FINAL ASSESSMENT REPORT
Evaluation of Graduate Programs
Faculty of Medicine
Cyclical review period: 2019-2020
Date: November 18, 2020

I. Evaluated Programs

- Master of Science (MSc) in Neuroscience
- Doctorate in Philosophy (PhD) in Neuroscience

II. Evaluation Process (Outline of the visit)

- The Final Assessment Report for the evaluation of the aforementioned programs was based on the following documents: (a) the self-study brief produced by the academic unit, (b) the report produced by the external evaluators following their virtual site visit, and (c) the comments from Jean-Claude Béique, Professor and Director of the Graduate Program in Neuroscience and Alain Stinzi, Vice-Dean of Graduate and Postdoctoral Studies, on the aforementioned documents.
- During the site visit, the external evaluators met with Dr. Ion Nistor, the Assistant Vice-Provost of Graduate and Postdoctoral Studies, Drs. Lohnes, Béïque, Ngsee and Wiper-Bergeron, who have administrative roles in the CMM department and Neuroscience program. The evaluators also met with current senior graduate students as well as faculty members, Dr. Ruth Slack, Director of the Brain and Mind Research Institute, administrative managers for the program, Karen Littlejohn and Gina Campbell. At the end of day one, they met with the Dean of Medicine, Dr. Bernard Jasmin, the Vice-Dean of Graduate Studies, Dr. Alain Stintzi and the Vice-Dean Research, Dr. Jocelyn Côté. On the second day, they met with the Faculty Wellness representative, Cynthia Abraham, the library representative, Lindsey Sikora, the behaviour and physiology core facility manager, Dr. Stephen Fergusson, the manager of the Cell Biology and Image Acquisition Core, Dr. John Copeland and the OHRI Neuroscience Director, Dr. Michael Schlossmacher.

Comments from the Internal Delegate

- The virtual visit by the external evaluators, Drs. Robitaille and Ruthazer, went very well. The schedule of meetings was perfectly planned and all those invited were present. The evaluators were very well prepared and had a list of questions for each group. Their questions dealt, among other things, with the link between the Neuroscience programs and the Department of Cellular and Molecular Medicine, the mandatory and optional courses of the MSc and PhD programs in Neuroscience, the conditions of reception of new professors in Neuroscience, the role of the various support staff and the librarian in supporting the students and professors, the role of those in charge of the infrastructure/laboratories, and the use of the Wellness program by the students. During all the meetings, the two evaluators demonstrated remarkable listening skills and were able to put their interlocutors at ease. As a result, interactions were open and discussions were frank. The meeting with the graduate students was particularly

excellent. The evaluators took the time to gather numerous comments on the obstacles they experienced, such as the funding of their studies, the sometimes cramped work spaces, conflicts with supervisors, the poorly furnished classroom/seminar room, and the limited services at the RGN (non-existent sports service). Evaluators also inquired about the positive aspects of the two programs of study and students named several. The visit concluded with a meeting with the heads of the two Neuroscience programs of study. Again, the discussion was open and the evaluators were able to address some difficult issues and propose constructive solutions. It was a pleasure to participate in this program evaluation.

III. Summary of Reports on the Quality of Programs[1]

This section aims to inform the unit on the strengths and weaknesses observed during the evaluation process in order to improve its programs.

1. EMPHASIZING THE STRENGTHS AND IDENTIFYING CHALLENGES

STRENGTHS

- Broad interdisciplinarity of the Neuroscience program
- Aligned with strategic mandate of uOttawa to build research excellence through interdisciplinarity
- Outstanding international reputations of the researchers in the Neuroscience program
- Large number of international PhD students
- New model of student funding reform to provide different programs more autonomy in how funds are allocated
- Value of Monthly Faculty of Medicine Graduate Studies Committee meetings
- High student satisfaction
- Program offered in the area of computational and systems neuroscience, especially electrophysiology and behaviour an effective draw for students interested in these disciplines

CHALLENGES

- Cross-campus distribution of research institutes, hospitals and campus sites
- High cost of living in Ottawa
- Researchers in psychiatry and cognitive neuroscience not well integrated into program
- Fostering a unique identity for the Neuroscience program
- Actively promote the Neuroscience program through social media
- Improving communication regarding administrative, academic and scientific activities

[1] Based on all documents prepared during the assessment process.

