

Self Study Report

The report highlighted a number of program strengths including:

- High quality, hands-on training from undergraduate to postdoctoral levels
- Distinctive focus in systems neuroscience, especially behavioural and cognitive neuroscience, as well as being strong in computational neuroscience
- Strong extramural research and training funding
- Very strong scholarship among faculty: high impact, excellent reputation
- Diversity of research tools to support some training/research
- Healthy graduate program, common core grad seminar is strong
- Recent growth in junior ranks
- New science building and well appointed, new vivarium
- Opportunities for students to co-author papers and contribute to meetings and conferences, student opportunities for outreach activities
- Established translational work in some areas
- Strong input in teaching students from other disciplines (biology, kinesiology, psychology, computer science)
- Dedicated research time on 3T MRI on campus

The report also noted some challenges experienced by the program:

- Small, shrinking university budget and lack of provincial government support
- Sense of isolation due to empty offices and laboratories following the pandemic and lockout/strike
- Lack of in-person social interactions/events
- Difficulty recruiting domestic and international graduate students and postdoctoral fellows
- Inability to retain mid-career faculty members and no retention plan
- External perception that ULethbridge is undergraduate focused, boring prairies environment
- Lack of student participation in decision-making processes
- No internal human ethics approval process
- No support staff or instructors and insufficient admin support
- Lack of expertise in clinical or molecular neuroscience
- Fallow honours thesis program
- No department seminar series
- Outdated and obsolete microscopy equipment and lack of noninvasive animal imaging

The report suggested several areas of focus for improvement and asked for External Reviewer recommendations, including:

- We will work toward establishing formal laboratory activities associated with 2-3 of our core courses and establishing clear content streaming in our undergraduate programming.
- We will also work to ensure a frequency of course offerings to enable timely graduation of our undergraduate students.
- To increase engagement, we will return to regular in-person seminars by visiting scholars and work with our administrators to place student representatives on our departmental committees.

- Public engagement could be increased by encouraging public outreach about the results of contemporary brain research.
- How important are undergraduate lab courses or components to our undergraduate program? Are we lacking essential labs?
- Given our identified focus on systems neuroscience, are we missing specific topics that are essential to our undergraduate curriculum?
- Canadian medical schools no longer require pre-requisites, but are there other ways we can design our curriculum to best suit current and future careers relevant to neuroscience?
- Do we have an appropriate complement of non-neuroscience courses for our program?
- What specific activities are known to improve interactions among staff and students in a department?

External Review Report

The External Review Report contained eighteen (18) recommendations for improving the program name:

- Prioritize teaching resources in resource planning, such as an Instructor 3 position.
- Introduce a lab course with a wet-lab component; ideally one involving neuroanatomy.
- Flexibility in electives, particularly for cognate courses including anatomy and physiology.
- More general, rather than content-specific learning outcomes.
- Increased differentiation and formalization of the independent study courses.
- Explore opportunities for courses in research methods, data science, coding and statistics training as courses within or outside the department.
- Introduce Neuro1000 as a prerequisite for entry to second year neuroscience courses.
- Explore whether there are barriers to registration for prerequisite courses that prevent progression through the major, and if so, how these could be mitigated.
- We strongly advocate for increased administrative support in resource planning.
- Policies around absences from assignments and assessments, and around how potential violations of academic integrity are investigated should be set at the university level.
- Policies should be communicated in a standardized form in all syllabi (i.e., as a template syllabus).
- Identify suitable spaces for larger in-person gatherings and seminars.
- The Dean should facilitate sharing of teaching lab spaces to accommodate the development of lab courses in the Neurosciences.
- The website requires regular updating, so that prospective students can find the information they need (e.g., faculty research expertise).
- Faculty advisors should be assigned a subset of programs, so that they can fully assimilate the details of programs, which change over time. For example, which courses are considered more content-heavy or challenging, and the long-term impact of reduced course loads on candidacy for professional programs.
- The curriculum committee should explore the feasibility of mounting a required lab methods course.
- A departmental retreat would be helpful to facilitate the process of re-structuring the curriculum to accommodate new hires and upcoming retirements.
- Consider introducing a capstone course for non-honours thesis students.

