

UTQAP Cyclical Review: Final Assessment Report and Implementation Plan

1 Review Summary

Program(s) Reviewed:	<p>Undergraduate programs (<i>offered in association with the Faculty of Arts and Science</i>):</p> <ul style="list-style-type: none"> • Biomedical Toxicology (HBSc): Specialist, Major • Environment & Toxicology (HBSc): Specialist • Pharmacology (HBSc): Specialist, Major • Pharmacology & Biomedical Toxicology (HBSc): Specialist <p>Graduate programs:</p> <ul style="list-style-type: none"> • Pharmacology, MSc, PhD
Unit Reviewed:	Department of Pharmacology & Toxicology
Commissioning Officer:	Dean, Temerty Faculty of Medicine
Reviewers (Name, Affiliation):	<ul style="list-style-type: none"> • Professor Eileen Denovan-Wright, Associate Dean of Research, Faculty of Medicine, Dalhousie University • Professor Lori Isom, Chair, Department of Pharmacology, University of Michigan Medical School
Date of Review Visit:	September 28-29, 2022
Review Report Received by VPAP:	November 17, 2022
Administrative Response(s) Received by VPAP:	September 25, 2023
Date Reported to AP&P:	October 24, 2023

Previous UTQAP Review

Date: September 28-29, 2017

Summary of Findings and Recommendations

Significant Program Strengths

- High calibre students in both the undergraduate and graduate programs
- Commendable new initiatives including the master's field in Applied Clinical Pharmacology, new online courses, and curriculum mapping of the undergraduate programs
- Establishment of the Centre for Collaborative Drug Research (CCDR), which has increased collaboration and improved the Department's leadership role at the Faculty of Medicine

Opportunities for Program Enhancement

- Reviewing the current practice of admitting graduate students directly to a research lab
- Addressing issues with graduate course "breadth modules"
- Developing more opportunities to advance communication skills and explore non-academic careers
- Instituting a formal exit survey for graduating PhD students
- Addressing graduate students' concerns over challenges with locating information on funding opportunities and mental health resources
- Encouraging the voices of graduate students on departmental committees
- Ensuring effective program delivery and positive morale by exhibiting ongoing sensitivity to Department staffing
- Expanding collaborative outreach, including exploring opportunities for medical residents to work in basic science laboratories, and mentoring junior faculty
- Addressing concerns regarding teaching capacity and possible constraints to undergraduate assessment design
- Expanding professional development opportunities such as the Professional Experience Year (PEY) and the Research Abroad program
- Addressing declining enrolments in the Biomedical Toxicology Specialist

Current Review: Documentation and Consultation

Documentation Provided to Reviewers

Confirmation/agreement Letter; terms of reference; self-study report; faculty CVs; course descriptions; schedule; previous review report (2017-18), the joint decanal and Chair's responses, and FAR-IP; Dean's Report 2021; Temerty Faculty of Medicine's Strategic Plan (2018-2023); University of Toronto Towards 2030; University of Toronto Quality Assurance Process.

Consultation Process

Temerty Faculty of Medicine

1. Dean, Temerty Faculty of Medicine and Vice Provost, Relations with Health Care Institutions
2. Vice Dean, Strategy & Operations
3. Delegate for the Vice Dean, Office of Research & Health Science Education
4. Associate Director of Strategic Initiatives, Office of Advancement
5. Chair, Dept. of Biochemistry
6. Chair, Dept. of Medical Biophysics
7. Chair, Dept. of Physiology
8. Director, Donnelly Centre for Cellular & Biomolecular Research
9. Director, Institute of Medical Science

Dept. of Pharmacology & Toxicology

10. Chair
11. Former Chair
12. Associate Chairs
13. Program Directors, Associate Directors, and Coordinators
14. Faculty
15. Graduate Students
16. Postgraduate Fellows
17. Research Associates
18. Administrative Staff

