Microbiology and Immunology
Final Assessment Report & Implementation Plan
May 2026

Faculty / Affiliated University College	Schulich School of Medicine & Dentistry	
Degrees Offered	Bachelor of Medical Sciences (BMSc)	
Modules	Honours Specialization in Microbiology and Immunology Major in Microbiology and Immunology Minor in Microbiology and Immunology	
Date of Last Review	2017-2018	
External Reviewers	Dr. Jean Marshall, Department of Microbiology and Immunology Dalhousie University	Dr. Caitlin Mullarkey, Department of Biochemistry and Biomedical Sciences McMaster University
Internal Reviewers	Dr. Anton Puvirajah, Associate Dean (Teacher Education) Faculty of Education	Asad Awawdeh, Criminology & Political Science Undergraduate Student
Date of Site Visit	February 26 & 27, 2026	
Date Review Report Received	March 14, 2026	
Date Program/Faculty Response Received	Program Response: March 16, 2026 Faculty Response: March 16, 2026	
Evaluation	Good Quality	
Approval Dates	SUPR-U: June 16, 2026 ACA: September 8, 2026 Senate (for information): September 18, 2026	
Year of Next Review	2033-2034	
Progress Report	June 2029	

Overview of Western's Cyclical Review Assessment Reporting Process

In accordance with Western's Institutional Quality Assurance Process (IQAP), the Final Assessment Report (FAR) provides a summary of the cyclical review, internal responses, and assessment and evaluation of the undergraduate Microbiology and Immunology Program, delivered by the Schulich School of Medicine & Dentistry.

This FAR considers the following documents:

- the program's self-study brief;
- the external reviewers' report;
- the response from the Program; and
- the response from the Dean, Schulich School of Medicine & Dentistry.

This FAR identifies the strengths of the program and opportunities for program enhancement and improvement, and details the recommendations of the external reviewers – noting those recommendations to be prioritized for implementation.

The Implementation Plan details the recommendations from the FAR that have been selected for implementation, identifies who is responsible for approving and acting on the recommendations, specifies any action or follow-up that is required, and defines the timeline for completion.

The FAR (including Implementation Plan) is sent for approval through the Subcommittee on Program Review - Undergraduate (SUPR-U) and the Senate Committee on Academic Curriculum and Awards (ACA), then for information to Senate and to the Ontario Universities' Council on Quality Assurance. Subsequently, it is publicly accessible on Western's IQAP website. The FAR is the only document from the cyclical review process that is made public; all other documents are confidential to the undergraduate Microbiology and Immunology Program, the Schulich School of Medicine & Dentistry, and SUPR-U.

Executive Summary

The Bachelor of Medical Sciences (BMSc) program at Western University was introduced in 2001 as a joint venture between the Schulich School of Medicine & Dentistry and the Faculty of Science to provide students with training in the basic medical sciences. From its inception in 2001 with approximately 30 students, the program grew in popularity to 300 students by 2010 and now to over 1100 students in 2024-2025. The office of Basic Medical Sciences Undergraduate Education (BMSUE) oversees the delivery of the modular programs within the seven basic medical sciences departments including the Department of Microbiology and Immunology.

Originating in 1939, the Department of Microbiology and Immunology now offers three module options that allow students to explore the disciplines of microbiology and immunology while complementing their studies with courses from other departments and faculties. Total modular enrolments in 2024-2025 were 131 students. The undergraduate program continues to evolve in response to emerging scientific discoveries, public health priorities, and pedagogical innovation. Students benefit from integrated learning environment that blends foundational theory, laboratory skills, and independent research.

The self-study was informed by several student focus groups, an alumni survey, a workplace skills analysis (via use of Lightcast), revision of the program learning outcomes and a curriculum mapping exercise. Initiated by a full-day departmental curriculum retreat, the Undergraduate Education Committee met regularly in support of the development of the self-study.

The external reviewers shared a positive assessment of the Microbiology and Immunology Program. They offer eight recommendations with considerations for further enhancement.

