report, are subject to approval by the Carleton University Committee on Quality Assurance, the Senate Committee on Curriculum, Admission, and Studies Policy, the Senate Academic Program Committee (SAPC) and Senate as outlined in articles 7.5.1 and 5.1 of Carleton's IQAP.

Once approved by Senate, the Final Assessment Report, Executive Summary and Action Plan will be forwarded to the Ontario Universities' Council on Quality Assurance and to Carleton's Board of

Governors for information. The Executive Summary and Action Plan will be posted on the website of Carleton University's Office of the Vice-Provost and Associate Vice-President (Academic), as required by the provincial Quality Assurance Framework and Carleton's IQAP.

Senate Motion June 21, 2019

THAT Senate approve the Final Assessment Report and Executive Summary arising from the Cyclical Review of the undergraduate and graduate programs in the Sprott School of Business.

**CARLETON UNIVERSITY COMMITTEE ON
QUALITY ASSURANCE
Cyclical Review of the programs
in Business
Executive Summary and Final Assessment Report**

This Executive Summary and Final Assessment Report of the cyclical review of Carleton's undergraduate and graduate programs in Business are provided pursuant to the provincial Quality Assurance Framework and Carleton's Institutional Quality Assurance Process (IQAP).

EXECUTIVE SUMMARY

The undergraduate and graduate programs in Business reside in the Sprott School of Business.

A cyclical review of these programs was completed in conjunction with the accreditation review process undertaken by the Association to Advance Collegiate Schools of Business (AACSB).

As a result of the review, the programs were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of **GOOD QUALITY**. (Carleton's IQAP 7.2.12).

The Continuous Improvement Review Team Report offered a very positive assessment of the programs. Within the context of this positive assessment, the report nonetheless made a number of recommendations for the continuing enhancement of the programs. These recommendations were productively addressed by the Dean of the Sprott School of Business and the Dean of the Faculty of Graduate and Postdoctoral Affairs in a Unit Response and Action Plan that was submitted to CUCQA on June 12, 2019.

FINAL ASSESSMENT REPORT

Introduction

The undergraduate and graduate programs in Business reside in the Spratt School of Business. This review was conducted pursuant to the Quality Assurance Framework and Carleton's Institutional Quality Assurance Process (IQAP). As a result of the review, the programs were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of good quality. (Carleton's IQAP 7.2.12).

The Spratt School of Business is accredited by the Association to Advance Collegiate Schools of Business (AACSB). As result, the Office of the Vice-Provost and the Spratt School of Business entered an agreement to align the cyclical review and accreditation processes.

To facilitate this alignment, the criteria required as part of the AACSB accreditation was mapped to the generic criteria requirements of Carleton's Institutional Quality Assurance Process, and the Quality Assurance Framework. Documents required for the AACSB accreditation were reviewed in place of cyclical review documentation and were compliant with the requirements of the IQAP.

The site visit, which took place October 14-16th, 2018, was conducted by the review team of the Association to Advance Collegiate Schools of Business (AACSB) and stands in the cyclical review process. The external reviewers involved were Lawrence C. Rose from California State University San Bernardino, Paul Tesluk from the University of Buffalo, and Wilfred Zerb from Fairleigh Dickinson University. The external reviewers met with the Provost, the Vice-Provost and Associate Vice-President (Academic), the Dean of the Spratt School of Business, and Associate Deans of the Spratt School of Business. Meetings with faculty, professional staff, and students were held.

The Continuous Improvement Review Team Report, submitted on November 11, 2018 offered a very positive assessment of the program.

This Final Assessment Report provides a summary of:

- Strengths of the programs
- Challenges faced by the programs
- Opportunities for program improvement and enhancement
- The Outcome of the Review
- The Action Plan

This report draws on five documents:

- The Continuous Improvement Review Report developed by members of the Spratt School of Business (Appendix A)
- The Continuous Improvement Review Team Report (Appendix B).
- Communication from CUCQA regarding the outcome of the external review (Appendix C).
- The response and action plan from the Dean of the Spratt School of Business and the Dean of the Faculty of Graduate and Postdoctoral Affairs (Appendix D).
- The internal discussant's recommendation report (Appendix E).

