UNIVERSITY OF TORONTO

University of Toronto Quality Assurance Process (UTQAP)
Cyclical Review: Final Assessment Report and Implementation Plan

Programs Reviewed:	Undergraduate program (offered in association with the Faculty of Arts & Science): Immunology, B.Sc. (Hons.): Specialist, Major, Minor Graduate programs: Immunology, M.Sc., Ph.D.
Unit Reviewed:	Department of Immunology
Commissioning Officer:	Dean, Faculty of Medicine
Reviewers (Name, Affiliation):	1. Professor Jeremy Boss – Department of Microbiology and Immunology, Emory University 2. Professor Michael Gold – Department of Microbiology and Immunology, University of British Columbia 3. Professor Kamala Patel – Department of Physiology & Biochemistry and Department of Biochemistry & Molecular Biology, University of Calgary
Date of review visit:	February 1 – 2, 2017
Date reported to AP&P:	November 2, 2017

Unless otherwise noted, all bulleted comments apply to all programs reviewed.

1 Outcome

- The Committee on Academic Policy and Programs (AP&P) concluded that the Decanal response adequately addressed the review recommendations.

2 Significant Program Strengths

- Timely and relevant undergraduate program that is intensive and flexible in its course and program offerings, with graduates who are sought after by many national and international graduate programs
- PhD graduates are now positioned in research leadership roles across Canada and internationally
- “World class” faculty research, with tenure-and teaching-stream faculty working together effectively in the delivery of the undergraduate program

3 Opportunities for Program Enhancement

The reviewers recommended that the following be considered:

- Increasing coordination and collaboration to address duplication in undergraduate course offerings to ensure courses complement one another, to develop new offerings (e.g., computational biology/bioinformatics), and to improve integration of the curriculum; considering curriculum and content mapping to help enhance the program
- Increasing research experiences and opportunities for undergraduate students
- Enhancing undergraduate teaching by supporting faculty development opportunities in new technologies
- Supporting cohort building and career exploration amongst undergraduate students
- Addressing graduate time to completion; enhancing the structure, checkpoints and outcomes of the PhD and mechanisms to manage student progress
- Enhancing support for graduate student travel to academic meetings
- Prioritizing efforts to address the asbestos and recurring water damage on the 7th floor in the Medical Sciences Building

UNIVERSITY OF TORONTO
FACULTY OF MEDICINE

L. Trevor Young, MD PhD FRCPC
Dean
Vice-Provost, Relations with Health Care Institutions

October 6, 2017

Professor Sioban Nelson
Vice-Provost, Academic Programs
University of Toronto
Simcoe Hall, Room 225 27
Kings College Circle
Toronto, ON M5S 1A1

Dear Vice-Provost Nelson,

I am responding to your request for a decanal administrative response to the External Review of the Department of Immunology's undergraduate (BSc) and graduate programs (MSc, PhD).

On behalf of the Faculty of Medicine, University of Toronto, I would first like to thank the three External Reviewers, Professors Jeremy Boss (Emory University), Michael Gold (University British Columbia) and Kamala Patel (University of Calgary) for their outstanding review of the Department of Immunology on February 1-2, 2017. The reviewers referred to the Department of Immunology as "a world class research and academic unit". I would also like to thank on behalf of the Faculty Professor JC Zúñiga-Pflücker, Chair of the Department, the administrative staff of the Department and all those who contributed to the preparation of the comprehensive self-study. I also thank the many faculty members and students who met with the external reviewers; your input was invaluable for this review. The Faculty of Medicine greatly appreciates the time and effort of the reviewers in providing a written report that is comprehensive and thoughtful.

I will comment on each of the specific areas that you have identified:

A. Undergraduate Program:

The reviewers encouraged increased coordination and collaboration to address duplication in course offerings, to ensure courses complement one another, to develop new offerings (e.g., computational biology/bioinformatics), and to improve integration of the curriculum; they suggested curriculum and content mapping might be helpful in efforts to enhance the program.