Faculty of Arts & Science

19. Vice Dean, Academic Operations
20. Acting Vice Dean, Undergraduate
21. Acting Associate Dean, Unit-Level Reviews
22. Undergraduate Students

Current Review: Findings and Recommendations

1. Undergraduate Program(s)

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

The reviewers observed the following **strengths**:

- Admissions requirements
 - ▶ The Department applies stringent criteria to its admissions at both the undergraduate and graduate level, nationally recognized for their academic and research excellence

- Curriculum and program delivery
 - ▶ The education mission of the Department of Pharmacology and Toxicology is extensive; curricula in the respective programs are appropriate and reflect the state of the field
 - ▶ “The Biomedical Toxicology [specialist and major] is one of the few existing programs in the country”
 - ▶ Undergraduate students are generally enthusiastic about program content and their opportunities for “real world learning experiences” such as internships and courses in the business of science
- Student engagement, experience and program support services
 - ▶ Significant increase in career/professional development programming for students since the last review
 - ▶ Students find the Department’s peer mentorship and career development programs to be very effective
 - ▶ The Department’s monthly student newsletter has improved communication
 - ▶ The Department has made efforts to address student mental health and wellness issues
- Quality indicators – undergraduate students
 - ▶ Low attrition rate amongst undergraduate students
- Quality indicators – alumni
 - ▶ Approximately 60% of undergraduate alumni are currently enrolled in graduate or professional school (e.g., medicine, pharmacy) and the other 40% are currently employed, highlighting a very low unemployment rate
- Quality indicators – faculty
 - ▶ Students commented on ease of contacting both faculty and TAs

The reviewers identified the following **areas of concern**:

- Admissions requirements
 - ▶ Admissions criteria tends to rely heavily on incoming GPA which is not always the best indicator of success or aptitude
- Curriculum and program delivery
 - ▶ Students reported challenges concerning the availability of life science-oriented internship positions, particularly students impacted by COVID disruptions
 - ▶ Students expressed the need for a more extensive list of internship offerings in the life sciences area
- Assessment of learning
 - ▶ “Department lacks needed resources to perform optimal assessment of student learning outcomes, alumni success, alumni contact information”
 - ▶ Currently no formal program accreditation process outside the external review
- Student engagement, experience and program support services
 - ▶ Students commented that mental health resources were understaffed and had long wait times; faculty do not feel that they have adequate resources to act in the moment

- ▶ Department efforts to address student mental health and wellness issues appear to be limited by institutional infrastructure

The reviewers made the following **recommendations**:

- Admissions requirements
 - ▶ The department should continue to evolve its admissions criteria with respect to EDI
- Curriculum and program delivery
 - ▶ Extra care should be taken with cohorts impacted by missed internship opportunities during COVID to ensure readiness to enter the workforce
- Assessment of learning
 - ▶ Consider critical evaluation processes for courses and programs “to facilitate the effectiveness and appropriateness of learning methods and student achievement”
 - ▶ Reviewers observe that it will be critical for the Department to engage in continuous quality improvements to its education mission under its new Chair
 - ▶ Explore possible collaboration opportunities with other units with concerns to assessment of learning and teaching oversight to provide greater administrative support to associate chairs
- Student engagement, experience and program support services
 - ▶ Improve awareness of available student mental health services at the University

2. Graduate Program(s)

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

The reviewers observed the following **strengths**:

- Overall quality
 - ▶ Reviewers note the quality of the Department’s graduate programs, which are in high demand nationally
- Admissions requirements
 - ▶ The Department applies stringent criteria to its admissions
- Curriculum and program delivery
 - ▶ The education mission of the Department of Pharmacology and Toxicology is extensive; curricula in the respective programs are appropriate and reflect the state of the field
 - ▶ Students are exposed to the broad range of Pharmacology, including clinical pharmacology, through course work and research opportunities
 - ▶ Students report a high level of satisfaction with didactic and experiential learning opportunities
 - ▶ Research internships are highly valued by students, and students have access to international research opportunities through several collaborating institutions
 - ▶ Committee structures to support and mentor program progress appears to be working well
 - ▶ Reviewers commend the Department for their proactive approach to setting and documenting expectations surrounding graduate supervision through its new tool,

