

DATE: September 13, 2021

TO: Senate

FROM: Dr. Dwight Deugo, Vice-Provost and Associate Vice-President (Academic), and Chair,
Senate Quality Assurance and Planning Committee

RE: Final Assessment Report and Executive Summary: Graduate 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 graduate programs in Biology.

The request to Senate is based on a recommendation from the Senate Quality Assurance and Planning Committee (SQAPC), which passed the following motion at its meeting of September 9, 2021:

THAT SQAPC recommends to SENATE the approval of the Final Assessment Report and Executive Summary arising from the cyclical program review of the graduate 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 21th, 2019 and ratified by the Ontario Universities Council on Quality Assurance on November 22nd, 2019) stipulates that, in approving Final Assessment Reports and Executive Summaries 'the role of SQAPC 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 SQAPC 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.

Any major modifications described in the Implementation Plan, contained within the Final Assessment Report, are subject to approval by the Senate Committee on Curriculum, Admission, and Studies Policy, the Senate Quality Assurance and Planning Committee (SQAPC) 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 Implementation Plan will be forwarded to the Ontario Universities' Council on Quality Assurance and reported to Carleton's Board of Governors for information. The Executive Summary and Implementation 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 September 24, 2021

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

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

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

EXECUTIVE SUMMARY

The graduate programs in Biology reside in the Ottawa-Carleton Institute of Biology, an institute administered by the Faculty of Science.

As a consequence of the review, the programs were categorized by Carleton University's Senate Quality Assurance and Planning Committee (SQAPC) as being of good quality. (Carleton's IQAP 7.2.13).

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, the Associate Chair of the Department of Biology, the Dean of the Faculty of Science and the Dean of the Faculty of Graduate and Postdoctoral Affairs in a response to the External Reviewers' report and Implementation on Plan that was submitted to SQAPC on August 26, 2021.

FINAL ASSESSMENT REPORT

Introduction

The graduate programs in Biology reside in the Ottawa-Carleton Institute of Biology, an institute 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 categorized by Carleton University's Senate Quality Assurance and Planning Committee (SQAPC) as being of good quality. (Carleton's IQAP 7.2.13).

The site visit, which took place on February 1, 2 and 3, 2021, was conducted by Dr. Steven Harris from University of Manitoba, and Dr. Neil Emery from Trent University. The site visit involved formal meetings with the Provost, the Vice-Provost and Associate Vice-President (Academic), the Dean of the Faculty of Science, the Dean of the Faculty of Graduate and Postdoctoral Affairs, the Chair and Associate Chairs of the Department of Biology, and the Director and Associate Director of the Ottawa-Carleton Institute of Biology. The review committee also met with faculty members, contract instructors, staff, and graduate students.

The External Reviewers' report, submitted in March 2021 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 Implementation 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).
- The response and implementation plan from the Chair and Associate Chair in the Department of Biology (Appendix C)
- The Response from the Dean of the Faculty of Science 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 Implementation Plan (Appendix C) developed by the Chair and Associate Chair in the Department of Biology and agreed to by the Dean of the Faculty of Science, and the Dean of the Faculty of Graduate and Postdoctoral Affairs, for the implementation of recommendations for program enhancement identified as part of the cyclical program review process.

The Implementation 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 External Reviewers' Report states that "In our meetings at all levels (Deans, Graduate Chairs, Faculty and Students) there were flattering descriptions of the Biology Graduate Programs. In terms of prestige, we heard over and over again that Biology was "right at the top" in overall impressions based on observations of; numerous and impactful research publications, increasing enrolments at or near capacity, and the ability to attract very high-quality students through mostly reputation, faculty networking and word-of-mouth".

