

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Biochemistry, M.Sc. and Ph.D.

Date of Review: June 22 and 23, 2020

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate programs delivered by Biochemistry. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Biochemistry program submitted a self-study in February 2020 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Health Sciences, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on June 22nd and 23rd, 2020. The visit included interviews with the Vice-Provost and Dean of Graduate Studies, Executive Vice-Dean and Associate Vice-President (Health Sciences), Associate Dean, Grad Studies and Research Health Sciences, Chair of the department and meetings with groups of current students, faculty and support staff.

The assistant dean of the department and the Dean of the Faculty of Health Sciences submitted responses to the Reviewers' Report (July 2020). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- Size of program and program growth, especially when normalized to number of core faculty: ~135 students, 23 core faculty
- Favorable ratio of PhD:MSc students (2:1), reflective of research intensity
- Track record of student success in major national scholarship competitions (eg. CGS-M, CGS-D, Vanier)
- Exceptional number and quality of student-led publications
- Reputation and funding levels of core faculty
- Strong recruitment of graduate students nationally (and internationally)
- Robust system of program governance

Areas for Enhancement or Improvement

- Graduate courses: Although satisfaction of students enrolled in specific graduate courses was very high, there was a desire for a “core curriculum” that emphasizes skills broadly applicable to the diverse fields of research of the Department, and a move away from “Special Topics” courses that, while of high quality, were of limited relevance to many students.
- Mental health: Some students expressed dissatisfaction with mental health resources available on campus. A more structured framework for helping students navigate available mental health resources within and outside of the University was recommended. It was felt that such a resource would be of value to all FHS students (or even all SGS students more broadly) and might best be coordinated centrally.
- Career Preparedness: Students expressed a desire for expansion of program initiatives focused on career preparedness, especially careers outside of academia.
- Data Tracking: The reviewers felt that a more robust system to track graduates (eg. the PhD Exit Survey) would be of significant value.
- Administrative Support: It was clear to reviewers that given the size of the program, additional administrative support is required to alleviate the overwhelming workload currently carried by our sole staff member, Graduate Officer, Ms. Kush.

Summary of the Reviewers’ Recommendations with the Department’s and Dean’s Responses

Implementation Plan

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
We recommend that the Graduate Program proceed with plans to implement a core	Program will proceed with plans to implement a four-course core curriculum. We will	Dr. Miller will oversee core curriculum changes and monitor enrollment pressure on BIOCHEM 732.	Special Topics courses have been suspended beginning in Fall 2020 Term.

<p>curriculum of four courses including the new Modern Techniques and Technologies course and a Career Preparedness course. As part of this recommendation, the capacity of BIOCHEM 732 (Scientific Writing) in particular should be expanded and offered in each semester to ensure all new students have access.</p>	<p>ensure that the structure of this new curriculum allows an opportunity for all interested students to enrol in BIOCHEM 732 (Scientific Writing) – which is a new and very popular course.</p>	<p>Dr. Leigh Wilson (MILO) will be primarily responsible for development of the new career-focused course in consultation with Dr. Miller</p> <p>A coordinator for the new Modern Biochemical Techniques/Technologies course will be identified in the Fall term. This individual will develop the new course curriculum with Dr. Miller.</p>	<p>New Careers course to be offered in Winter 2021 term.</p> <p>BIOCHEM 732 to be offered annually beginning in the 2020/21 academic year.</p>
<p>As part of the Career Preparedness plan, we recommend that a speaker from industry or other suitable non-academic career path, be invited once per semester on a trial basis, to present in the departmental seminar series with provision of ample opportunity for students to meet with these individuals to discuss their career.</p>	<p>Non-academic speakers will be invited to present in the BBS Seminar series (and/or the BBS Research Symposium) at least twice annually, with “lunch-and-learn” sessions scheduled to facilitate interaction with students.</p>	<p>Dr. Sloboda (Associate Chair, Research) coordinates the seminar series and will be responsible for implementation with Dr. Miller.</p>	<p>The COVID-19 pandemic has necessitated a remote seminar series for the foreseeable future. Nevertheless, we will implement this initiative remotely beginning in the 2020/21 academic year.</p>
<p>Given the continued expansion of the Biochemistry Graduate Program, we recommend that resources be made available from the Faculty of Health Sciences</p>	<p>Discussions will be initiated between the Department, Dr. Hanna, and FHS senior leadership to find the resources required to support an additional 0.5 FTE whose role will be to provide administrative support</p>	<p>Dr. Coombes (Chair) and Ms. Dawn Lilley (Director of Administration) will be responsible for follow up with FHS leadership.</p>	<p>Discussions will be initiated in Fall 2020 with the intention of securing resources and completing hiring in 2021.</p>