- E.L.E.F.A.N.T. (Environment, Limits, Employment, Funding, Academics, Non-Academics, Thesis)
- ▶ Students appreciate the option to complete the MSc part-time
 - Student engagement, experience and program support services
 - ▶ Students responded positively about their opportunities to engage with students from other programs, particularly clinical students
 - ▶ The Pharmacology graduate student society “gives trainees a voice to the faculty and builds community within the Department”
 - ▶ The life science graduate student association connects students with professionals in industry
 - ▶ The Department’s monthly student newsletter improves communication for all students
 - ▶ Significant increase in career/professional development programming for students since the last review to explore the pharmaceutical industry
 - ▶ The Department’s professional development module provides students with essential skills in resume writing, interviewing, and networking
 - ▶ The Department organizes a number of activities to promote community including seminars, social events to facilitate student-faculty interactions, holiday events, active celebration of diverse backgrounds, and the off-site Departmental retreat
 - ▶ Students enjoy opportunities to meet with alumni at career events
 - ▶ The Department has made efforts to address student mental health and wellness issues
 - ▶ Exit interviews with graduate students indicate a high level of overall satisfaction with programs
 - ▶ “Time to completion of the PhD is ~5 years, which is excellent and in line with similar programs in the nation and the US.”
 - Quality indicators – graduate students
 - ▶ Successful applicants are very well prepared “for example, the newly admitted graduate student cohort had a final year GPA of 3.7 and 95% had accrued some level of research experience during their undergraduate programs.”
 - Quality indicators – alumni
 - ▶ Graduates of the course-based MSc program have good opportunities for continued contribution to research and industry
 - ▶ The Department has made efforts to achieve near ubiquitous use of LinkedIn by graduate students and alumni to facilitate current and alumni student connection, and as a data tool to track career paths and maintain alumni relations that will support ongoing analysis of program strengths
 - Quality indicators – faculty
 - ▶ Students responded favourably to the breadth of knowledge and expertise of the faculty, including faculty in affiliate hospital-associated research institutes

The reviewers identified the following **areas of concern**:

- Curriculum and program delivery
 - ▶ Reviewers informed of issues surrounding infrastructure and disruptive renovations with students expressing frustration over a perceived lack of transparency on demolition plans that have contributed to disruptions in thesis research
 - ▶ Lack of a consistent program in lab safety training or a formal course in grant writing and scientific communication
 - ▶ “Paucity of training in research rigor, reproducibility, and ethics”
 - ▶ Concerns voiced over a proposed expansion of graduate student class sizes that could impact students’ ability to form strong connections with faculty
- Accessibility and diversity
 - ▶ Reviewers note Department’s work to improve EDIIA but “because Canada does not collect demographic data, the ability to make transformational progress has been limited...it is not clear which groups of potential students are being missed with respect to access to the Departmental training programs or which groups of potential students experience barriers to program entry”
 - ▶ “Data showing the GPAs of incoming students indicate that socio-economically disadvantaged groups may be excluded from program admission.”
- Assessment of learning
 - ▶ The Department lacks the needed resources to perform optimal assessment of student learning outcomes, alumni success, and alumni contact information
- Student engagement, experience and program support services
 - ▶ Various students expressed difficulties with motivation, lack of belonging, and mental health issues resulting from COVID-19
 - ▶ Poor access to student mental health services with an apparent lack of faculty-led initiatives to improve student mental health
 - ▶ Reviewers noted a lack of formal mechanisms to report sexual (or other) harassment; graduate students and postdoctoral fellows appear to have no knowledge of how to formally report these harassment issues to the University or of official institutional procedures for handling these complaints
 - ▶ Scarcity of work-study positions for graduate students
 - ▶ Trainees working with clinician scientists at dispersed locations experience challenges in forming a sense of belonging, cohesion
- Student funding
 - ▶ Though not unique to the Department, the annual \$35,000 PhD student stipend, from which students must pay tuition, is an area of great frustration and dissatisfaction for students
 - ▶ Reviewers see concerns surrounding adequate graduate student stipend funding as a risk to future enrollments