This Final Assessment Report contains the Action Plan (Appendix D) agreed to by the Dean of the Sprott School of Business and the Dean of the Faculty of Graduate and Postdoctoral Affairs, for the implementation of recommendations for program enhancement identified as part of the accreditation process.

The Action Plan identifies who is responsible for implementing the agreed upon recommendations, as well as the timelines for implementation and reporting.

Strengths of the programs

General

The Continuous Improvement Review Team Report stated, “that the Sprott School of Business has demonstrated overall high quality and a culture of continuous improvement.” The team “heard praise for the Sprott School’s student-oriented culture, praise which was confirmed as deserved in meetings with graduate and undergraduate students”; this student-oriented culture is provided by both faculty and staff. The Sprott School of Business was also commended for its program and curricular innovations, including “the launching of MBA programs in China and Colombia, and the development of the Masters in Technology Innovation Management”.

Faculty

The Continuous Improvement Review Team Report notes that faculty “expressed a strong sense of engagement and ownership over the process and content of the fundamental components.” They noted that the School “values a broad spectrum of intellectual contributions including applied and pedagogical research.”

Students

The external reviewers heard praise for the student-oriented culture, which was confirmed in meetings with graduate and undergraduate students. They also observed that students have opportunity to be involved with strategic planning initiatives and have access to career advising and preparation workshops.

Curriculum

The external reviewers noted that the curriculum “facilitates student academic and professional engagement appropriate to the degree program type and learning goals.”

Opportunities for program improvement and enhancement

The External Reviewers’ Report made 7 recommendations for improvement:

1. NAME: AOL Documentation
CATEGORY: Recommendation

In section 5 of the CIR, the Sprott School of Business combines description of program enrolments and characteristics with curriculum improvements derived from AoL processes and from other sources of information. On the one hand this provides a rich, holistic view of each program and its management. At the same time, in order to show how AoL processes are implemented and used, the explanation would benefit from a clearer, more concrete, and separated presentation of assessment results, decision making processes, and

which curriculum improvements followed particular results and why those improvements were chosen. Therefore, at its next CIR, the Sprott School of Business should explain the links between assessment results, decision-making, curricular actions if taken, and re-assessment results for each learning goal.

2. NAME: Strategic Plan

CATEGORY: Recommendation

Strategic plan development should be given continued attention. The review team believes that it is important that the process initiated to create a new strategic plan for the Sprott School of Business continue forward. The team concurs with the decision of the interim dean and the school's leadership to create a 2-3 year window to allow a new dean to get started and maintain a clear direction and trajectory for the school during the transition to the new building.

3. NAME: BCom Enrolment

CATEGORY: Recommendation

Although the enrolment levels in the Bachelor of Commerce (BCom) program have remained largely consistent, applications between 2015-2017 dropped by approximately 20%. This is a concern to school administrators and reflective of the increasingly competitive Ontario market. The PRT recommends that continuing attention be given to enrolment and the situation be updated at the next CIR.

4. NAME: Benchmarking Research

CATEGORY: Future Opportunity

The Peer Review Team observes that the Sprott Journal Quality Framework, is based on the quality rankings of three journal quality lists (the Australian Business Deans Council (ABDC) Journal Rankings List, the Association of Business Schools (ABS) Academic Journal Guide, and the Centre Nationale de la Recherche Scientifique (CNRS) list). We encourage benchmarking against the journal lists used by Sprott's identified peer, competitors and aspirant schools. This could help Sprott faculty target aspirational, valued, and high-quality journals.

5. NAME: TIM Annual Report

CATEGORY: Future Opportunity

The Masters in Technology Innovation Management is a collaboration between the Sprott School of Business and the Faculty of Engineering and Design. It is governed by two deans and the dean of Graduate and Post-doctoral Affairs. Curriculum changes are overseen by the graduate and post-doctoral affairs faculty board. Funding is allocated by the central administration based on the ELBA formulae. There is no formal reporting process on activities in place back to the School or Faculty. Additionally, there is concern over the identity and ownership of the program among some stakeholders. The Peer Review Team recommends that the TIM program increases transparency and communication by reporting on its activities annually.