2. PROGRAM OBJECTIVES

- The program embodies the university's strategic plan to build research through interdisciplinarity. The outstanding international reputations of researchers in the Neuroscience program not only benefit graduate students in the program but also contribute to advancing international recruitment. At present there is a large number of international PhD students, and the strategic goals that will be implemented for studentship reform will attract further PhD-level students. While the program objectives and outcomes are clearly described for students, given the current context of Covid-19 additional attention is required to ensure students are adequately informed of the program goals.

3. CURRICULUM AND STRUCTURE

- The curriculum, as presented, is comparable to other similar programs across the country. However, some of the more recent additions to the curriculum are both "innovative and cutting edge". The new and evolving modular course, *Professionalism and Professional Skills* (MED8166), is a welcome addition to address some of the shortcomings in practical training and to enhance career options. Also, in response to students' requests, a modular course designed for Masters students will increase their technical and research skills by providing additional opportunities such as learning software coding, computational and big data analysis, imaging and CRISPR-Cas-related methodologies. Students also expressed the need for additional training in statistics.

4. TEACHING, LEARNING AND EVALUATION METHODS

- The mode of teaching and evaluation can be described as fairly traditional and students expressed satisfaction with the instructional approach. It is suggested that some peer evaluation in the upper-level seminar courses could prove beneficial.

5. STUDENT EXPERIENCE AND GOVERNANCE

- The students expressed a high degree of satisfaction with their laboratory environments and with the larger university community. There was consensus that the Thesis Advisory Committee structure works well. The professors and researchers who supervise graduate thesis work are aware of possible tensions which can arise and are working collaboratively on processes to mitigate these. Students expressed the need for additional cultural sensitivity training for faculty. Mental health and well-being were brought forward as issues requiring attention and additional resources. The addition of a wellness counselor is one attempt to alleviate these concerns. Also it was suggested that professors might benefit from workshops on team management. Students also proposed more occasions for students and faculty to meet and share both professionally and socially.

6. RESOURCES

- The high calibre of biomedical research conducted in the research laboratories of the Neuroscience program serves the community well and provides unparalleled training to students. The library and research service facilities are well funded. Overall

students appeared satisfied with the resources for study and research and the reform of the funding model currently underway for recruiting and supporting graduate students will address a number of their concerns. The reality that researchers and students are located in campuses and institutes across town remains a challenge.

IV. Program Improvement

The programs under evaluation are in conformity with the standards of the discipline. The following recommendations aim at maintaining or increasing the level of quality already achieved by the programs.

The numbering of the recommendations follows that of the external reviewers' report.

PROGRAM OBJECTIVES, LEARNING OUTCOMES, MANDATE AND UNIVERSITY PLAN

Recommendation 6: The GPEC recommends that the Neuroscience program and the accomplishments of the students be more actively promoted on social media.

CURRICULUM AND STRUCTURE

Recommendation 1: The GPEC recommends the creation of a statistics workshop for one-on-one tutorials using actual lab data, perhaps taking advantage of expertise in the epidemiology department.

TEACHING AND EVALUATION

Recommendation 2: The GPEC recommends live video streaming of guest lectures and classes so that students across campus have equal access. Consider posting recordings too.

STUDENT EXPERIENCE AND GOVERNANCE

Recommendation 4: The GPEC recommends that the program reinstitute 2-3 NSC faculty meetings every year and consider opening at least one to students.

Recommendation 7: The GPEC recommends the program works with the Professional Office to develop cultural sensitivity, ethics and team management workshops for supervisors, and consider making these mandatory.

Recommendation 8: The GPEC recommends the program Consider having an annual Neuroscience Program Retreat.

RESOURCES

Recommendation 3: The GPEC recommends that the stipend penalty caused by Excellence Scholarships to national award recipients be removed.

Recommendation 9: The GPEC recommends that a program committee to support the program coordinator be reinstated.