The reviewers made the following **recommendations**:

- Admissions requirements
 - ▶ Reviewers encourage the Department to consider the pros and cons of lab rotations as opposed to directly admitting students to individual labs
- Accessibility and diversity
 - ▶ Reviewers identified the need for “institutional improvements in the areas of accessibility and diversity.” Departmental leadership, faculty, and trainees should be invited to engage in University-wide initiatives and be provided with the resources to tackle these critical issues at the local level
- Assessment of learning
 - ▶ Consider critical evaluation processes for courses and programs “to facilitate the effectiveness and appropriateness of learning methods and student achievement”
 - ▶ Reviewers observe that it will be critical for the Department to engage in continuous quality improvements to its education mission at both the graduate and undergraduate levels under its new Chair. “It will be essential to assess what students are learning and whether course content remains appropriate to meet the demands of expanding careers of the future”
- Student engagement, experience and program support services
 - ▶ Improve awareness of available student mental health services at the University for both students and faculty. Faculty reported spending “a significant amount of time ‘trying to keep a student alive’... do not feel that they have the resources to be able to act in the moment”
 - ▶ Reviewers encourage the Department to continue its efforts to maintain cohesion and engagement across basic science and clinical sites
 - ▶ Department should continue its practices of engaging alumni and hold career nights
- Student funding
 - ▶ Reviewers recommend the Department develop a long-range strategy to increase student stipend levels in order to provide a living wage appropriate for the City of Toronto

3. Faculty/Research

The reviewers observed the following **strengths**:

- Overall quality
 - ▶ The Department of Pharmacology and Toxicology is recognized nationally for the quality and breadth of its research program. “Pharmacology is an essential discipline for the fields of physiology and medicine and thus the Department is indispensable to the institutional mission.”
 - ▶ Its research and training program in Toxicology “is a national resource and an invaluable asset that requires reinvigoration and reinvestment”
- Research
 - ▶ The Department is known as a top department in this field, and “presents a large variety of exciting research opportunities for trainees, including postdocs, graduate

students, and undergraduate students”

The reviewers identified the following **areas of concern**:

- Overall quality
 - ▶ The Department has one of the few remaining toxicology training programs in the world; “to maintain this level of excellence, new faculty hires with significant financial support are required”
- Research
 - ▶ “Existing national funding models, excessive faculty workload required to maintain funding, increasing student stipend levels, and balancing one’s research program with teaching responsibilities present difficult challenges to faculty with research programs”
 - ▶ The challenge of maintaining a world-class research environment while undergoing space renovations is identified by reviewers as a threat to the Department’s success, with demolition, drilling and resulting vibrations impacting electrophysiological and behavioural research
 - ▶ Reviewers heard concerning comments that applicants to the Department’s graduate program were told by current trainees “to not matriculate at the University of Toronto because of the inability to perform high quality animal research in the current facilities. Another faculty member shared that they were unable to conduct a funded clinical trial because of the inability to receive and store patient samples.”
- Faculty
 - ▶ Reviewers found insufficient opportunities for faculty development
 - ▶ The small size of the core faculty is a threat to future success
 - ▶ Geographic dispersion within the Department presents challenges in fostering a research community
 - ▶ Reviewers describe a “recognized tension between the Pharm/Tox faculty and the Pharmacy faculty with regard to maintaining the identity of their respective disciplines and appropriately valuing each”
 - ▶ Difficult to recruit toxicology faculty that would be competitive in a tenure environment due to difficulties in Canadian grant funding. “The committee noted that three of the four current toxicology faculty have had to close their labs for lack of research funding”
 - ▶ “While the Department has been successful in hiring women faculty, they have not been successful in hiring faculty from other underrepresented groups.”