6. NAME: Branding and Communications

CATEGORY: Future Opportunity

The success and quality of the Sprott School of Business programs are under noticed and in need of an aggressive branding and communications campaign. The combination of new strategic plan, ideally complemented with a clear and compelling message on the School's core values and vision, and featuring the upcoming new state-of-the-art building, can make a compelling message that can help raise the visibility and reputation of the School.

7. NAME: Technology Skills

CATEGORY: Future Opportunity

Conversations with Undergraduate students indicated that they desired to have more advanced technological and software skills relevant to their disciplines earlier in their studies. They obtain some of these skills by engaging in out of the classroom activities but worry that the average student is missing out on the same opportunities to gain marketable skills. Both Undergraduate and Masters students were looking for more flexibility and choice in their programs of study.

The Outcome of the Review

As a result of the review, the undergraduate and graduate programs in Business were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of **GOOD QUALITY** (Carleton's IQAP 7.2.12).

The Action Plan

The recommendations that were put forward as a result of the review process were productively addressed by the Dean of the Sprott School of Business and the Dean of the Faculty of Graduate and Postdoctoral Affairs in a response to the Continuous Improvement Review Team Report and Action Plan that was considered by CUCQA on June 12, 2019. The School agreed unconditionally to recommendations #1, 2, 4, 5, and if resources permit, recommendations # 2, 6, and 7.

It is to be noted that Carleton's IQAP provides for the monitoring of action plans. A midway report is to be submitted by the academic unit and Faculty Dean, and forwarded to CUCQA for its review by June 30th, 2021.

The Next Cyclical Review

The next cyclical review of the undergraduate and graduate programs in Business will be conducted during the 2024-25 academic year.

<p>NAME: Strategic Plan CATEGORY: Recommendation</p> <p><i>IV.2. Strategic plan development should be given continued attention. The review team believes that it is important that the process initiated to create a new strategic plan for the Sprott School of Business continue forward. The team concurs with the decision of the interim dean and the school's leadership to create a 2-3 year window to allow a new dean to get started and maintain a clear direction and trajectory for the school during the transition to the new building.</i></p>	<p>1) Develop a three-year strategic plan (2019-21) for the Sprott School of Business.</p>	<p>Dean</p>	<p>COMPLETED</p>	<p>N</p>
<p>NAME: BCom Enrolment CATEGORY: Recommendation</p> <p><i>IV.3. Although the enrolment levels in the Bachelor of Commerce (BCom) program have remained largely consistent, applications between 2015-2017 dropped by approximately 20%. This is a concern to school administrators and reflective of the increasingly competitive Ontario market. The PRT recommends that continuing attention be given to enrolment and the situation be updated at the next CIR.</i></p>	<p>1) Develop undergraduate recruitment strategy and action plan.</p>	<p>Associate Dean, Undergraduate</p>	<p>January 2019 to December 2019</p>	<p>N</p>
<p>NAME: Benchmarking Research CATEGORY: Future Opportunity</p> <p><i>VIII. A. 1. The Peer Review Team observes that the Sprott Journal Quality Framework, is based on the quality rankings of three journal quality lists (the Australian Business Deans Council (ABDC) Journal Rankings List, the Association of Business Schools (ABS) Academic Journal Guide, and the Centre Nationale de la Recherche Scientifique (CNRS) list). We encourage benchmarking against the journal lists used by Sprott's identified peer, competitors and aspirant schools. This could help Sprott faculty target aspirational, valued, and high-quality journals.</i></p>	<p>1) Identify research-specific peer, competitor and aspirant business schools to be used in benchmarking to be included in annual Research Portfolio report.</p>	<p>Research Committee</p>	<p>April 2019 to December 2019</p>	<p>N</p>