Implementation Plan:

In the Immediate Term:

1. The notion that some course offerings may contain duplication in material being covered is unavoidable when moving from introductory courses to advanced courses. Nevertheless, the program will continue to ensure that any duplication of course materials is minimized, as part of their yearly undergraduate course coordinators meeting. In addition, to ensure that duplication does not occur, the Department commits to undergoing a curriculum mapping exercise in collaboration with the Faculty of Arts and Sciences in the coming year.

2. The Department of Immunology recognizes that there is an increased demand from the student body for new offerings, and cross-disciplinary courses. The Associate Chair, Undergraduate Studies, will start a consultation process with Immunology faculty, through Immunology Curriculum meetings, to identify potential gaps in the programs and course offerings as well as opportunity for development. Potential areas that have already been discussed include cancer immunotherapy, Bioinformatics (with Molecular Genetics) and Immunoengineering (with the Institute of Biomaterials and Biomedical Engineering). Any new courses are submitted through the formal governance process of the Faculty of Arts & Science.
3. The co-recruitment of faculty with other Departments and Institutes (e.g. Molecular Genetics, IBBME) will facilitate the development of novel and cross-disciplinary courses.

While the reviewers praised the outstanding research environment for the training of undergraduate and graduate students, they drew attention to the need for more research experiences and opportunities for undergraduate students and made several recommendations around funding, structure and promotion of opportunities, and complement to support this.

Implementation Plan:

In the Immediate Term:

1. The program agrees and recognizes the need and demand from the student body for more research opportunities. This will require new funding streams to support faculty's ability for training students. This could be achieved through a training grant, possibly funded by NSERC or other sources.
2. The Department of Immunology currently offers a Summer Research Program for 2nd- and 3rd-year Immunology students (http://www.immunology.utoronto.ca/immunology-summer-research-program) as well as a Research Project in Immunology (http://www.immunology.utoronto.ca/node/274).
3. Trinity College, in partnership with the Department of Immunology, now offers Research Opportunities abroad funded through the Queen Elizabeth II Scholarship program: http://www.trinity.utoronto.ca/prospective/scholarships-financial-aid/qetwoschoarships.html#

The reviewers recommended that the department enhance undergraduate teaching by supporting faculty development opportunities in new technologies.

Implementation Plan:

In the Immediate Term:

1. The Department has recently developed an online Immunology course offered through the School of Continuing Studies: https://learn.utoronto.ca/interactive-course-search#/profile/3128. We are currently developing another complimentary course. (As a Continuing Studies course, this is separate from the Arts & Science Immunology Program.)
2. The program has recently implemented the TopHat teaching platform, which provides interactive learning experiences, for IMM250H, IMM340H and IMM350H. The goal of this initiative is to improve attendance and participation in tutorials and ultimately improve the learning experience for students.
3. The program has started the production of short videos featuring research labs within the Department of Immunology that will be used for active learning, and "bring the research into classrooms." This has been made possible through the Advancing Teaching and Learning in Arts & Science (ATLAS) Fund, and the participation of our undergraduate students (IMMSA, Immunology Undergraduate Student Association). Three videos have been produced thus far, and more are planned.

The reviewers offered several suggestions to support cohort building and career exploration amongst undergraduate students, who reported feeling like they are not part of the department until their 3rd year.

Implementation Plan:

In the Immediate Term:

1. IMMSA organizes numerous educational, scientific and social events throughout the year that are geared towards networking and meeting other students and faculty. The program will continue to support its initiatives and advertise these events to undergraduate students. The program will also encourage faculty to take part in more of these events.
2. The Department organizes a welcome event (lunch and discussions) for Immunology Specialist students (year 2 to year 4) hosted at the beginning of each academic year.
3. Thanks to the support of an anonymous donor, the Department of Immunology has incepted the Undergraduate Immunology prize, which is given annually to the best student enrolled in its 3rd year courses, IMM340 or IMM341 and IMM350 or IMM351. The prize is complemented by an invitation to the annual winter retreat.
4. The program has suggested exploring an initiative in which undergraduate students "shadow" graduate students within the Department.
5. The short videos described above are also designed to bridge the gap between the Faculty and undergraduate students, and stimulate future interactions.