Program Response

In their Program Response, the Self Study Committee addressed the recommendations from the External Review Report:

<p>1. Prioritize teaching resources in resource planning, such as an Instructor 3 position.</p>	<p>We have submitted a request for a full time Instructor III position dedicated to wet lab oversight, development and delivery of lab based undergraduate instruction, support for Neuroanatomy and Cellular and Molecular</p>
---	---

	Neuroscience, and safety related compliance. This request directly addresses Recommendation 1.
2. Introduce a lab course with a wet-lab component; ideally one involving neuroanatomy	Consistent with Recommendation 2, the department is working to implement a lab component to accompany NEUR3615 Functional Neuroanatomy. Space, scheduling, costs, and equipment needs are being reviewed.
3. Flexibility in electives, particularly for cognate courses including anatomy and physiology	The department is reviewing elective flexibility, especially for Anatomy and Physiology (KNES 1160, 1161, 2600, 2610), Coding (Comp Sci 1620, 26200, and Data Science (CompSci 3620, 3660). Historical registration data are being analyzed to identify recurring barriers.
4. More general, rather than content-specific learning outcomes.	Refer to the response to 17.
5. Increased differentiation and formalization of the independent study courses.	The department is creating a new standardized Independent Study Learning Contract that outlines learning outcomes, student responsibilities, expected hours, and assessment criteria. The form mirrors a course syllabus and will be implemented in the next academic cycle. We will cover this important change at a department meeting and our admin. assistant will be briefed on the changes and can help ensure faculty follow through with using the form in the way intended.
6. Explore opportunities for courses in research methods, data science, coding and statistics training as courses within or outside the department.	Aligned with Recommendations 6 and 16, the department is discussing the development of a first- or second-year Research Methods and Data Skills course. The curriculum committee will lead a feasibility assessment and if an instructor position can be secured, this is work they could easily take on.
7. Introduce Neuro1000 as a prerequisite for entry to second year neuroscience courses.	We support consideration of making Neuro1000 a required first year course, as suggested by the reviewers.
8. Explore whether there are barriers to registration for prerequisite courses that prevent progression through the major, and if so, how could these be mitigated.	Refer to the response to 3.
9. We strongly advocate for increased administrative support in resource planning.	We agree that administrative support is inadequate and request an administrative review as we believe there is an urgent need to increase staffing. We do not have frontline staff housed in our department to answer questions from students and the public and this puts us at a disadvantage in that as a department we are difficult to reach. The instructor position requested will address safety concerns, lab oversight issues in our common laboratory spaces and ensure adequate training of undergraduate and graduate students seeking access to these spaces. Currently, the administrative burden placed on our faculty without support in these two key positions is immense
10. Policies around absences from assignments and assessments, and around how potential violations of academic integrity are investigated should be set at the university level.	Refer to the response to 17.

11. Policies should be communicated in a standardized form in all syllabi (i.e., as a template syllabus).	We are discussing the adoption of a standard syllabus template, including academic integrity and absence policies. We also support increased advising specialization and will work with the advising office to improve consistency.
12. Identify suitable spaces for larger in-person gatherings and seminars.	Refer to the response to 17.
13. The Dean should facilitate sharing of teaching lab spaces to accommodate the development of lab courses in the Neurosciences.	Refer to the response to 17.
14. The website requires regular updating, so that prospective students can find the information they need (e.g., faculty research expertise).	Refer to the response to 17.
15. Faculty advisors should be assigned a subset of programs, so that they can fully assimilate the details of programs, which change over time. For example, which courses are considered more content-heavy or challenging, and the long-term impact of reduced course loads on candidacy for professional programs.	Refer to the response to 17.
16. The curriculum committee should explore the feasibility of mounting a required lab methods course.	Refer to the response to 6.
17. A departmental retreat would be helpful to facilitate the process of re-structuring the curriculum to accommodate new hires and upcoming retirements.	The department views the External Review as an opportunity for meaningful growth. We remain committed to curriculum renewal, securing necessary instructional resources, improving administrative efficiency, strengthening experiential learning, addressing safety obligations, and aligning learning outcomes with best practices. A departmental retreat is being planned in the New Year to continue this work
18. Consider introducing a capstone course for non-honours thesis students.	Refer to the response to 17.