Faculty

The External Reviewers' Report states that "One particular strength that came up repeatedly through our visit was the highly engaged and enriching involvement of the numerous Adjunct Faculty" "Each of them expressed strong support for their university collaborations and particularly emphasized the high quality of students with whom they interact on a regular basis. Granting success was also held up as a synergistic benefit between the external agencies and the university faculty". The External Reviewers' report also noted that "Given the perceived excellence of the Biology Graduate Programs, it is heartening to see that the University administration has been planning for the faculty resources that it warrants. A hiring cluster has been dedicated to Biology and is mid-way through obtaining a complement of five new faculty".

Students

The external reviewers noted that "A subject that came up frequently in our meetings with Carleton faculty, Adjuncts and the students themselves was the high quality of graduate recruits. None of the faculty we asked had any difficulties recruiting students at the M.Sc. or Ph.D. levels" "On the whole, student progression and productivity (publications, conference contributions etc.) has been excellent".

Curriculum

The external reviewers noted that "It was resoundingly clear from our discussions with administration, faculty, and students that the Department of Biology, in conjunction with the Ottawa-Carleton Institute of Biology (OCIB), offers a high-quality graduate program that provides robust training opportunities for its students. We were impressed by the overall prestige of the program and the commitment of faculty to the success of their students. A comprehensive set of program-level learning outcomes have been defined and measured plans for implementation are underway. Moreover, the OCIB appears to be fulfilling its purpose by enhancing research and learning opportunities for students".

Opportunities for program improvement and enhancement

The External Reviewers' Report made 10 recommendations for improvement:

1. We recommend that the OCIB website, which was operated by the Univ. Ottawa and recently taken down, be reinstated and appropriately supported by both departments.

2. We recommend that the Department consider approaches to improve engagement and participation in the annual OCIB meeting. This may simply include re-emphasizing the importance of the meeting to students and perhaps even providing awards for best talks or posters.
3. We recommend that the Department work with Alumni Affairs to develop a mechanism to maintain contact with and track the success of program graduates.
4. We recommend that the Department prioritize the hiring of a new staff member who is capable of developing and maintaining the website, and who can also address basic IT issues.
5. Our recommendation at this time is nothing more than to ask that the Department remain vigilant and proactive in their support of EDI as it pertains to the recruitment and retention of students, staff, and faculty.
6. We recommend that as part of the revision process all guidelines relevant to Carleton be examined to ensure that they are consistent between the Department and the FGPA. In addition, if not already done so, the report generated from each student's annual advisory committee meeting could include an explicit statement of upcoming deadlines.
7. We recommend that the Department consider implementing the use of pre- and post-surveys to assess student perceptions of their career aspirations and how these have been impacted by their graduate program. Access to this information should help with tailoring professional development activities to maximize their effectiveness.
8. The completion of a worksheet following each student's advisory committee meetings is a reasonable and accepted approach for evaluating PLOs, and the sample Advisory Committee Structured Feedback rubric will be an effective and useful guide.
9. We recommend the Department ensure that the Biology Graduate Student Association is appropriately funded and is strongly encouraged to play an active role in the life of the Department.
10. We recommend that students be actively engaged in the process of enhancing existing PLOs or defining new ones. This could occur by ensuring that at least two students are represented on the Departmental learning outcomes team.

The Outcome of the Review

As a consequence of the review, the graduate programs in Communication were categorized by Carleton University's Senate Quality Assurance and Planning Committee (SQAPC) as being of **GOOD QUALITY** (Carleton's IQAP 7.2.13).

The Implementation Plan

The recommendations that were put forward as a result of the review process were productively addressed by the Chair and Associate Chair of the Department of Biology, the Dean of the Faculty of Science, and the Dean of the Faculty of Graduate and Postdoctoral Studies in responses to the External Reviewers' report and Implementation Plan that was considered by SQAPC on August 26, 2021. The Department agreed unconditionally to recommendations #1, 2, 5, 6, 8, 9 and 10, agreed to recommendation #7 in principle and agreed to recommendations #3 and 4 if resources permit.

It is to be noted that Carleton's IQAP provides for the monitoring of implementation plans. A monitoring report is to be submitted by the academic unit(s) and Faculty Dean(s), and forwarded to SQAPC for its review by June 30th, 2023.