<p>NAME: TIM Annual Report CATEGORY: Future Opportunity</p> <p><i>VIII.B.1. The Masters in Technology Innovation Management is a collaboration between the Sprott School of Business and the Faculty of Engineering and Design. It is governed by two deans and the dean of Graduate and Post-doctoral Affairs. Curriculum changes are overseen by the graduate and post-doctoral affairs faculty board. Funding is allocated by the central administration based on the ELBA formulae. There is no formal reporting process on activities in place back to the School or Faculty. Additionally, there is concern over the identity and ownership of the program among some stakeholders. The Peer Review Team recommends that the TIM program increases transparency and communication by reporting on its activities annually.</i></p>	<p>1) TIM Program to develop annual report on activities identified by ITEC.</p>	<p>TIM Steering Committee and ITEC</p>	<p>April 2019 to September 2019</p>	<p>N</p>
<p>NAME: Branding and Communications CATEGORY: Future Opportunity</p> <p><i>VIII.B.2. The success and quality of the Sprott School of Business programs are under noticed and in need of an aggressive branding and communications campaign. The combination of new strategic plan, ideally complemented with a clear and compelling message on the School's core values and vision, and featuring the upcoming new state-of-the-art building, can make a compelling message that can help raise the visibility and reputation of the School.</i></p>	<p>1) Undergo a reputational campaign for the Sprott School of Business.</p> <p>2) Undergo a rebranding of the School, in conjunction with the University</p>	<p>Dean</p> <p>Dean</p>	<p>September 2018 to August 2019</p> <p>June 2019 to May 2020</p>	<p>N</p> <p>N</p>
<p>NAME: Technology Skills CATEGORY: Future Opportunity</p> <p><i>VIII.B.3. Conversations with Undergraduate students indicated that they desired to have more advanced technological and software skills relevant to their disciplines earlier in their studies. They obtain some of these skills by engaging in out of the classroom activities but worry that the average student is missing out on the same opportunities to gain marketable skills. Both Undergraduate and Masters students were looking for more flexibility and choice in their programs of study.</i></p>	<p>1) Incorporate job-ready technology skills into assignments in core courses.</p>	<p>Associate Dean, Undergraduate</p>	<p>November 2018 to May 2020</p>	<p>N</p>

DATE: June 21, 2019

TO: Senate

FROM: Dr. Jerry Tomberlin, Provost and Vice-President (Academic), and Chair, Senate Academic Program Committee

RE: Final Assessment Report and Executive Summary: Graduate Programs in Sustainable Energy



The purpose of this memorandum is to request that Senate approve the Final Assessment Report and Executive Summary arising from the cyclical review of the graduate programs in Sustainable Energy.

The request to Senate is based on a recommendation from the Senate Academic Program Committee (SAPC), which passed the following motion at its meeting of June 13, 2019:

THAT SAPC recommends to SENATE the approval of the Final Assessment Report and Executive Summary arising from the cyclical program review of the graduate programs in Sustainable Energy.

The Final Assessment Report and Executive Summary is provided pursuant to articles 4.2.5-4.2.6 of the provincial Quality Assurance Framework and article 7.2.23 of Carleton's Institutional Quality Assurance Process (IQAP). Article 7.2.23.3 of Carleton's IQAP (passed by Senate on June 26th, 2015 and ratified by the Ontario Universities Council on Quality Assurance on September 25th, 2015) stipulates that, in approving Final Assessment Reports and Executive Summaries 'the role of SAPC and Senate is to ensure that due process has been followed and that the conclusions and recommendations contained in the Final Assessment Report and Executive Summary are reasonable in terms of the documentation on which they are based.'

In making their recommendation to Senate and fulfilling their responsibilities under the IQAP, members of SAPC were provided with all the appendices listed on page 2 of the Final Assessment Report and Executive Summary. These appendices constitute the basis for reviewing the process that was followed and assessing the appropriateness of the outcomes.

These appendices are not therefore included with the documentation for Senate. They can, however, be made available to Senators should they so wish.