Dean's Response

This is a summary of the Dean of the Faculty of Art and Science's response to the above documents:

We thank Dr. Ingrid Johnsrude (Western University) and Dr. Cheryl McCormick (Brock University) for their thoughtful and thorough external review of our Neuroscience Program. We appreciated their recognition of the excellent research culture, facilities, student satisfaction, undergraduate involvement in research and the accessibility of faculty members in the Department of Neuroscience. They also presented nearly two dozen recommendations addressed in this report, including the need for more accessible wet lab experiences, consolidating some Independent Study experiences into first or second year courses, requiring Neuroscience 1000 in the program, adding additional administrative and technical support, clearly communicating the academic integrity policy, providing a sense of belonging to postdocs and improving access to certain courses demanded by students outside the Department, such as Anatomy and Physiology, finding larger spaces for seminars and considering a capstone course. To address these and other issues, the external reviewers recommend that a retreat be held. The Program Response demonstrated agreement with many of the recommendations and indicated that they plan to request Instructor and administrative support positions, plan the development of a neuroanatomy lab, explore the possibility of a foundational methods class, develop an Independent Study contract template, study elective flexibility, consider requiring Neuroscience 1000 and develop a standardized syllabus template that includes academic integrity and absence policies.

Provost's Action Plan

Consulting the External Reviewer Recommendations, the Program Response, and Dean Matt Letts, the Academic Quality Assurance Committee made the following four (4) recommendations for action which the Program must report on in 1 and 3 years:

1. The Department of Neuroscience will hold a departmental retreat to consider efficient use of current resources and to complete a curriculum review of their program to ensure that the requirements reflect faculty strengths and changes to the faculty complement (including more limited resources). Items to consider may include:
 - a. Requiring a common first-year course.
 - b. The viability of a capstone course for non-honours thesis students.
 - c. Including more skills-based learning in first and second year courses through the inclusion of lab requirements in some courses.
 - d. Streamlining of other curriculum components to further enable the curriculum considerations above, including considering the possibility of cross-listing to achieve desired learning outcomes while sharing resources and avoiding duplication across programs.
 - e. Assessing learning outcomes of Neuroscience courses to ensure students are learning vital skills (for example experimental design, data management, coding, and modelling training, etc.).
 - f. Exploring whether there are barriers to registration for prerequisite courses that prevent progression through the major, and if so, how this could be mitigated.
2. In addition to the above analysis of curriculum, the Department of Neuroscience should evaluate its use of Independent Studies, including the need for a common syllabus template to reduce inconsistency in expectations; and, mindful of existing resources, the possibility of reducing overlapping Independent Studies through a more generalized laboratory instruction.
3. The Department of Neuroscience faculty should be familiarized with the revised Student Code of Conduct, and the Assessment of Student Learning Policy, and these policies will be clearly communicated in course outlines.
4. The Department of Neuroscience will work with Academic Advising to communicate any changes in their programming that might impact students, and/or designate a faculty advisor to communicate these changes with majors.

The Academic Quality Assurance Committee is satisfied that the Department of Neuroscience academic quality assurance review has followed the U of L's academic quality assurance process appropriately, and acknowledges the successful completion of the review.

Sincerely,



Dr. Lynn Kennedy
Chair, Academic Quality Assurance Committee
Associate Professor, Department of History and Religion

cc Michelle Helstein, PhD.
Provost & Vice-President (Academic)