The Next Cyclical Review

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

Biology

Unit Response to External Reviewers' Report & Implementation Plan Programs Being Reviewed: Graduate Programs

Note: This document is forwarded to Senate, the Quality Council and posted on the Vice- Provost's external website.

Introduction & General Comments

Please include any general comments regarding the External Reviewers' Report.

The Department of Biology was pleased to receive very favourable reviews from the External Reviewers of our Graduate Program Cyclical review, on March 9, 2021. We are proud to hear positive feedback on our research intensive program that draws upon expertise from government and industry in the Ottawa region. At the same time, we fully recognize that we can make improvements, and we are committed to continually assessing and improving our program for students, faculty and staff. This document contains both a response to the External Reviewers' Report and an Implementation Plan (Section B).

For each recommendation one of the following responses must be selected:

Agreed to unconditionally: used when the unit agrees to and is able to take action on the recommendation without further consultation with any other parties internal or external to the unit.

Agreed to if additional resources permit: used when the unit agrees with the recommendation, however action can only be taken if additional resources are made available. Units must describe the resources needed to implement the recommendation and provide an explanation demonstrating how they plan to obtain those resources. In these cases, discussions with the Deans will normally be required and therefore identified as an action item.

Agreed to in principle: used when the unit agrees with the recommendation, however action is dependent on something other than resources. Units must describe these dependencies and determine what actions, if any, will be taken.

Not agreed to: used when the unit does not agree with the recommendation and therefore will not be taking further action. A rationale must be provided to indicate why the unit does not agree (no action should be associated with this response).

Calendar Changes

If any of the action items you intend to implement will result in calendar changes, please describe what those changes will be. To submit a formal calendar change, please do so using the Courseleaf system.

UNIT RESPONSE AND IMPLEMENTATION PLAN

Programs Being Reviewed:

Prepared by (name/position/unit):

External Reviewer Recommendation & Categorization	Unit Response: 1- Agreed to unconditionally 2- Agreed to if additional resources permit (describe resources) 3- Agreed to in principle 4- Not agreed to Rationales are required for categories 2, 3 & 4	Action Item	Owner	Timeline	Will the action described require calendar changes? (Y or N)
<p>1. We recommend that the OCIB website, which was operated by the Univ. Ottawa and recently taken down, be reinstated and appropriately supported by both departments.</p>	<p>1</p>	<p><i>We have tried to have a combined website in the past and it was hard to maintain and update. The difficulty with having one OCIB site for both Institutions is that U. Ottawa must always have an equivalent French version, so historically we have had to rely on U. Ottawa's template and staff to maintain the site. Also, because the two institutions have different policies for coursework, research requirements, it is not feasible to have a single website. Therefore, our plan of action is to make a one-page website that is bilingual, and this will provide links to independent departmental sites at both institutions.</i></p>	<p><i>The administrative assistant at Carleton is able to produce this single-page website, but it needs to be in the Carleton format. The Grad Chair at Carleton will discuss with the Grad Chair at U. Ottawa how they would like to contribute. We could also make this one page site bilingual.</i></p>	<p><i>Summer/Fall 2021</i></p>	<p><i>N</i></p>