Strengths and Innovative Features Identified by the Program

- Nationally recognized and research-active faculty members – with research funding increasing 45% over the past 5 years.
- The curriculum is intentionally sequenced to build knowledge progressively while minimizing redundancy across bacteriology, virology, and immunology.
- Students enrolled in the Honours Specialization module complete a full-year independent research project (Microbiology and Immunology 4985E) as their capstone experience which provides the opportunity to conduct original research under faculty supervision, while developing advanced skills in experimental design, data analysis, and scientific communication.
- Experimentation with student-centered pedagogy such as a flipped-classroom pandemic simulation project in Microbiology and Immunology 3200B, collaborative expert-interview video projects in Microbiology and Immunology

3500B, and diverse assessment formats across courses (e.g., pandemic narratives, newspaper articles, biotechnology portfolios).
- The Microbiology and Immunology Student Association (MISA) plays a central role in building academic and community connections supported by including participation in “Meet the Professor” nights and mentorship at an annual Case Competition.
- The Murray Seminar Series brings leading microbiologists and immunologists to Western to present their research and interact with students and faculty.

Concerns and Areas of Improvement Identified and Discussed by the Program

- An unevenly distributed faculty complement, combined with a wave of pending retirements and slow recruitment, threatens both curricular breadth and workload equity.
- Gaps in faculty expertise (particularly parasitology and mycology) limit coverage of important areas of the discipline
- Institutional course enrolment thresholds constrain specialized offerings that align with student interests and emerging disciplinary trends.
- Students and alumni commented on limited career preparation and experiential pathways beyond the thesis – suggesting a need for more structured programming (e.g., alumni panels, industry site visits, clinical placements) to connect disciplinary training to diverse professional outcomes.

Review Process

As part of the external review, the review committee, comprising two external reviewers, one internal reviewer and a graduate student reviewer, were provided with Volume I and II of the self-study brief in advance of the scheduled review and then met in-person over two days with the:

- Vice-Provost, Academic Programs
- Vice-Provost, Academic Planning, Policy and Faculty
- Director, Office of Academic Quality and Enhancement
- Vice-Dean, Basic Medical Sciences
- Associate Dean, Basic Medical Sciences
- Department Chair, Department of Microbiology and Immunology
- Undergraduate Chair, Department of Microbiology and Immunology
- Undergraduate Education Committee Members
- Members of the Western Libraries Team
- Associate Director, Digital Learning, Centre for Teaching and Learning
- Educational Developer, Digital Learning, Centre for Teaching and Learning
- Department Staff
- Department Faculty Members

- Undergraduate Students
- Graduate Teaching Assistants

Following the site visit, the external reviewers submitted a comprehensive report of their findings which was sent to the Program and Dean for review and response. Formative documents, including Volumes I and II of the Self-Study, the External Report, and the Program and Decanal responses form the basis of this FAR. The FAR is collated and submitted to SUPR-U by the Internal Reviewer with the support of the Office of Academic Quality and Enhancement.

Summative Assessment – External Reviewers' Report

The External Reviewers shared that the program**: "***is a rigorous and well-regarded program that aligns strongly with the University's strategic priorities in research-informed teaching, experiential learning, and student success. The curriculum is thoughtfully structured, progressing from foundational coursework to advanced laboratory training and a capstone fourth-year research thesis. The department is committed to continued improvement of the program and course offerings and importantly is responsive to the needs of students in the broader educational landscape."*

Strengths of the Program:

- All courses in the program are taught by full-time faculty members, the vast majority of whom maintain active research laboratories.
- The third-year laboratory courses (Microbiology and Immunology 3610F and 3620G) are particularly distinctive for the breadth of modern techniques introduced (such as hands-on animal handling) which the reviewers note is uncommon in undergraduate programs across the country.
- Professional development is strengthened by a new course, Beyond the Bench: Building Skills for Scientific and Professional Success, which is a co-requisite for the Microbiology and Immunology 4986Y thesis course.
- Courses incorporate discussion of the societal and structural determinants that influence infectious disease outcomes, encouraging students to consider how health inequities, socioeconomic factors, and global disparities shape disease burden and healthcare access.
- Extensive capstone research thesis where students spend about 15 hrs/week embedded in a faculty member's lab immersed in research experiences that develop experimental design, data analysis, and scientific communication skills.
- A significant number of Honours Specialization students choose to remain in the department to pursue graduate studies.

Prospective Areas of Improvement for the Program to Consider

- A disproportionate share of program administration, curriculum coordination, and student support rests on a single individual (the Undergraduate Chair) (associated with recommendation #1).
    - Importance of reviewing the Terms of Reference for the Undergraduate Chair role and the role and responsibilities of Course Coordinators (associated with recommendations #1 and #7).
- Review of administrative support and assistance in day-to-day class and evaluation management – currently administrative support appears temporary and limited (associated with recommendation #2).
- Consider ways to harmonize curriculum across bacteriology, virology, and immunology themes and improve consistency in assessment practices within multi-instructor courses. (associated with recommendations #5 and #6).
- Current admissions processes, based primarily on GPA and course completion, may disproportionately disadvantage students from equity-deserving groups (associated with recommendation #8).
- Revisit any competing demands on students in relation to the restructured thesis course (Microbiology and Immunology 4985E) and the Beyond the Bench professional development offering (Microbiology and Immunology 4986Y).
- Individuals able to teach in more than one of the three traditional disciplines of bacteriology, immunology and virology would be particularly valuable as would increased expertise in mycology or parasitology.