RECOMMENDATION NOT RETAINED BY GPEC

Recommendation 5: Opt-out options for graduate student gym low membership**.** This recommendation was not retained since the academic program does not have administrative authority to act on this recommendation. However, this University of Ottawa recognizes the need to better serve the students outside the main campus in terms of recreational activities.

V. List of courses not offered for more than three years and the reasons

All courses have been offered at least once in the past three years.

VI. Conclusion

The self-study brief which was provided to the external evaluators was a well-crafted document that described a very robust and effective program of graduate studies (MSc & PhD) in Neuroscience. Following the 2-day virtual visit, the evaluators submitted a comprehensive report on August 10, 2020. While the evaluators acknowledged the superior quality of the graduate program, they also identified a number of areas in which improvements were recommended. In all they made 9 recommendations.

In their written response to the evaluators' report, Professor Jean-Claude Béique, Director of the Graduate Program in Neuroscience and Professor Alain Stinzi, Vice-Dean of Graduate and Postdoctoral Studies, indicated their appreciation for the thoughtful review and described the steps they were undertaking to implement each of the recommendations, with one exception: the recommendation that an opt-out option for graduate student gym membership be provided. Indicating that there were administrative constraints to implementing this recommendation, which they themselves had previously tried to accomplish, they proposed the creation of a gym in the new research tower currently being designed for the Alta Vista campus of the University of Ottawa. The Alta Vista location of the gym would serve the student population in the Faculty of Medicine.

Schedule and Timelines

A meeting will be organized with the program chairs, the Faculty Dean and Vice-Dean following the reception of the Final Assessment Report so that a plan of action can be put in place along with deadlines particular to each recommendation. A progress report that outlines the completed actions and subsequent results will be submitted to the two evaluation committees (SCEUP and GPEC) on a date agreed upon at the time of the meeting regarding the action plan.

The next cyclical review will take place in no more than eight years, in 2026-2027. The self-study brief must be submitted no later than June 2026.

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Unit Response to the External Review Report and Action Plan

Faculty: Medicine

Department: Cellular and Molecular Medicine

Programs evaluated: Master of Science, Neuroscience, Doctorate in Philosophy, Neuroscience

Cyclical review period: 2019-2020

Date: April 21, 2021

General comments:

On August 10th, 2020, the Department of Cellular and Molecular Medicine was made aware of the External Consultants Report produced in the context of the cyclical review of the MSc and PhD programs in Neuroscience. The Neuroscience program was delighted with the very positive evaluation of our graduate program. We have, as a unit, committed to research and training excellence and so were justifiably pleased that the consultants noted that '*there is no doubt that this is a successful program that is working hard to become even better*' and concluded that our program is: "*one of the more progressive and dynamic training programs we have seen*". We are also pleased that the evaluators specifically commented on aspects of the program for which we have devoted considerable efforts to achieve excellence. For instance, they noted "*the outstanding international reputations of the researchers in the U Ottawa Neuroscience program*" and the '*innovative and cutting-edge*' nature of some aspects of the curriculum of the program. Despite these strengths, key areas for development were identified to enhance the overall quality of the learning and research training environment. A summary of the recommendations and our response to address each, produced jointly by the unit and the Faculty, is included herein.

FOCUS AREA #1: PROGRAM OBJECTIVES, LEARNING OUTCOMES, MANDATE AND UNIVERSITY PLAN					
Recommendation 6: The Neuroscience program and the accomplishments of the students be more actively promoted on social media.					
Define the actions to undertake: The Neuroscience Program will adopt social media to ensure widespread visibility of the program, both student accomplishments and research excellence. We will initiate a discussion with our Neuroscience community as to the best means to effectively curate social media communications to assure balance and a representative exposure of the diversity of Neuroscience research carried out at uOttawa. This effort will be done in close collaboration with the current social media presence of the uOttawa Brain and Mind Research Institute.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
2	Program Director	September 1, 2021	Improved visibility of the graduate program and research quality which will contribute to reputation building and support student recruitment initiatives.	1. Adoption of Twitter as a means of external communication 2. Visibility of the account on program website and number of followers within the university and outside.	*To be completed by the Evaluation Committee when reviewing the progress report*