Major modifications described in the Action Plan, contained within the Final Assessment Report, are subject to approval by the Carleton University Committee on Quality Assurance, the Senate Committee on Curriculum, Admission, and Studies Policy, the Senate Academic Program Committee (SAPC) and Senate as outlined in articles 7.5.1 and 5.1 of Carleton's IQAP.

Once approved by Senate, the Final Assessment Report, Executive Summary and Action Plan will be forwarded to the Ontario Universities' Council on Quality Assurance and to Carleton's Board of Governors for information. The Executive Summary and Action Plan will be posted

on the website of Carleton University's Office of the Vice-Provost and Associate Vice-President (Academic), as required by the provincial Quality Assurance Framework and Carleton's IQAP.

Senate Motion June 21, 2019

THAT Senate approve the Final Assessment Report and Executive Summary arising from the Cyclical Review of the graduate programs in Sustainable Energy.

**CARLETON UNIVERSITY COMMITTEE ON
QUALITY ASSURANCE
Cyclical Review of the graduate programs
in Sustainable Energy
Executive Summary and Final Assessment Report**

This Executive Summary and Final Assessment Report of the cyclical review of Carleton's graduate programs in **Sustainable Energy** are provided pursuant to the provincial Quality Assurance Framework and Carleton's Institutional Quality Assurance Process (IQAP).

EXECUTIVE SUMMARY

The graduate programs in Sustainable Energy are jointly offered by the Faculty of Engineering and the Faculty of Public Affairs.

As a consequence of the review, the programs were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of **GOOD QUALITY** (Carleton's IQAP 7.2.12).

The External Reviewers' report offered a very positive assessment of the programs. Within the context of this positive assessment, the report nonetheless made a number of recommendations for the continuing enhancement of the programs. These recommendations were productively addressed by the program lead of the graduate programs in Sustainable Energy, the Dean of the Faculty of Public Affairs, the Dean of the Faculty of Engineering, and the Dean of the Faculty of Graduate and Postdoctoral Affairs in a response to the External Reviewers' report that was submitted to CUCQA on March 13, 2019.

An Action Plan detailing how, when and by whom the recommendations will be implemented was received and approved by CUCQA on May 22, 2019.

FINAL ASSESSMENT REPORT

Introduction

The graduate programs in Sustainable Energy are jointly offered by the Faculty of Engineering and the Faculty of Public Affairs. This review was conducted pursuant to the Quality Assurance Framework and Carleton's Institutional Quality Assurance Process (IQAP). As a consequence of the review, the programs were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of **GOOD QUALITY** (Carleton's IQAP 7.2.12).

The site visit, which took place on October 11 and 12th, 2018 was conducted by Dr. Warren Mabee from Queens University and Dr. Andrew Rowe from University of Victoria. The site visit involved formal meetings with the Vice-Provost and Associate Vice-President (Academic), the Dean of the Faculty of Public Affairs, the Dean of the Faculty of Engineering, and the Dean of the Faculty of Graduate and Postdoctoral Affairs. The review committee also met with faculty members, contract instructors, staff, and graduate students.

The External Reviewers' report, submitted on October 15, 2018 offered a very positive assessment of the program.

This Final Assessment Report provides a summary of:

- Strengths of the programs
- Challenges faced by the programs
- Opportunities for program improvement and enhancement
- The Outcome of the Review
- The Action Plan
-

This report is supported by five documents:

- The Self-study developed by members of the review team (Appendix A)
- The Report of the External Review Committee (Appendix B).
- Communication from CUCQA regarding the outcome of the external review (Appendix C).
- The response and action plan from the program lead for Sustainable Energy, the Dean of the Faculty of Public Affairs, the Dean of the Faculty of Engineering and the Dean of the Faculty of Graduate and Postdoctoral Affairs (Appendix D).
- The internal discussant's recommendation report (Appendix E).

Appendix F contains brief biographies of the members of the External Review Committee.

This Final Assessment Report contains the Action Plan (Appendix D) agreed to by the program lead for Sustainable Energy, the Dean of the Faculty of Engineering, the Dean of the Faculty of Public Affairs, and the Dean of the Faculty of Graduate and Postdoctoral Affairs, regarding the implementation of recommendations for program enhancement to have been advanced as a consequence of the cyclical program review process.