Summary of the Reviewers' Recommendations and Program/Faculty Responses

The following are the reviewers' recommendations in the order listed by the external reviewers.

Reviewers' Recommendation	Program/Faculty Response
Recommendation #1: Re-evaluate Scope and Intensity of Undergraduate Chair Workload - Implement additional support mechanisms or structural adjustments to distribute responsibilities or curriculum coordination, program administration, and student support more effectively. - Explore a dedicated Teaching Scholar to support the program particularly regarding areas such as curriculum development, pedagogical innovation, and coordination of large undergraduate courses.	**Program:** To support the critical contributions of the Undergraduate Chair, we propose establishing an Associate Undergraduate Chair position. This role would provide additional support during periods of high workload and ensure continuity in leadership when the Undergraduate Chair is unavailable. We also propose establishing three Curriculum Lead roles on the Undergraduate Education Committee in the areas of immunology, bacteriology, and virology. These roles will support integration of the curriculum across courses and year levels. The current Undergraduate Chair is also planning to establish a Microsoft Teams channel to support Course Coordinators. This resource will include standard operating procedures (SOPs) and training materials to address common and frequently recurring questions related to course coordination. It will also provide clear guidance on appropriate points of contact for various types of inquiries, helping to distribute responsibilities across the Undergraduate Education Committee. **Faculty:** The decanal team supports, the program's response. Teaching Scholar advertisements are developed in conjunction with HR at the Schulich School of Medicine & Dentistry and the advertisements are posted on the Faculty or Relations Website. A search committee with appropriate expertise across the basic medical sciences and led by the Associate Dean, Basic Medical Sciences Undergraduate Education, is formed and is responsible for reviewing applicants, interviews and final selection. The decanal team encourages MNI faculty to apply for Teaching Scholar's positions when they become available, but these positions are not typically allocated to any department or program.

Recommendation #2: Establish Dedicated Administrative Support for the Program: To support program operations and reduce the heavy workload on the Undergraduate Chair, stable administrative staffing is needed to assist faculty with teaching logistics, Brightspace, class evaluations, and student enquiries.	**Program:** Over the past year, following the retirement of the departmental Manager of Administration and Finance (MAF), we have benefitted from the appointment of an experienced MAF who has been key in restructuring administrative operations. This MAF position is now shared with the Department of Biochemistry, reflecting a broader shift toward shared administrative roles across the Schulich School of Medicine & Dentistry as part of the School's restructuring across its 21 administrative units. Although several administrative roles are now shared across two departments (with Biochemistry), there remains an effective shortfall of at least one position. To address this gap, financial approval has been secured to recruit a new staff member to be shared between both departments. Interviews are imminent, and this hire is expected to alleviate the additional workload currently being placed on the Undergraduate Administrator in both departments. **Faculty:** The decanal team supports, the program's response.
Recommendation #3: Bolster Faculty Member Capacity Support recruitment of 40/40/20 faculty members to the Department to ensure appropriate disciplinary expertise for course delivery, while also providing capacity to accommodate research leaves and anticipated faculty retirements.	**Program:** We fully agree and are actively addressing this through three ongoing faculty searches. Interviews are currently underway for two 40:40:20 appointments in the fields of neurovirology and neuroimmunology. While these positions are slated to start as early as July 1, 2026, a more realistic timeline is that the candidates will join the department in 2027. In addition, we are also hiring a faculty member for the endowed Miriam Burnett Research Chair in Urological Sciences within the Lawson Research Institute (Lawson) in the field of microbiome research, with the expectation that this position will be filled by July 1, 2026. Although the appointment is structured as 60% research, 20% teaching, and 20% service, we anticipate that the appointed Burnett Chair also make meaningful contributions to the undergraduate curriculum. Collectively, these three hires are expected to help alleviate teaching demands across the department. **Faculty:** The decanal team supports, the program's response.