FOCUS AREA #2: CURRICULUM AND STRUCTURE					
Recommendation 1: The GPEC recommends the creation of a statistics workshop for one-on-one tutorials using actual lab data, perhaps taking advantage of expertise in the epidemiology department.					
Define the actions to undertake: Knowledge in biostatistics is foundational for our research programs. The Faculty of Medicine has developed a graduate-level course (MED5101) in – Experimental and Data Analysis Techniques in Biomedical Sciences. This course consists of independent modules that introduce students to techniques including biostatistics. Beyond the classical statistical workshops offered in this course, we are currently developing a module that addresses statistical needs more closely tailored to Neuroscience students who need, for instance, to analyze non-linear neural processes with complex time-varying parameters.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
2	Assistant Dean, Graduate and Postdoctoral Studies **And** Program Director	Implementation of a biostatistics workshop in MED5101 expected in Winter 2022 Development of a Neuroscience-specific biostatistics workshop expected Spring 2022.	1. Improved knowledge base in fundamental and specialized biostatistics 2. Improved application of biostatistics for data analysis by students in the neuroscience program	1. Workshop registrations (uptake) 2. Student survey regarding confidence with biostatistics	*To be completed by the Evaluation Committee when reviewing the progress report*

* PRIORITY LEVEL : 1. URGENT-IMMEDIATE ACTION REQUIRED 2. IMPORTANT-ACTION REQUIRED WITHIN 18 MONTHS (MAXIMUM) 3. ADVISED: DEVELOPMENT AND STRATEGY-ACTION TO BE DISCUSSED AND MUST BE IN PLACE BY MID-CYCLE (WITHIN 4 YEARS)

FOCUS AREA #3: TEACHING AND EVALUATION					
Recommendation 2: The GPEC recommends live video streaming of guest lectures and classes so that students across campus have equal access. Consider posting recordings too.					
Define the actions to undertake: To ensure the learning experience offered by our program be equally rich and accessible to all NSC graduate students distributed across different uOttawa campuses, the AV equipment in the meeting room where seminars are typically held (RGN 1421) has recently been updated with cameras and internet access. As such, we expect that upon resuming normal research and academic activities post-COVID, we will be able to live stream these seminars to facilitate attendance by the entirety of our student population, irrespective of their geographical location. In order to maximize student's interactions with the invited speakers of our seminar series, we will encourage our learners to attend either remotely or in person these seminars at the time they are given. As such, we do not favor posting the recordings on a regular basis.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
2	Program Director	Upon return to in-person activities (expected Winter 2022)	Improved access for learners to the seminars Improved student experience for students located at research institutes.	1. Usage of the live stream option for seminar series	*To be completed by the Evaluation Committee when reviewing the progress report*

FOCUS AREA #4: STUDENT EXPERIENCE AND GOVERNANCE					
Recommendation 4: The GPEC recommends that the program reinstitute 2-3 NSC faculty meetings every year and consider opening at least one to students.					
Define the actions to undertake: The NSC graduate program is planning to fully implement this recommendation by having regular meetings with the NSC professorship, including extending an invitation to NSC student representatives. Holding two to three meetings per year appears realistic and optimal.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
2	Program Director	Already implemented	Improved communication of information to the broader professorship Increased involvement of the whole professorship in program decision-making.	1. Adoption of program-wide meetings a minimum of 2 times per year.	*To be completed by the Evaluation Committee when reviewing the progress report*

FOCUS AREA #4: STUDENT EXPERIENCE AND GOVERNANCE					
Recommendation 7: The GPEC recommends the program works with the Professional Office to develop cultural sensitivity, ethics and team management workshops for supervisors, and consider making these mandatory.					
Define the actions to undertake: The NSC program is deeply committed to ensuring that the entirety of its student population has a fulfilling and rich scientific development within an inclusive and equitable learning and research environment that fosters respect and embraces diversity. Every supervisor in the NSC program must have an appointment to the CMM department, and as such needs to attend a series of workshops covering a range of topics such as respect in the Workplace and Violence prevention. A formal mentorship program exists for all new faculty consisting of a committee with a minimum of three more senior professors. The mentorship committee advises new faculty members on career progressions towards promotion and tenure as well as graduate-level supervision. The Faculty's Office of Continuing Professional Development has also committed to developing a workshop which could ensure all new professors understand their role and responsibilities as thesis supervisors.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
2	Program Director and Departmental Chair Faculty of Medicine's Office of Continuing Professional Development	Summer 2022	1. Completion and distribution of a booklet for new faculty that includes the expectations for graduate-level supervision and the policies and procedures governing graduate studies. 2. Implementation of scheduled faculty development sessions that clearly define the responsibilities of a graduate student thesis supervisors	1. New faculty feedback on the appropriateness and usefulness of the booklet, mentorship committee and faculty development training 2. Tracking of registrations for Faculty Development sessions related to graduate studies.	*To be completed by the Evaluation Committee when reviewing the progress report*