The reviewers made the following **recommendations**:

- Overall quality
 - ▶ Harness new national initiatives and opportunities to work with industry partners to support the Department
 - ▶ Reviewers urge departmental leadership to conduct “a strategic review of programmatic options, base budget, challenges of faculty workload, and alignment with the overall vision for departmental culture.”

- Research
 - ▶ Develop an institutional strategy for the toxicology research program to strengthen the research of the Department and maintain the program until the funding climate improves
 - ▶ Strengthen the research program through additional hires, including some mid-career faculty, who could immediately mentor graduate students
 - ▶ Consider establishing a CRC Chair in Toxicology
- Faculty
 - ▶ Reviewers recommend that the new Department Chair make a concerted effort to recruit faculty from underrepresented groups in order to strengthen the institutional climate with respect to EDIIA
 - ▶ Develop a more formalized strategy to support, mentor, promote new faculty
 - ▶ Engage in focused faculty searches and expand beyond traditional toxicology to include public health

4. Administration

Note: Issues that are addressed through specific University processes and therefore considered out of scope for UTQAP reviews (e.g., individual Human Resources issues, specific health and safety concerns) are routed to proper University offices to be addressed, and are therefore not included in the Review Summary component of the Final Assessment Report and Implementation Plan.

The reviewers observed the following **strengths**:

- Relationships
 - ▶ Faculty, staff, and students are all proud contributors to the Department who value and support each other
 - ▶ The majority of Department members feel supported by the outgoing and interim Chairs; administrative staff expressed their confidence in the Chair and their administrative leadership
 - ▶ The outgoing Chair has done significant work to “catalyze the culture of research excellence” and faculty and students concur she has “fostered a culture of collaboration and sharing of ideas” for those involved in research and teaching
 - ▶ Faculty are respectful of individual contributions while acknowledging the collective responsibility to meet the demands of teaching, mentoring of trainees and research
 - ▶ Clinical scientists working outside the core department are acknowledged for their important contributions in providing student mentorship, and towards the research goals of the faculty
 - ▶ Student representatives were highly supportive of the department and programs
 - ▶ Departmental administrative staff are excellent, highly collegial and helpful
 - ▶ Reviewers “pleasantly surprised that there are very few interpersonal issues that were reported during the two days of the review process... a strong testament that the group is feeling connected and committed to maintaining their position within Canada as a leader in pharmacology and toxicology teaching and research”

- Organizational and financial structure
 - ▶ The Department Chair and advisory committee appear to have a respectful relationship, able to consider complex issues such as funding, space, and workload allocation to make fair and reasonable decisions
 - ▶ Flexible, hybrid work arrangements have boosted staff productivity and job satisfaction
- International comparators
 - ▶ “The University of Toronto Department of Pharmacology and Toxicology is recognized nationally for the quality of their educational program at the undergraduate and graduate level and the long-term strength in discovery and clinical research”

The reviewers identified the following **areas of concern**:

- Relationships
 - ▶ Reviewers observed different levels of identification and connection to the Department among researchers outside the core faculty
 - ▶ Several postdoctoral fellows and research associates raised concerns over job security for grant-paid employees, difficulties in finding faculty positions, frustration at national funding regulations, and seemed unaware of services available to them that exist centrally at the University
 - ▶ Frustration among faculty and postdoctoral fellows that postdocs could not hold awards and be recognized for their intellectual contributions, denied opportunities to demonstrate ability to secure peer-reviewed funding
- Organizational and financial structure
 - ▶ Administrative staff are challenged by a growing workload that exceeds capacity, lack of buffering for absences and overflow, lack of dedicated alumni relations person, lack of a dedicated assistant to the Department Chair
 - ▶ While there is excitement over the new building for medical research, there is also much anxiety over the effects of the construction during the transition, and a lack of awareness in the Department over the transition management plan
 - ▶ “Reliance on the continued expansion of undergraduate education is unsustainable.”
 - ▶ Several faculty expressed being ‘near the tipping point’ when it came to work-life balance, possibly because they are not aware of central supports in the areas of student and faculty mental health and wellness
- Long-range planning and overall assessment
 - ▶ A challenge faced by the Department is developing a strategic academic plan that balances the educational demands of increasing enrollment and financial reliance on tuition with the size and expertise of the faculty
- International comparators
 - ▶ Faculty acknowledge that while the Department has held top ranking within pharmacology departments in Canada and internationally until this point, it will take continued effort and teamwork to sustain this level of productivity