Recommendation #4: Support for Department Vision Provide necessary supports to ensure that the Department's Chair vision for strengthening undergraduate education can be implemented effectively and sustainability while maintaining the high standards and reputation of the Microbiology and Immunology program.	**Program:** The Department Chair works closely with senior leadership in the Schulich School of Medicine & Dentistry to ensure alignment with and support for the Department of Microbiology and Immunology's strategic vision. Ongoing, coordinated investments from the School in future faculty hires and infrastructure related to infection and immunity will help sustain a strong cohort of undergraduate educators and ensure continued delivery of high-quality teaching in the Department of Microbiology and Immunology. **Faculty:** The decanal team supports, the program's response. There are many resources at the university that can assist with program development and enhancement. Examples include working with other BMSUE undergraduate chairs to develop and share best practices, the Centre for Teaching and Learning, the Librarians/Archivists and EDID-DIA offices (Indigenous Initiatives and Associate Dean, EDI-D at Schulich). While never a guarantee, monetary support can be requested by the department through the annual budget process and through the Science Student Donation Fund. New faculty hires, beyond those already committed, in the Basic Medical Sciences are prioritized by the Basic Science Chairs based on teaching and research needs of the Schulich School of Medicine & Dentistry and institutional priorities.
Recommendation #5: Harmonize Curriculum Across Thematic Areas Continue efforts to harmonize the curriculum across thematic areas (bacteriology, virology, and immunology) at all program levels to promote coherence, integration, and progression of learning outcomes.	**Program:** The Department Chair has submitted a budget request to support a Strategic Retreat to occur in Spring 2027. As part of this initiative, a comprehensive review of the undergraduate curriculum is proposed to identify opportunities for greater harmonization. The program will also consider opportunities to further integrate the core disciplines of immunology, bacteriology, and virology across the curriculum. In this context, upcoming faculty hires in neurovirology and neuroimmunology present a valuable opportunity to bridge traditionally distinct areas, reflecting the increasingly interdisciplinary nature of these fields. Similarly, the anticipated Burnett Chair in microbiome research is expected to bring expertise that spans bacteriology, bioinformatics, and urology, creating further opportunities for cross-disciplinary integration. Collectively, these efforts will support a more cohesive and forward-looking undergraduate curriculum. **Faculty:** The decanal team supports, the program's response.

Recommendation #6: Improve Assessment Consistency in Multi-Instructor Courses Undertake a review of assessment and evaluation practices in multi-instructor courses to better ensure alignment, consistency, and transparency for students and support consistent quality of outcomes. Consider mechanisms to make grading criteria available in advance to students so that expectations for assessment are transparent and consistently understood.	**Program:** When multiple instructors are required, Course Coordinators will play a key role in harmonizing assessments (particularly examinations) to ensure greater consistency, a practice that has already been implemented successfully in select courses (e.g., Microbiology and Immunology 3500B). With respect to grading transparency, we acknowledge the importance of clearly communicating expectations to students. In many cases, detailed grading rubrics are used internally to support consistency, particularly in courses with multiple teaching assistants, without being fully prescriptive to students in advance. A significant portion of grading is conducted by TAs, and we have established several mechanisms to promote consistency and fairness. These include assigning specific TAs to grade assessments across the entire class, incorporating peer review and calibration among TAs, and providing detailed grading guidelines and exemplars. We also facilitate ongoing communication through platforms such as Microsoft Teams and, where appropriate, structured “grading retreats” to support discussion and alignment among graders. Moving forward, these practices will be reviewed more systematically through the Curriculum Leads and our new annual course documentation process to ensure continued alignment and identify opportunities for improvement. We will also seek guidance from the Centre for Teaching and Learning, as needed. **Faculty:** The decanal team supports, the program’s response.
Recommendation #7: Define Course Coordinator Roles and Annual Reviews Define the role and responsibilities of course coordinators and ensure that each course is annually reviewed for content updates and coherence between instructors and that teaching retreats are held regularly (at least every 3 years) to review overall course contents and offerings.	**Program:** The Department will formalize and clearly communicate the roles and responsibilities of Course Coordinators. To support ongoing curriculum quality, responsibility for annual course review will be shared with the newly established Curriculum Leads (immunology, bacteriology, and virology). Each Curriculum Lead will convene annual meetings with Course Coordinators within their area to review course content, assessment practices, and alignment across instructors and year levels. A standardized review template will be developed to guide these discussions and document any updates, revisions, and areas for improvement. This approach will ensure a consistent and structured process for capturing changes while distributing the workload more effectively. At the program level, the Undergraduate Chair will work with Curriculum Leads to synthesize key findings and identify broader trends or gaps. These insights will inform departmental planning, including the scheduled retreat in Spring 2027. Teaching retreats will continue on a regular cycle (at least every three years) to support ongoing, coordinated curriculum development.