<p>2. We recommend that the Department consider approaches to improve engagement and participation in the annual OCIB meeting. This may simply include re-emphasizing the importance of the meeting to students and perhaps even providing awards for best talks or posters.</p>	<p>1</p>	<p><i>We have tried a number of different ways to increase participation in the OCIB symposium, including reducing the time from 1.5 days to 1 day, giving prizes for best talks and posters, and providing excellent funding for the student committee to bring in invited speakers, rent a venue, and provide lunch. One of the issues is that the symposium comes right at the end of the school year (end of April or early May), at a time when some students are heading out to the field for research, and many faculty and students are just 'burned out' after a long year. While we have tried to come up with another time, the end of April/early May still appears to be the best. As this is a student-run symposium, it is agreed that neither Carleton U. nor Ottawa U. faculty members will get too involved in the administration of the symposium. The roles of the faculty and administrative staff are to provide logistical support. The student committee self organizes each year, and passes information from one committee to the next. One thing that we will do is to create a timeline for important stages in the formation of the committee and symposium. For example, in September the committee will be formed and consult with the Director of the OCIB Institute on the plans and timelines for the year. This would include things like having the website set up, contacting groups such as the Biology Graduate society, and plans for sending reminders to students and faculty. We can</i></p>	<p><i>The current Director of the OCIB, in collaboration with the Grad Chair at the other university, and their respective grad administrators, will make a checklist of goals and timelines in the fall of each year.</i></p>	<p><i>Summer 2021- Spring 2022</i></p>	<p><i>N</i></p>
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		<i>also plan to have an OCIB committee representative present at our Departmental meetings about a month prior to the event to ensure that faculty are informed and encouraged to get their students to participate.</i>			
3. We recommend that the Department work with Alumni Affairs to develop a mechanism to maintain contact with and track the success of program graduates.	2	<p><i>The current Grad Chair in Biology at Carleton informally inquired about obtaining assistance from Grad studies and their professional development team to follow student paths. The current Dean of Science indicated that this information was difficult to obtain. We believe that the best way to track students is through the faculty members in the Department, who can provide anonymous data about their previous students. This information will be more convenient for faculty members who have NSERC grants, as this information is provided in the HQP tables.</i></p> <p><i>As this task requires additional resources beyond what our current graduate administrator can provide, we will ask for financial support to hire a part time student (perhaps a recently graduated graduate student) to collect these data and prepare a report.</i></p>	<i>The Graduate Chair in Biology in consultation with the Departmental Chair will request funds from the Dean of Science to hire a student. The Graduate Chair will also consult Alumni Affairs to request assistance in tracking previous students.</i>	Summer 2022	N
4. We recommend that the Department prioritize the hiring of a new staff member who is capable of developing and maintaining the website, and who can also address basic IT issues.	2	<i>We agree with this completely, but the problem goes beyond computer support for graduate students, and therefore there are a number of different issues that may require different solutions. We have several perceived deficiencies in our department with respect to computer support. For</i>	<i>As this requires hiring a new staff member and changing the job descriptions of existing</i>	Summer 2021-Fall 2022	N

		<p><i>example, we require help with the following:</i></p> <ul style="list-style-type: none"> - <i>departmental website requires more frequent updating</i> - <i>individual faculty research websites are not easily created or maintained; faculty require help in building and maintaining their sites</i> - <i>computer software and hardware maintenance for administration and research (this is a big one)</i> - <i>OCIB website (see point 1 above)</i> <p><i>Following the retirement of Jim Logan, who provided computer software and hardware maintenance to the Faculty of Science, we are left with little computer support in the department. We require salary support to fill this major gap.</i></p> <p><i>Plans include the following:</i></p> <ul style="list-style-type: none"> - <i>Conduct a survey amongst Biology Faculty to itemize computer and website needs</i> - <i>Change the job description for the Admin Assistant in Biology to make website management a larger percentage of the duties. We would hire someone with strong communication and computer skills</i> - <i>Request funds from the Dean of Science to hire somoni who could provide help to professors with their lab computers and research websites</i> 	<p><i>positions in Biology, the Chair of Biology and Departmental Administrator will work on this problem. This should be done in consultation with the grad chair and faculty members so that the needs of the department are considered.</i></p>		
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		<i>- Discuss the option of changing the job description of the Departmental Technician to include computer assistance and maintenance</i>			
5. Our recommendation at this time is nothing more than to ask that the Department remain vigilant and proactive in their support of EDI as it pertains to the recruitment and retention of students, staff, and faculty.	1	<i>EDI policies are being implemented at the level of the University, and as the External Reviewers pointed out, the Biology Department is already vigilant and aware of the importance of including visible minorities at all levels of our department.</i>	<i>Continue with current practices</i>	<i>Ongoing</i>	<i>N</i>
6. We recommend that as part of the revision process all guidelines relevant to Carleton be examined to ensure that they are consistent between the Department and the FGPA. In addition, if not already done so, the report generated from each student's annual advisory committee meeting could include an explicit statement of upcoming deadlines.	1	<i>The OCIB handbook is currently being revised and will function as an important information source for both students and faculty in Biology at Carleton. We tried years ago to have a single handbook for the two universities, but due to ever-changing policies that are linked to those of upper administration at each university (particularly FGPA), we decided that we required separate handbooks. This should be updated on a yearly basis.</i> <i>Also, we are in the process of updating forms for committee meetings, fast-tracking and thesis defenses, in order to clarify terminology and make wording consistent with that used in the handbook. We will update on, preferably, an ongoing basis, but at least once a year.</i>	<i>Grad Chair, Departmental Chair, Grad and Departmental Administrator</i>	<i>July 2021 and ongoing</i>	<i>N</i>