The Action Plan provides an account of who is responsible for implementing the agreed upon recommendations, as well as of the timelines for implementation and reporting.

Strengths of the program

General

The external reviewers identified the following as strengths of the program: small class sizes, a good number of international and female students in the program, and ability of the program to spark interest in research for students.

Faculty

The external reviewers observed that there are some great opportunities for international students, with faculty being impressed by their ability. They noted that there is capacity for courses and projects to be designed to take advantage of the background and experience of different students. Students “spoke positively of the project course as an opportunity to bring the different streams together. One faculty member in particular referred to the strong ‘esprit de corps’ that these experiences have built. There is good evidence that there is a core identity here that is moving forward.”

Students

The current enrolment target of 50% from MA and 50% from engineering was well received by the external reviewers and provides a sense of balance in the program. The external reviewers also noted that there is significantly higher female representation in the SERG program when compared to Carleton’s undergraduate engineering programs, which could serve as a showcase for improving equity metrics at Carleton. In speaking to the experience of students, the external reviewers identified that “students in the program have benefited from research experience that has whetted their appetite for further academic pursuits.”

Curriculum

The external reviewers observed that new courses are being developed that will expand the offerings in SERG” and mentioned new development in MECH courses.

Opportunities for program improvement and enhancement

The External Reviewers’ Report made 11 recommendations for improvement:

1. **Communications: (Concern)** *Students expressed concern with insufficient information regarding requirements for seminar attendance. Students were unsure of how to deal with scheduling conflicts between the seminar and other courses. Because seminars are often scheduled in the evening, attendance was also an issue for those students who may have part-time jobs.*
2. **Course offerings: (Concern)** *Students felt available electives related to sustainable energy were limited in number. In addition, unavailability of courses listed in the calendar impacted student expectations and ability to plan their program. Clarification regarding the relationship with University of Ottawa, reciprocal arrangements for course credit, and the process for determining course acceptability are needed.*

3. **Funding: (Concern)** *Two of the unique aspects of the program are the seminar series involving external speakers and field-trips to communities and sustainable energy projects. Currently, there is a lack of funding allocated to the program for speaker travel and field activities.*
4. **Administrative Support: (Weakness)** *A number of communication, advising, and outreach challenges can be addressed through additional administrative support. A recent addition of a 0.25 position through engineering will address some existing weaknesses; however, it was noted that a single administrative contact for both Policy and Engineering would be more effective than two separate part-time positions. When compared to comparable programs, there is evidence that a full-time administrative position is justified if enrollment targets are met.*
5. **Orientation: (Concern)** *Students in the Policy-stream were happy to have an orientation session with specific attention to the Sustainable Energy Program. Engineering students felt they were not well-informed at entry to the program and would have liked a similar orientation and a chance to meet the Policy students.*
6. **Program website: (Weakness)** *The website is not up to date and lacks information on the latest program structure. Students also felt the website could be better used to provide information on seminar scheduling, speakers, and social events.*
7. **Offers and notification: (Weakness)** *Both Policy and Engineering students indicated a lack of communication after notifying Carleton of their acceptance of the admission offer. This was contrasted with other schools that immediately responded via email.*
8. **Program size: (Opportunity).** *There is potential to increase the breadth and size of the program with participation of other units. These may include Business, Civil and Environmental engineering. This may also provide relevant elective courses and address concerns about course availability.*
9. **Co-op offerings: (Opportunity)** *Students from both Policy and Engineering streams expressed an interest enhancing co-op opportunities. MA students would like to see placements beyond the public service, including NGOs and industry. MEng students are interested in co-op placements; however, this is currently unavailable. While there appears to be some challenges to MEng co-op offerings due to potential demands from other MEng students not in the Sustainable Energy program, this is an opportunity for program enhancement if this can be enabled.*
10. **Equity: (Opportunity)** *Increased demand for the program may be achieved with more promotion, communication, and outreach. The area of sustainable energy is attractive to a wide range of backgrounds and can help increase diversity. An increased pool of applicants would strengthen the interdisciplinary mix between Policy and Engineering.*
11. **Internationalization: (Opportunity)** *Increased participation of international students would strengthen student exposure to non-Canadian energy issues. While there appears to be some constraints with regards to domestic and international student composition, there is significant demand from international students for the MEng program.*

CUCQA considered all recommendations pertinent and invited the unit to address each of them in their response and Action Plan.