	Faculty: The decanal team supports, the program's response.
Recommendation #8: Enhance Admissions Flexibility for Equity-Deserving Students Consider enhancing the flexibility of competitive entrance requirements to allow for less than full course load students (4 rather than 5 courses per term) to compete effectively for places in the program in documented situations of need for course reduction (e.g., disability, caregiving or parental responsibilities etc).	**Program:** Students are currently supported through existing institutional resources, including Academic Advising and Accessible Education, which provide guidance and formal accommodations where appropriate. At the same time, admissions policies and competitive entry requirements for the Microbiology and Immunology program are governed at the level of the broader Bachelor of Medical Sciences (BMSc) program. As such, this recommendation falls outside the direct purview of the Department. Any changes to entrance requirements would need to be considered and implemented by the Decanal Team overseeing the BMSc program. **Faculty:** As many BMSc programs are currently undergoing IQAP review, we plan to review program level recommendations such as entrance requirements at future Basic Medical Science Undergraduate Education committee meetings.

Implementation Plan

The Implementation Plan provides a summary of the recommendations that require action and/or follow-up. In each case, the Program Chair, in consultation with the Dean of the Faculty are responsible for enacting and monitoring the actions noted in Implementation Plan.

Recommendation	Proposed Action and Follow-up	Responsibility	Timeline
Recommendation #1: Re-evaluate Scope and Intensity of Undergraduate Chair Workload	- Restructure Undergraduate Education Committee to include three curriculum lead roles. - Establish an Associate Undergraduate Chair position. - Establish a Microsoft Teams channel to support Course Coordinators.	Department Chair; Undergraduate Chair; Undergraduate Education Committee	By September 2026
Recommendation #2: Establish Dedicated Administrative Support for the Program	- Recruit a new staff member to be shared between the Microbiology and Immunology and the Biochemistry Departments. - Continue to advocate for the importance of sustained administrative support.	Chief Administrative Officer; Department Chairs; Manager of Administration and Finance	By July 2027
Recommendation #3: Bolster Faculty Member Capacity	- Support the three ongoing faculty searches that are currently underway and are slated to start as early as July 1, 2026, including for the endowed Miriam Burnett Research Chair in Urological Sciences within the Lawson Research Institute (Lawson).	Department Chair; Selection/Appointment Committees	By July 2027
Recommendation #4: Support for Department Vision	- Ongoing and coordinated investments from the Schulich School of Medicine & Dentistry in future faculty hires and infrastructure related to infection and immunity will help sustain a strong cohort of undergraduate educators and the delivery of high quality teaching.	Decanal Team; Department Chairs	Ongoing with check-in as part of June 2029 progress report.

Recommendation #5: Harmonize Curriculum Across Thematic Areas	- Submit a budget request to support a strategic retreat in Spring 2027. A comprehensive review of the undergraduate curriculum is proposed to identify opportunities for greater harmonization. - Identify opportunities to further integrate the core disciplines of immunology, bacteriology and virology across the curriculum. ■ Explore additional approaches to strengthen this integration across courses.	Department Chair; Undergraduate Chair	By July 2027
Recommendation #6: Improve Assessment Consistency in Multi-Instructor Courses	- Streamline teaching assignments to reduce fragmentation across instructors. ■ When multiple instructors are required, Course Coordinators will play a key role in harmonizing assignments, particularly examinations. ■ Seek guidance from the Centre for Teaching and Learning, as needed. - Systematic review of TA assignments and grading practices though the Curriculum Leads and the new annual course documentation process.	Department Chair; Undergraduate Chair; Curriculum Leads	By September 2027
Recommendation #7: Define Course Coordinator Roles and Annual Reviews	- Formalize and clearly communicate the roles and responsibilities of Course Coordinators. - Convene annual meetings with Course Coordinators to review course content, assessment practices and alignment across instructors and year levels. ■ A standard review template will be developed to guide discussions and document updates, revisions and areas for improvement. ■ Insights from meetings will inform departmental planning. - Continue teaching retreats on a regular cycle (at least every three years) to support ongoing coordinated curriculum development.	Department Chair; Undergraduate Chair; Curriculum Leads; Course Coordinators	By September 2026

Recommendation #8: Enhance Admissions Flexibility for Equity-Deserving Students	- Review the entrance requirements at future Basic Medical Sciences Undergraduate Education committee meetings.	Decanal Team	Ongoing with check-in as part of June 2029 progress report.