- ▶ “The Department discussed the challenges of revising the metrics for success to measure impact and to build an equity and inclusive research ecosystem.”

The reviewers made the following **recommendations**:

- Relationships
 - ▶ Continue to nurture departmental relationships both within and outside the core faculty to maintain cohesion with individuals operating in different sites
 - ▶ The new Department Chair should consider how to engage and support postdoctoral fellows and research associates, and be aware of any available services and regulations that support their progress
 - ▶ “In short, while PDFs cannot be nominated principal investigators for TriCouncil funding, they can be included as co-applicants. The status of co-applicant status does not preclude them from receiving salary support from the same grant. We hope that this clarification may be an opportunity for postdoctoral fellow, senior students, research associates and other research participants to be recognized for their roles, help them develop robust CVs, and have increased opportunity to contribute to application submission to TriCouncil”
- Organizational and financial structure
 - ▶ Reviewers counsel a larger administrative team in order to meet the needs of the Department
 - ▶ The new Chair is encouraged to continue the inclusive practice of decision making through the advisory committee, so that faculty and students can make contributions in solving complex issues and ensure effective communication
 - ▶ The new Chair should be supported “to understand the departmental limits to operate financially and organizationally early in their term with the help of their dean and central administrators. This should set reasonable expectations for the new head and the department and build trust and respect within the overall university structures and units.”
 - ▶ The new Chair should consider administrative support allocation, workload reviews, and increase awareness of supports external to the Department to rebalance workload
 - ▶ “Instead [of unsustainable undergraduate expansion], new investments in the research mission are essential to maintain the outstanding scientific reputation of Pharmacology and Toxicology at the University of Toronto.”
- Long-range planning and overall assessment
 - ▶ Consider hiring both faculty with strong research programs and those who focus primarily on teaching to help balance the academic mission and reduce faculty burnout
 - ▶ Evaluate impacts of increasing enrolment strategies on student outcomes and overall satisfaction to avoid diluting the quality of mentorship and training programs
 - ▶ Develop a strategy to increase student stipends to provide a living wage
 - ▶ “Establish partnerships with university administration, partner hospitals, and industry to develop a faculty research bridge funding program to support and

- maintain Departmental research and student mentorship during downturns in national research funding.”
- ▶ Consider expanding the office staff to add a dedicated assistant to the Department Chair, dedicated education coordinators, a dedicated EDIIA position, and a dedicated alumni relations position to reduce administrative burden on faculty
 - ▶ “Work with University leadership to implement a communication plan for the renovation of the current research space. Increased awareness and chance for input from faculty will greatly increase confidence in this important and much needed space renovation.”
 - ▶ Reviewers note the Department will need support from central administration to “meet the educational and research goals within the overall strategic focus of the Temerty Faculty of Medicine and University of Toronto”
 - International comparators
 - ▶ The new Department Chair should consider working with other U of T units to find solutions to the challenges of revising metrics of success, standards for measuring contributions (DORA) and expectations on data sharing, that are global challenges
 - ▶ Reviewers encourage the Department to continue exploring models for robust, internal peer-review and grant facilitation processes to increase grant capture and collective impact of research

2 Administrative Response & Implementation Plan

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TEMERTY FACULTY OF MEDICINE
UNIVERSITY OF TORONTO

Temerty
Medicine

Patricia Houston, MD MEd FRCPC
Interim Dean and Vice Dean, Medical Education

September 25, 2023

Professor Susan McCahan
Vice-Provost, Academic Programs
Division of the Vice-President & Provost
University of Toronto