B. Graduate Program:

1. Time to Completion

The reviewers noted concerns about time to completion and made recommendations to address this.

The Department has been addressing this issue since the last review and more recently, the TTC for PhD students has deceased from a mean of 6.5 years to 6.0 years for the 2016 PhD graduates. The reviewers made some excellent suggestions in this regard, and initiatives coming from Graduate Life Sciences Office under Vice Dean Kaplan have been implemented specifically to reduce TTC.

Implementation Plan:

In the Immediate Term:
With support from the SGS Innovation Fund, and under the leadership of the Vice Dean Graduate Allan Kaplan, the Office of Graduate Life Sciences Education (GLSE) is implementing a new policy requiring the institution of Individual Development Plans (IDPs) for all graduate students. Towards that end, faculty development workshops beginning in September 2017 given by Professor Nana Lee (Biochemistry & Immunology) will be focused on training faculty on the importance of IDPs and providing a standardized template for implementation of IDPs across the FoM.

In addition, as of April 2017, GLSE now provides stipendiary support for students when they need to take a leave of absence (LOA) for physical or mental health reasons. This important initiative was spearheaded by Professor Jen Gommerman (Immunology). One of the factors responsible for longer TTCs is that students could not financially afford to take a LOA when they needed to because of the loss of their stipend when on a LOA; as a result, students when unwell were often in an unproductive state for prolonged periods of time. This new stipendiary program has been very well received by both students and faculty.

2. Uneven Support for Graduate Student Travel

   The reviewers noted uneven support for students to attend conferences.

   As recommended by the reviewers, the Department has committed to providing travel awards to all students in years 3 and above (i.e., post-reclass/qualifying exam) to attend and present at conferences through collaborating with the Advancement Office to establish new funding streams.

   Implementation Plan:

   In the Immediate Term:
   With the support of the Advancement Office, the Department of Immunology has already obtained significant support ($25K from Biolegend) to help in support travel awards for graduate students. Additionally, the Department is currently providing travel awards to the co-presidents of the Immunology Graduate Student Association (IGSA), this serves to acknowledge the contribution of student leaders and to showcase our graduate students at national and international conferences.

3. Core Facilities : Space and Infrastructure

   The reviewers noted the importance of addressing the infrastructure needs of the Department.

   Implementation Plan:

   In the Immediate Term:
   As part of the reappointment of the Professor Zúñiga-Pflücker, the Faculty of Medicine is committed to upgrading and renovating the Immunology laboratory space in the 7th floor of the MSB, which will insure BSL2 compliance. As part of this effort, the issues regarding flooding from the 8th-floor physical plant facilities will be addressed. Renovations to current laboratories on 7th floor of MSB are planned to begin in fall 2017, and will address many of the issues related to infrastructure, including assuring the laboratories are BSL 2+ compliant.

In addition, the reviewers noted the following issues that required attention, as noted in the UTQAP summary document:

1. Quality indicators

   Time to Completion:

   Addressed above. As another indication of the efforts to decrease TTC, when looking at the number of PhD FOE the Department had over the last 2 years, which is 5 in 2016, and 20 (thus far) in 2017, it provides an excellent indication that our efforts to ensure timely completion of the thesis work are beginning to show positive results.

   Recruitment of and funding for international students.

   The reviewers noted the funding difficulties in recruiting international students and recommended these be addressed.

   The Faculty of Medicine now provides to the Department approximately $6000/year for each international student above an established baseline that is enrolled in the graduate department. In addition, the Faculty has established a merit-based scholarship of $5000, which is used to help bridge the gap in the tuition differential for second year international graduate students.

The Faculty will evaluate the impact of these funding initiatives to support international students and respond accordingly.

In addition, for the first time, the Faculty will, as part of our annual graduate recruitment fair, hold a special workshop on November 2, 2017 for those international students already enrolled in the FoM undergraduate life science programs. Representatives of the various FoM graduate departments will meet with the students to answer their questions and address their concerns about graduate training.

