University of Lethbridge

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TO: Digvir Jayas
President and Vice Chancellor

DATE: November 20, 2025

FROM: Lynn Kennedy
Chair, Academic Quality Assurance Committee

RE: Biochemistry Program Academic Quality Assurance Review

In accordance with the U of L *Academic Quality Assurance Policy and Process*, the Academic Quality Assurance Committee approved the review of the Biochemistry Program at its October 7, 2025 meeting.

The Self Study Committee for this review was comprised of Steve Mosimann (Program Review Coordinator), Borries Demeler, Laura Keffer-Wilkes, and Tony Russell.

The review produced 4 documents:

1. Self Study Report. Written by the Self Study Committee. Received November 18, 2024.
2. External Review Report. Written by Dr. Sean Forrester (Ontario Tech University) and Dr. Tanya Dahms (University of Regina) based on a site visit May 5 to 6, 2025. Received June 24, 2025.
3. Program Response. Written by the Self Study Committee. Received August 1, 2025.
4. Dean's Response. Written by Matt Letts, Dean of the Faculty of Arts and Science. Received September 30. 2025.
5. Provost's Action plan. Written by Michelle Helstein, Provost and Vice President (Academic). Received October 14, 2025.

## Self Study Report

The report highlighted a number of program strengths including:

- Strong enrolment in both second- and third-year courses and labs. The offering of many research-based Independent Studies and Honours Theses.
- A good breadth of senior course offerings (BCHM 3000/4000).
- New lab space and lecture halls in the Science Commons, including a dedicated Biochemistry laboratory space.
- Numerous Science Outreach programs including Destination Exploration; iGEM; Let's Talk Science; RNA Day
- Medium size of institution allows ample direct interaction with Instructors and Professors.
- Biochemistry instrumentation for research is excellent, and Science Stores has created efficiencies and cut costs for some items.
- Financial services now allow for revenue generation, which is used for instrument maintenance and repairs.
- ARRTI has been very successful in obtaining external funding support (RNA Salon) to fund seminar series.

The report also noted some challenges experienced by the program:

- Extremely low number of Faculty Members who identify as women.
- No expertise in metabolism, lipid or membrane Biochemistry.
- Minimal set of required Biochemistry courses.
- No funding or teaching credit for Independent Studies or Honours Theses, or teaching credit for supervising graduate students.
- Seminars are infrequent and irregular; specific BCHM 3000 and 4000 courses are offered irregularly, which makes planning difficult for students.
- Co-op has been underutilized.
- There are concerns about covering our teaching program/replacement of retirees and those seconded to senior administration.
- Concerns around maintenance of equipment, including loss of the capital renewal program. No mechanism or system in place to repair or replace equipment.
- No technical support in electronics/fabrication.
- Lack of clear process for scientific software licenses.
- Lack of breadth outside RNA and protein Biochemistry.
- Teaching load is higher than at our competitor institutions.

The report asked for External Reviewer feedback on several areas including:

- Resources allocated to teaching activities also have an impact on our ability to provide appropriate work assignments. Does our current allocation of human resources strike the appropriate balance between teaching and research?

- Currently, we do not receive teaching credit/recognition or financial support for supervising undergraduate research-based Independent Studies students, which enjoy strong enrollment, or graduate students – should we advocate the Dean of Arts and Science to change this policy, and if so, what model would you suggest?
- While taking into account the size of our institution, how is our research performance within the context of the national profile?
- Is our current teaching load of 4 courses/year appropriate for biochemistry faculty members with active, externally funded research programs?
- What mechanisms would you normally expect to see in place to fund routine research equipment maintenance? Should we consider other models for maintaining and repairing research and teaching equipment?
- Are there other aspects of our curriculum that need to be reconsidered? In particular, are there areas in which we offer little or no instruction and in which we could reasonably be expected to offer courses?