Dear Susan,

[DEPARTMENT, UNDERGRADUATE & GRADUATE PROGRAMS](#)
[Joint Decanal Cover Letter | Faculty of Arts & Science and Temerty Faculty of Medicine](#)

On behalf of the Temerty Faculty of Medicine at the University of Toronto, we would first like to thank the reviewers—Dr. Eileen Denovan-Wright and Dr. Lori Isom—for their very comprehensive review of the Department of Pharmacology & Toxicology on September 28-29, 2022. We would also like to thank Dr. Ali Salahpour, Chair of the Department, the administrative staff, and all those who contributed to the preparation of the outstanding self-study report. We also wish to thank the many staff, students, and faculty members who met with the external reviewers and provided thoughtful feedback. The reviewers noted the Department *“is recognized nationally for the quality and breadth of its research program. Pharmacology is an essential discipline for the fields of physiology and medicine and thus the department is indispensable to the institutional mission. Graduates from the Pharmacology and Toxicology training programs are in high demand nationally...The Department of Pharmacology and Toxicology is well known to be the top department in this field in the country.”* Further, the reviewers highlighted that the Department’s *“research and training program in Toxicology is a national resource and invaluable asset”*.

The thorough report provided by the reviewers is an invaluable guide for program enhancements and future strategic directions of the Department of Pharmacology & Toxicology. The reviewers identified a number of areas for enhancement including keeping its educational programs current, further growing its toxicology training, increasing awareness of support services for students and trainees, responding to an evolving research infrastructure and changing research funding landscape, increasing its commitments to EDIIA, and addressing workload challenges impacting faculty and staff. Each of the recommendations has been addressed in the Programs’ Responses column in the accompanying table and in Dr. Salahpour’s Chair’s cover letter. We are in full agreement with the responses of Dr. Salahpour and the programs and have provided additional comments addressing each of the recommendations in the Deans’ Responses column of the table.

Overall, the Department of Pharmacology & Toxicology has made excellent progress under the leadership of Drs. Ross and Salahpour and, as noted by the reviewers, the Department *“is highly regarded, has experienced strong leadership from the previous Chair and current interim Chair, has a highly collegial and energetic faculty, and has developed innovative partnerships with industry to provide valuable student internships.”* We congratulate both the past and current Chair on their outstanding leadership. We look forward to continuing to work with Dr. Salahpour and members of the Department of Pharmacology & Toxicology to ensure the continued success and growth of the Department to attain its strategic and operational aspirations.

The next review of the Department of Pharmacology & Toxicology is scheduled in 2027-28. In 2025, we will follow up with the Chair on the implementation of the external reviewers’ recommendations and, later that year, provide you with an interim report on the status of the implementation plan.

Sincerely,



Melanie Woodin, PhD
Dean
Professor, Dept. of Cell & Systems Biology
Faculty of Arts & Science



Patricia Houston, MD, MEd, FRCPC
Interim Dean and Vice Dean, Medical Education
Professor, Dept. of Anesthesiology & Pain Medicine
Temerty Faculty of Medicine

cc: Lisa Robinson – Vice Dean, Strategy & Operations, Temerty Faculty of Medicine
Justin Nodwell – Vice Dean, Research & Health Science Education, Temerty Faculty of Medicine
Poppy Lockwood – Vice Dean, Academic Planning, Faculty of Arts & Science
Bill Ju – Acting Vice Dean, Undergraduate, Faculty of Arts & Science
Gillian Hamilton – Associate Dean, Unit-Level Reviews, Faculty of Arts & Science
Andrea Benoit – Academic Review Officer, Office of the Dean, Faculty of Arts & Science
Anastasia Meletopoulos – Academic Affairs Manager, Office of the Dean, Temerty Faculty of Medicine
Daniella Mallinick – Director, Academic Programs, Planning & Quality Assurance, Office of the Vice Provost, Academic Programs
Ali Salahpour – Chair, Dept. of Pharmacology & Toxicology, Temerty Faculty of Medicine