FOCUS AREA #4: STUDENT EXPERIENCE AND GOVERNANCE					
Recommendation 8: The GPEC recommends the program consider having an annual Neuroscience Program Retreat.					
Define the actions to undertake: We fully realize the importance and value that an Annual retreat would have for our student population. Historically, financial limitations have been the principal hurdle preventing such an event, and the current COVID situation naturally imposes a firm restriction at present. Nonetheless, we are in dialogue with the University of Ottawa Brain and Mind Research Institute (uOBMRI) in order to leverage financial opportunities to hold such an event in the future.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
3	Program Director and Departmental Chair	Indeterminate. Dependent on financial resources.	Increased *sens d'appartenance* for students, particularly for those training in research institutes. Increased opportunity to discuss innovative approaches and strategic planning for continued program development	Participation rates at the retreat Satisfaction surveys	*To be completed by the Evaluation Committee when reviewing the progress report*

FOCUS AREA #5: RESOURCES					
Recommendation 3: The GPEC recommends that the stipend penalty caused by Excellence Scholarships to national award recipients be removed.					
Define the actions to undertake: The scholarship portfolio available from the University of Ottawa to support graduate students has been renewed and the Excellence scholarship in question has been abolished.					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
N/A	N/A	No action required			*To be completed by the Evaluation Committee when reviewing the progress report*

* PRIORITY LEVEL : 1. URGENT-IMMEDIATE ACTION REQUIRED 2. IMPORTANT-ACTION REQUIRED WITHIN 18 MONTHS (MAXIMUM) 3. ADVISED: DEVELOPMENT AND STRATEGY-ACTION TO BE DISCUSSED AND MUST BE IN PLACE BY MID-CYCLE (WITHIN 4 YEARS)

FOCUS AREA #5: RESOURCES					
Recommendation 9: The GPEC recommends that a program committee to support the program coordinator be reinstated.					
Define the actions to undertake: We will reinstate a formal program committee. This committee will assist in assuming leadership roles for several tasks (eg., reviewing student admissions, ranking students for scholarships, reviewing course delivery and curriculum).					
Priority Level*	**Assigned Person or Persons**	**Deadline to attain the objective**	**Expected results**	**Implementation Indicators**	**Progress on the actions taken: accomplished, to be sustained, to be continued, to be developed**
1	Program Director	Ongoing.	Improved program leadership More support for the development of new initiatives.	Regularly scheduled meetings	*To be completed by the Evaluation Committee when reviewing the progress report*

Faculté / Faculty : Medicine

Programme(s) évalué(s) / Program(s) evaluated:

Master of Science, Neuroscience; Doctorate in Philosophy, Neuroscience

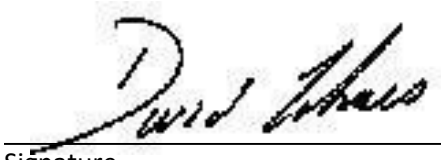
Cyclical review period: 2019-2020

Program / Department Chair :

Dr. David Lohnes

Chair

Department of Cellular and Molecular Medicine



Signature

2021-05-13

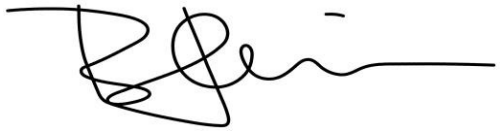
Date

Faculty Dean :

Dr. Bernard Jasmin

Dean and Professor

Faculty of Medicine



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2021-05-14

Date