## External Review Report

The External Review Report contained thirteen (13) recommendations for improving the Biochemistry Program:

- Limit very research-active faculty members to a teaching load consistent with peers at similar-sized institutions (up to a maximum of 3 courses per year), count supervision of IS and honours students toward teaching load.
- Restrict new course development for new faculty to one per year and limit them to three total over the tenure-track window. New faculty should be assigned one core biochemistry course in year one, a second course in year two and a third in year three to scaffold teaching responsibilities.
- Ensure each teaching-active professor teaches no more than two core biochemistry courses. Senior faculty should teach core courses every other year to support sabbaticals of new hires.
- Add two new faculty members to address the loss of five biochemists and anticipated retirements.
- Develop formal program-level learning outcomes mapped to course requirements and degree-level expectations.
- Standardize honours thesis expectations, including setting a minimum and maximum weekly hour requirement.
- Create multiple program routes to improve course advising and student planning.
- Increase diversity by targeting future faculty searches to women and LGBTQ2S+ candidates and allow multiple search attempts if necessary.
- Lobby for institutional support for graduate stipends to improve domestic student recruitment.
- Allocate a specific departmental budget for maintaining shared undergraduate equipment, rather than relying on research grants.
- Administration of outreach programs should remain within the department.
- Be creative in securing and creating future co-op positions.
- Organize a departmental retreat to build morale and collaboratively develop program learning outcomes and alternate program routes.

## Program Response

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

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| 1. | Limit very research-active faculty members to a teaching load consistent with peers at similar-sized institutions (up to a maximum of 3 courses per year), count supervision of IS and honours students toward teaching load. | It is widely acknowledged that science faculty members at the University of Lethbridge carry heavier teaching responsibilities compared to peers at other institutions competing for the same research funding. In this context, time available for research and graduate student supervision is our most valuable asset, making teaching load a key consideration. To sustain and strengthen our standing as a research-intensive university, we must remain competitive in grant applications. Addressing the teaching loads of research-active faculty is therefore an ongoing and essential priority.<br><br>The reviewers note that Biochemistry faculty members invest substantial time, effort, and research funds in supporting both graduate and undergraduate programs, particularly through activities such as Independent Studies, Honours Theses, and Applied Studies. More than 80% of these experiential learning activities in the Faculty of Arts and Science occur within the sciences. In the past 10 years, 256 IS courses and 30 undergraduate Honours Theses were completed in Biochemistry. In Chemistry and Biochemistry, faculty members directly train students in specialized, hands-on research techniques, a process that is highly time intensive. This includes a wide array of responsibilities, including acquiring research funding, maintaining equipment, managing laboratory inventories, procuring supplies, developing standard operating procedures, and ensuring compliance with chemical and biosafety regulations. These contributions currently receive no formal recognition in workload calculations, which creates a clear inequity compared to colleagues not engaged in such activities. |
| 2. | Restrict new course development for new faculty to one per year and limit them to three total over the tenure-track window. New faculty should be assigned one core biochemistry course in year one, a second course in year two and a third in year three to scaffold teaching responsibilities. | Unfortunately, it is impossible to restrict new faculty members to one new course development in their first year, given that that the Faculty of Arts and Science requires a teaching load of 3 courses in Year 1. In subsequent years planning has been implemented that indeed limits new developments to a maximum of one course per year. (N.B. In the 2026-2027 academic year no new courses preparations will be required from the junior faculty members.). We propose that an appropriate “ramp-up” for new faculty members is one course in year one, two courses in year two, three courses in year three, and finally, four courses in their fourth year. This provides adequate time to develop high quality courses, secure funding from tri-council granting agencies, recruit undergraduate and graduate students to research teams, while still ensuring that new faculty members are teaching a full load prior to applying for tenure. |
| 3. | Ensure each teaching-active professor teaches no more than two core biochemistry courses. Senior faculty should teach core courses every other year to support sabbaticals of new hires. | The department will consider implementation of a rotation model that distributes core teaching more evenly across all faculty members, including senior members, especially as required because of leaves. With this said, our two senior Biochemistry faculty members have reduced teaching loads because of prestigious external research chairs (Canada 150 Chair, CRC) and substantial administrative duties (Associate Dean), which does not always render such distribution possible, given the demand and need for the high-quality senior courses they deliver. |
| 4. | Add two new faculty members to address the loss of five biochemists and anticipated retirements. | The external reviewers recognized the significant enhancements that have been made to the undergraduate program in response to the previous AQA, but to sustain this momentum, replacement of departed and retired faculty will be essential. We agree that the Biochemistry program would benefit greatly from the replacement of faculty members. Accordingly, we will continue to advocate for permission to hire two more Biochemistry faculty members and look forward to continuing to work closely with the Faculty of Arts & Science to sustain program quality. |