The Outcome of the Review

As a consequence of the review, the graduate programs in Sustainable Energy were categorised by the Carleton University Committee on Quality Assurance (CUCQA) as being of **GOOD QUALITY** (Carleton's IQAP 7.2.12).

The Action Plan

The recommendations that were put forward as a result of the review process were productively addressed by the program lead of Sustainable Energy, the Dean of the Faculty of Public Affairs, the Dean of the Faculty of Engineering, and the Dean of the Faculty of Graduate and Postdoctoral Studies in a response to the External Reviewers' report that was considered by CUCQA on March 13, 2019. An Action Plan detailing how, when and by whom the recommendations will be implemented was received and approved by CUCQA on May 22, 2019.

The unit was generally pleased with the report and unconditionally agreed to implement recommendations #1, 5, 6, 7, 8, 9, and 10, and if resources permit, recommendations #2, 3, 4, and 11.

It is to be noted that Carleton's IQAP provides for the monitoring of action plans. A joint report will be submitted by the academic unit(s) and Faculty Dean(s) and forwarded to CUCQA for its review. In the case of the programs in Sustainable Energy the majority of monitoring will be achieved by means of an update on the Action Plan, which is expected by June 30th, 2021.

The Next Cyclical Review

The next cyclical review of the graduate programs in Sustainable Energy will be conducted during the 2023-24 academic year.

ACTION PLAN

Programs Being Reviewed: Sustainable Energy

External Reviewer Recommendation & Categorization	Action Item	Owner	Timeline	Will the action described require calendar changes? (Y or N)
<p>1. Communications: (Concern) <i>Students expressed concern with insufficient information regarding requirements for seminar attendance. Students were unsure of how to deal with scheduling conflicts between the seminar and other courses. Because seminars are often scheduled in the evening, attendance was also an issue for those students who may have part-time jobs.</i></p>	<p>Seminar to be added to scheduled classes</p>	<p>SERG Governance Committee</p>	<p>Fall 2019</p>	<p>N</p>
<p>2. Course offerings: (Concern) <i>Students felt available electives related to sustainable energy were limited in number. In addition, unavailability of courses listed in the calendar impacted student expectations and ability to plan their program. Clarification regarding the relationship with University of Ottawa, reciprocal arrangements for course credit, and the process for determining course acceptability are needed.</i></p>	<ol style="list-style-type: none"> 1. Review current elective offerings and remove courses no longer being offered, or ensure dormant courses are brought back into rotation 2. Make sure course options are communicated to students earlier (by the end of February for the following academic year 3. Better explain to SERG students that they are not permitted to take University of Ottawa courses. 	<p>FED program advisor; SERG Governance Committee</p>	<p>Winter 2019</p>	<p>N</p>
<p>3. Funding: (Concern) <i>Two of the unique aspects of the program are the seminar series involving external speakers and field-trips to communities and sustainable energy projects. Currently, there is a lack of funding allocated to the program for speaker travel and field activities.</i></p>	<p>A meeting will be scheduled between the Chairs and Directors of the departments and schools involved in the program to discuss funding availability. During this meeting (a) existing mechanisms for funding these activities (if any) will be identified and (b) the possibility of</p>	<p>SERG Governance Committee</p>	<p>Winter semester 2019</p>	<p>N</p>