Reviewers recommended a tracking system to track student progress.

This will be addressed in the 2017-18 academic year through two initiatives:

The School of Graduate Studies has developed and now has offered for Divisions to utilize a new web based tool (Progress Tracker) to assist graduate students, supervisors, and units with tracking progress of research stream students. The FoM is planning on implementing this for our graduate students. In addition, GLSE will be conducting workshops beginning in September 2017 to train our faculty on IDPs - Independent Development Plans - for our students. The goal to have all of graduate departments institute IDPs for our graduate students over the coming academic year. Additionally, the Department of Immunology will be implementing an additional tracking system that is currently used by the Department of Medical Biophysics, which has proven to be extremely useful in collecting timely information about the on-track progress of their students.

Support for travel – addressed above.

2. Faculty

Reviewers recommended increasing the number of the number of tenure-stream faculty over the next 5-10 years.

Implementation Plan:
The Faculty has committed to providing funds for a new tenure-track position in the Department. This recruitment will occur during 2018-19, upon the return of the Chair from his academic leave. Additionally, the Department of Immunology is currently assisting in the recruitment of new faculty member in the field of Immunoengineering, which is being spearheaded by the Institute of Biomaterials and Biomedical Engineering, under the auspices of a Medicine by Design (CFREF) funded position. This together with potential co-recruitment with the Department of Molecular Genetics for a new faculty member, working in the field of computational immuno-biology, will further increase the number of tenure-stream faculty associated with Immunology.

3. Relationships

The reviewers recommended opportunities for postdocs that address concerns about cohesion.

The postdocs are currently quite engaged with the Department and have opportunities to participate in departmental events, seminars and courses. The Department of Immunology has started to involve postdocs in workshops that are provided by Professor Nana Lee, which are aimed at ensuring access to professional development skills and networking opportunities. The postdocs are now also encouraged to invite guest speakers to the Easton Seminar Series, and will serve as hosts. Further efforts will be put in place, including providing additional support for

postdocs to develop new journal clubs and other career development workshops to address the issues raised by the reviewers.

Sincerely,

L. Trevor Young, MD, PhD, FRCPC
Dean, Faculty of Medicine
Vice Provost, Relations with Health Care Institutions

BACHELOR OF SCIENCE
Joint Decanal Response | Faculty of Arts & Science and Faculty of Medicine

The Faculty of Arts & Science thanks the reviewers for their comments on the undergraduate immunology program. We will continue to work with the Faculty of Medicine to ensure the quality of the program.

L. Trevor Young, MD, PhD, FRCPC
Dean, Faculty of Medicine
Vice Provost, Relations with Health Care Institutions

David Cameron, PhD, FRSC
Dean and Professor of Political Science
Faculty of Arts & Science

5 Executive Summary

The reviewers identified the programs' strengths as a timely and relevant undergraduate program that is intensive and flexible in its course and program offerings, with graduates who are sought after by many national and international graduate programs; PhD graduates are now positioned in research leadership roles across Canada and internationally; and "world class" faculty research, with tenure-and teaching-stream faculty working together effectively in the delivery of the undergraduate program. The reviewers recommended that the following issues be addressed: increasing coordination and collaboration with regard to the undergraduate curriculum; considering curriculum and content mapping to help enhance the program; increasing research experiences and opportunities for undergraduate students; enhancing undergraduate teaching by supporting faculty development opportunities in new technologies; supporting cohort building and career exploration amongst undergraduate students; addressing graduate time to completion; enhancing support for graduate student travel to academic meetings;; and prioritizing efforts to address the asbestos and recurring water damage on the 7th floor in the Medical Sciences Building. The Dean's Administrative Response describes the Faculty, unit and programs' responses to the reviewers' recommendations, including an implementation plan for any changes necessary as a result. The Committee on Academic Policy and Programs (AP&P) concluded that the Decanal response adequately addressed the review recommendations.