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| 5. | Develop formal program-level learning outcomes mapped to course requirements and degree-level expectations. | The department recognizes this gap. The Biochemistry Program Committee has been re-activated (after a period of dormancy because of recent retirements and departures). It has been tasked with developing program learning outcomes. |
| 6. | Standardize honours thesis expectations, including setting a minimum and maximum weekly hour requirement. | This is already done. Expectations are listed in the course calendar and stated in course syllabi. |
| 7. | Create multiple program routes to improve course advising and student planning. | Given the complexity of the B.Sc. in Biochemistry program, which is jointly delivered by the Departments of Chemistry and Biochemistry and Biological Sciences, creating additional routes within a four-year window is challenging. Nonetheless, the Biochemistry Program Committee is committed to carefully exploring the possibility. |
| 8. | Increase diversity by targeting future faculty searches to women and LGBTQ2S+ candidates and allow multiple search attempts if necessary. | The department would welcome the opportunity to make targeted hires, but only if, as suggested, we are assured in writing that a failed search does not mean we must again compete in the open Faculty of Arts and Science pool for said position. |
| 9. | Lobby for institutional support for graduate stipends to improve domestic student recruitment. | The department will continue to lobby for increased institutional support for graduate student stipends |
| 10. | Allocate a specific departmental budget for maintaining shared undergraduate equipment, rather than relying on research grants. | The department does not have an allocated budget for maintaining undergraduate equipment. Instead, we make an annual request to the Faculty of Arts and Science to replace or repair infrastructure. While the Faculty has been highly supportive in this regard, we would prefer reinstatement of the Capital Renewal Program, which provides greater certainty with respect to such funds, more easily allowing long-term, strategic planning. |
| 11. | Administration of outreach programs should remain within the department. | We agree that the department's involvement in STEM outreach is important and continued administration by our department members will ensure continuity and impact. Currently, the iGEM and Let's Talk Science programs are both delivered by a Biochemistry Instructor and RNA Day is run by ARRTI. Destination Exploration is not administered by the department. |
| 12. | Be creative in securing and creating future co-op positions. | The growing network of our faculty members will certainly lead to increased access to new co-op positions. Faculty members will continue to work with Career Bridge to expand co-op placements to provide additional and more diverse work experiences. |
| 13. | Organize a departmental retreat to build morale and collaboratively develop program learning outcomes and alternate program routes. | The department has been hosting monthly potlucks throughout the school year for many years. In addition, over the past three years targeted academic and social retreats have been held twice per year, once in the summer and once in December. Accordingly, we are proud of our positive and collegial work environment.<br><br>As stated in the response to Recommendations #6 and #8, we will develop program learning outcomes and attempt to create additional program planning maps. |

## Dean's Response

The Dean of the Faculty of Arts and Science responded to the recommendations from the External Review Report:

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| 1. | Limit very research-active faculty members to a teaching load consistent with peers at | Our goal is to provide a fair, consistent and flexible overall workload that includes a teaching assignment that promotes research excellence, positive student learning outcomes and service to the university and society. With this |