<p>to hire a part-time employee (at a minimum at 0.5 FTE) to assist Lisa Kush with the administrative management of the Biochemistry Graduate Program.</p>	<p>for the Biochemistry Graduate Program.</p>		
<p>We recommend that the exit surveys for the graduating students are completed each year and the data are provided to the Department of Biochemistry and Biomedical Sciences</p>	<p>PhD exit surveys are administered by SGS. It is therefore not clear whether missing data reflects a failure to administer the survey in the years mentioned by the reviewers, or simply a lack of completion. It is also unclear how much follow-up there is to encourage completion by SGS.</p> <p>The Program feels that there would be significant value in having more detailed information about our graduates post-graduation. However, Ms. Kush is already overburdened as noted above. It is feasible that the department could implement an internal data-gathering procedure for graduates under the purview of a new 0.5 FTE graduate administrative assistant, as noted in the reviewer recommendations.</p>	<p>Administration of PhD exit surveys falls under the purview of SGS.</p> <p>If resources can be secured for an addition 0.5FTE, Dr. Miller and Ms. Lilley will develop a plan for gathering data from our graduates which can become part of the new employee's job description.</p>	<p>Contingent upon hiring a new 0.5FTE. Implementation no earlier than 2021/22 academic year.</p>

<p>Development of a more explicit mental health resources document/map to increase student awareness and guide students to the appropriate supports based on their specific needs.</p>	<p>The Program will undertake a specific consultation with our graduate student body in order to better understand their specific perceptions around mental health needs/shortfalls.</p> <p>This consultation will inform a resource mapping/flow chart to be developed in consultation with FHSGS, Student Wellness (and potentially SGS, if interested).</p>	<p>Dr. Miller will coordinate consultation with the study body.</p> <p>Subsequent resource development efforts will be done in consultation with Dr. Hanna and relevant experts from Student Wellness.</p>	<p>Consultation and resource development will begin in the 2020/2021 academic year, with a plan to implement/distribute the resource in 2021/2022</p>
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Dean's Response, Faculty of Health Sciences

The Executive Vice-Dean and Associate Vice-President Academic and the Vice-Dean and Associate Dean of Graduate Studies thanked the reviewers for their thorough, thoughtful, and constructive review of the Masters and PhD programs in Biochemistry at McMaster University. They appreciated that the reviewers identified strengths of the program including the depth in the lineup of highly qualified and well-funded faculty supervisors, the demonstrated research productivity of the students and their proven success in competitive scholarship competitions. The reviewers note that the program's international reputation for excellence is a valuable recruitment tool.

They reviewed the program's response to the review and strongly supported Dr. Matt Miller's detailed plan for addressing the recommendations. While recognizing that the Biochemistry program has moved in a planful way toward a research-intensive program with few required courses, they support the program's proposal to consider a renewal of the core course curriculum, as well as enhanced offerings related to career development. In regard to the availability of mental health supports, they agreed with Dr. Miller's observation that such supports are the responsibility of the central university, but that students can be better directed to what is available. They appreciated that the reviewers recognized the stalwart work of Ms. Kush as the program administrator and agree that better direction to students about appropriate sources of support may help with managing Ms. Kush's workload. In the Faculty of Health Sciences, program costs are resourced from the educational revenues to the sponsoring departments, and so the feasibility of increased administrative support should be considered within the budget and priorities of the Department of Biochemistry.

Quality Assurance Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with an 18-month progress report and subsequent full external cyclical review to be conducted no later than eight years after the start of the last review.