	allocating a specific sum for these activities will be explored.			
4. Administrative Support: (Weakness) <i>A number of communication, advising, and outreach challenges can be addressed through additional administrative support. A recent addition of a 0.25 position through engineering will address some existing weaknesses; however, it was noted that a single administrative contact for both Policy and Engineering would be more effective than two separate part-time positions. When compared to comparable programs, there is evidence that a full-time administrative position is justified if enrollment targets are met.</i>	Convene a meeting with Chairs and Directors of the departments and schools concerned and their respective Deans to explore the possibility of adjusting existing administrative resources without having to secure net new resources.	Chair of SERG Governance Committee	Winter semester 2019	N
5. Orientation: (Concern) <i>Students in the Policy-stream were happy to have an orientation session with specific attention to the Sustainable Energy Program. Engineering students felt they were not well-informed at entry to the program and would have liked a similar orientation and a chance to meet the Policy students.</i>	<ol style="list-style-type: none"> 1. Prepare a welcome package 2. Organize Engineering-side orientation to coincide better with SPPA orientation and start of term 	FED SERG Administrator to prepare welcome package; FED program advisor and FED SERG Administrator to coordinate Fall orientation	Ready for Fall 2019	N
6. Program website: (Weakness) <i>The website is not up to date and lacks information on the latest program structure. Students also felt the website could be better used to provide information on seminar scheduling, speakers, and social events.</i>	<ol style="list-style-type: none"> 1. Attention will be focused on the main website: carleton.ca/sustainable-energy. Other sites will point there. 2. Website will be checked every week for currency 	SERG Governance Committee; Program administrators	Winter semester 2019	N
7. Offers and notification: (Weakness) <i>Both Policy and Engineering students indicated a lack of communication after notifying Carleton of their acceptance of the admission offer. This was contrasted with other schools that immediately responded via email.</i>	<ol style="list-style-type: none"> 1. All students will be sent a friendly welcome email when they accept. 2. A detailed information package will be developed to send out to incoming students in the weeks following acceptance. 3. Request to FGPA to provide the program and participating departments with 	SERG Governance Committee; Assoc. Chair (Graduate Studies), Department of Mechanical and Aerospace Engineering;	June 2019	N

	acceptance notification when applicant accepts the offer of admission	MA program advisor		
8. Program size: (Opportunity). <i>There is potential to increase the breadth and size of the program with participation of other units. These may include Business, Civil and Environmental engineering. This may also provide relevant elective courses and address concerns about course availability.</i>	Initiate exploratory discussions with (a) the Chair of Civil and Environmental Engineering and (b) the Business School to explore future participation in the Sustainable Energy Program. If either possibility is promising, pursue more detailed program development.	Chair of SERG Governance Committee	Exploratory talks Fall 2019	N for now; Y maybe over long term
9. Co-op offerings: (Opportunity) <i>Students from both Policy and Engineering streams expressed an interest enhancing co-op opportunities. MA students would like to see placements beyond the public service, including NGOs and industry. MEng students are interested in co-op placements; however, this is currently unavailable. While there appears to be some challenges to MEng co-op offerings due to potential demands from other MEng students not in the Sustainable Energy program, this is an opportunity for program enhancement if this can be enabled.</i>	Chair of MAE will prepare proposal for co-op office on MEng Co-op. Director of SPPA will work to expand non-government co-ops for MA students.	Chair of MAE; SERG Governance committee (for approval of proposal); Director of SPPA	Proposal by Summer 2019 for 2020-21 Calendar	Y
10. Equity: (Opportunity) <i>Increased demand for the program may be achieved with more promotion, communication, and outreach. The area of sustainable energy is attractive to a wide range of backgrounds and can help increase diversity. An increased pool of applicants would strengthen the interdisciplinary mix between Policy and Engineering.</i>	1. If the administrative changes discussed under 4 above are carried out, ensure this is a core activity. 2. Explore possibility for a targeted communications effort for the 2020 intake.	SERG Governance Committee	2019-2020	N
11. Internationalization: (Opportunity) <i>Increased participation of international students would strengthen student exposure to non-Canadian energy issues. While there appears to be some constraints with regards to domestic and international student composition, there is significant demand from international students for the MEng program.</i>	Systematically examine possibility of increasing (qualified) international applicants	SERG Governance Committee	2019-2020 Academic year	N