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| | similar-sized institutions (up to a maximum of 3 courses per year), count supervision of IS and honours students toward teaching load. | in mind, we understand the benefit of a reduced course-based teaching assignment on research activity and we have worked hard not to increase teaching assignments in the face of major budgetary reductions and a slightly smaller faculty complement. However, the recommendation for a further reduced base teaching assignment has a very high cost that cannot currently be met across the Faculty. We have appreciated the collective efforts with faculty members to streamline program requirements, allow more cross-listing and reduce service release for smaller and less complex departments. This has allowed a maintenance of the four-course standard during the largest provincial budgetary reductions to higher education in history. We note that research chair success, chairship, lab coordination activity and service commitments have resulted in a mean teaching assignment in the Department of Chemistry & Biochemistry of about 2.5, or lower than this if senior administrators with active research are included. Similarly, variably intensive service activity has reduced Instructor teaching assignments in some cases.<br><br>A model that reduces the number of course equivalents taught according to the number of Independent Studies and / or graduate students supervised would be more administratively complex and require a higher base teaching assignment for those with limited engagement in these activities. This is because we are not presently able to reduce the overall total number of courses taught by the professoriate without further sustainability exercises that would have to be managed with the potential impacts on students in mind. Increased sessional instructor coverage is neither feasible with limited sessional budgets nor desirable, and the external reviewers remarked on our ability to deliver our program's core courses with permanent members. The advantages of a new model crediting supervisory work would be to promote equality in overall time devoted to teaching and student mentorship. At present, credit for this work is limited to favourable evaluation and workload allocation calculations in Professional Activity Reports (PARs). Related discussions have taken place at recent Chemistry & Biochemistry meetings with the Dean and will continue to be a faculty-wide consideration. We recognize that this is a common theme in AQA reports and we are open to the possibility of a new model, with the understanding that we cannot afford to reduce the total number of courses delivered.<br><br>With respect to new course preparation, the normal teaching reduction we provide to new faculty members is one course and we do strive to reduce the number of new preparations. The Dean's Office is willing to work with Department Chairs to assign a smaller number of new preparation courses to professors to the degree that this is possible while maintaining sufficient flexibility to support study leaves and variations in instruction availability. The Dean's Office appreciated the notes in the Program Response regarding how to limit new preparations and ensure core course coverage by senior professors. This is important, as it is Department Chairs who must first consider new preparation workload when recommending teaching assignments. |
| 2. | Restrict new course development for new faculty to one per year and limit them to three total over the tenure-track window. New faculty should be assigned one core biochemistry course in year one, a second course in year two and a third in year three to scaffold teaching responsibilities. | Refer to the response to recommendation 1. |

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| 3. | Ensure each teaching-active professor teaches no more than two core biochemistry courses. Senior faculty should teach core courses every other year to support sabbaticals of new hires. | Refer to the response to recommendation 1. |
| 4. | Add two new faculty members to address the loss of five biochemists and anticipated retirements. | We are pleased with the outcomes of our mutual efforts to secure new faculty members to maintain the vitality of the excellent Biochemistry program at a time of decreasing budgets. The three new assistant professor hires, combined with regularization of an Instructor position (and the receipt of another Instructor with the exit of a professor to another department) have allowed us to maintain sufficient teaching capacity, but with a slight decrease in the number of research-active faculty members in the Department. The Department has delivered brilliantly with outstanding new hires, giving us confidence in the ability of this Department to meet and exceed the research, teaching and service goals of new positions granted. Additional position requests will be considered fairly in each cycle and presented to the Provost along with requests from other units. |
| 5. | Develop formal program-level learning outcomes mapped to course requirements and degree-level expectations. | The Dean's Office enthusiastically endorses this recommendation and is pleased by the re-establishment of the Biochemistry Program Committee. The establishment of program learning outcomes and course mapping is a critical need in many disciplines, so we thank the biochemists for this commitment. |
| 6. | Standardize honours thesis expectations, including setting a minimum and maximum weekly hour requirement. | The Dean's Office agrees with the Program Committee that these expectations are listed in the course calendar and syllabi and trusts that faculty members will be mindful of the time-commitment concern raised in this review. |
| 7. | Create multiple program routes to improve course advising and student planning. | It is important to avoid increasing program complexity that might require more frequent offerings as we need to maintain efficiency, especially given the teaching workload concerns outlined in Recommendation 1, but we are pleased to see the commitment of the Biochemistry Program Committee to consider possibilities. Students should be encouraged to work through their Program Planning Guides and seek the assistance of Academic Advisors. Overall, we recommend against additional program routes or streaming at this time. |
| 8. | Increase diversity by targeting future faculty searches to women and LGBTQ2S+ candidates and allow multiple search attempts if necessary. | We are pleased with the excellent search outcomes with faculty following the EDI principles outlined in the updated Arts & Science Search Policy and in alignment with institutional goals, and we encourage the department to continue its efforts to ensure that our postings result in as large and diverse a pool of applicants as possible. If the department wishes for their next search to be targeted, this case can be presented to the Dean's Office in the position request. In all searches, we collectively work with the ABC Office to ensure best practices are met. As for the concern expressed in the program response about the potential for failed searches, requests for multiple search attempts would fall under the purview of the Provost upon request from the Dean and Chair. |
| 9. | Lobby for institutional support for graduate stipends to improve domestic student recruitment. | We agree with the importance of investment in graduate students at a CARU among competing priorities and thank the external reviewers and program response team for the recommendation that we advocate for additional funding. |
| 10. | Allocate a specific departmental budget for maintaining shared undergraduate equipment, rather than relying on research grants. | The Dean's Office is committed to adequate purchase, replacement and maintenance / repair of undergraduate teaching-related equipment. Current budgetary realities mean that we need to carry out repairs and replacement largely on an as-needed basis rather than allocating a pre-determined amount each year while balancing a tight budget. The department is encouraged to |