<p>7. We recommend that the Department consider implementing the use of pre- and post-surveys to assess student perceptions of their career aspirations and how these have been impacted by their graduate program. Access to this information should help with tailoring professional development activities to maximize their effectiveness.</p>	<p>3</p>	<p><i>While we completely agree that implementing measures to facilitate career development for our students is very important, we do not have the resources to survey students about their career aspirations before and after they fulfill their degree requirements. That said, we are in agreement with working with FGPA and Alumni Services (see comments associated with recommendation 3 above) to collect data on career paths taken by our previous students, and, working with FGPA and Biology Faculty to assist students with their career development. One key practice already in place is our extensive networking with local, provincial and national government agencies and private industry through adjunct faculty, who act as supervisors and advisors. The Biology Faculty will continue to promote collaborations and facilitate networking with local, provincial and national government agencies and private industry through adjuncts, who act as supervisors and advisors.</i></p>	<p><i>Biology Faculty will continue to promote liaisons with government and private industry to facilitate networking for students.</i></p>	<p><i>Ongoing</i></p>	<p><i>N</i></p>
<p>8. The completion of a worksheet following each student's advisory committee meetings is a reasonable and accepted approach for evaluating PLOs, and the sample Advisory Committee Structured Feedback rubric will be an effective and useful guide.</p>	<p>1</p>	<p><i>As written in the Cyclical Review document, a pilot trial for assessing LOCs is now in place. The Grad Chair is currently following up with the team who developed the LOCs, and the grad administrator, who is collating the information. The plan is to complete the trial after one year and then to solicit feedback from faculty, adjunct faculty, and grad students on the value of</i></p>	<p><i>Pilot is being administered by the Learning Outcome Committee, and Grad Chair, and data are being tabulated by the Grad Administrator</i></p>	<p><i>First pilot trial will be completed in August 2021</i></p>	<p><i>N</i></p>

		<i>these assessments for students, and where improvements can be made.</i>			
9. We recommend the Department ensure that the Biology Graduate Student Association is appropriately funded and is strongly encouraged to play an active role in the life of the Department.	1	<i>We have already acted by connecting with the Biology Grad Society to ask what we can do to help out. We are able to provide funding for activities and will continue discussions with the committee to discuss their goals for the upcoming year.</i>	<i>Chair and Grad Chair. Action already taken.</i>	<i>Ongoing</i>	<i>N</i>
10. We recommend that students be actively engaged in the process of enhancing existing PLOs or defining new ones. This could occur by ensuring that at least two students are represented on the Departmental learning outcomes team.	1	<i>We will consult with the existing committee to discuss how we can incorporate graduate students into modifying the existing PLOs and defining new ones.</i>	<i>Grad Chair and Grad Assistant, with faculty running pilot Departmental learning outcomes.</i>	<i>Summer 2021-Fall 2022</i>	<i>N</i>