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| | raise any deficiencies and report on any equipment not being used for its intended purposes. |
| 11. Administration of outreach programs should remain within the department. | The biochemistry department is a leader in STEM outreach, and we are supportive of continued activities. There has been no move to alter the administration of outreach programs, aside from minor organizational structural changes in the growing Destination Exploration program. The Faculty of Arts & Science has an outreach portfolio in the Dean's Office, and administers Youth Outreach, including Destination Exploration and also compensates certain service efforts related to department-level outreach work. We are thankful for the outstanding commitment of biochemists to outreach in programs like iGEM, Let's Talk Science, RNA Day and more. |
| 12. Be creative in securing and creating future co-op positions. | The University of Lethbridge has extensive co-op opportunities through CareerBridge and the Dean's Office is pleased by the commitment of the biochemists to continue to work with them to expand co-op placements with diverse opportunities. |
| 13. Organize a departmental retreat to build morale and collaboratively develop program learning outcomes and alternate program routes. | The Dean's Office will continue to ensure adequate resources for department retreats and social events and agrees that a retreat might be an efficient time to develop program learning outcomes. We would be hesitant to support additional program routes or streams with the current faculty complement and given workload concerns, but retreats could also serve as an opportunity to update and optimize the curriculum, in addition to other goals such as aligning departmental research directions. |

## Provost's Action Plan

Consulting the External Reviewer Recommendations, the Program Response, and the report and meeting with 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 Biochemistry program will hold a retreat to assess curriculum and develop formal program-level learning outcomes mapped to course requirements and degree-level expectations. Curriculum revisions that may arise will reduce curriculum complexity and workload to align delivery with available resources.
2. The Biochemistry program will conduct an assessment of:
    a. Timelines around new course development and teaching responsibilities for faculty.
    b. Course offerings to ensure they reflect current areas of program expertise.
    c. Honours Thesis and Independent Studies – both expectations for students (particularly lab assignment hours) and workload considerations for faculty in alignment with available resources.
3. The Biochemistry program will work collaboratively with A&S Advising to ensure that there are clear pathways through the program, and that these are being clearly explained to students.
4. The Biochemistry program will work collaboratively with the Department of Chemistry & Biochemistry and the Co-op Office and Career Bridge to identify additional co-op opportunities and ensure these are communicated to students.
5. The Biochemistry program will work with the Vice-Provost Accessibility, Belonging, and Community to ensure compliance with the principles of the University of Lethbridge Strategic Plan addressing all aspects of inclusion and belonging within the program.

The Academic Quality Assurance Committee is satisfied that the Biochemistry Program 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)