2022-23 UTQAP Review of the MED Department of Pharmacology and Toxicology - Review Recommendations

Request Prompt <i>verbatim from the request</i>	Rec. #	Recommendations from Review Report <i>verbatim from the review report</i>	Programs' Responses	Deans' Responses
<p>The reviewers observed some challenges related to conducting optimal assessment of departmental student learning outcomes and alumni trajectories. They emphasized that, as the department moves forward under new leadership, it will be critically important to engage in continuous quality improvement of its education mission, noting upcoming opportunities to assess and modernize the undergraduate and graduate education experience.</p>	1	<p>“Moving forward under new leadership, it will be critical for the Department to engage in continuous quality improvement of its education mission. The hiring of a new Departmental Head should provide important opportunities to modernize the graduate and undergraduate education experience. It will be essential to assess what students are learning and whether course content remains appropriate to meet the demands of expanding careers of the future. It will be important to assess -- What do faculty expect every student to know upon graduation? How will these metrics and outcomes be assessed? Are admissions practices, research rotations, breadth module content, and format of graduate and undergraduate classes effective? What is the best way to compensate graduate students? These assessments will be critical as the size of each entering class and the associated demands on the faculty increase.”</p>	<p>Our undergraduate program has been continuously updated over the last several years. New courses addressing the needs of our undergraduates and our education mandates include PCL490 introduced in 2018, and JPM300 and JPM400 introduced in 2019. Our curriculum map for undergraduate learning objectives and core concepts which outlines goals for student learning is reviewed regularly. We continue to engage with our undergraduates to improve the student experience and will update our program accordingly.</p> <p>At the Graduate level, we are presently making important updates both to our thesis-based MSc and PhD programs and our course-based Master's in Applied Clinical Pharmacology (ACP) program.</p> <p>The ACP program is currently transitioning into a Professional Master's to better serve students preparing to enter the workforce. Preparations are underway for the governance portion of the process so the new program will be ready for September 2024.</p> <p>The thesis-based MSc and PhD cohort has doubled in size over the last 8-10 years (from an incoming class size of 20-25 to 48-55). Managing such a large cohort has created challenges within our current curricular framework. Concurrently, the expansion of our cross-appointed faculty is enabling the Department to cover a greater breadth of research areas. As a result, we are presently undertaking a major restructuring of these programs. Similar to what is being done in some of our cognate departments in TFoM, we are moving towards mostly 0.25 FTE modular course offerings. The current working proposal is to have a 0.5 FTE mandatory Basics of Pharmacology course for all incoming thesis-based students and then allow students to choose from a menu of 0.25 FTE modules what best suits their educational</p>	<p>The Department has used curricular mapping and engagement of students to continuously update undergraduate course offerings and improve the student experience.</p> <p>The Department is currently updating its thesis-based MSc and PhD programs and the course-based Master's in ACP program. The ACP program is undergoing transition to a Professional Master's program to better meet the needs of students.</p> <p>In the face of major expansion of thesis-based MSc and PhD cohorts, the Department is restructuring course delivery, moving toward 0.25 FTE modular course offerings. This will allow for the integration of mandatory course offerings with education tailored to the needs of individual students.</p>

			and training needs. A working group is currently finalizing the design of the new thesis-based curriculum with the intent to have it in place for September 2024.	
2	<p>“The department should consider processes for critical evaluation of courses and programs to facilitate the effectiveness and appropriateness of learning methods and student achievement. The appointment of associate chairs for both undergraduate and graduate education have strengthened the education mission, enhanced programmatic strategy, and reduced the administrative burden on the Department head. However, it is clear that these important positions are in need of greater administrative support. The department should ensure that they are working on such strategies in collaboration with other units involved in teaching oversight.”</p>	<p>Over the last 3-5 years, the Department has hired additional administrative staff to support the educational mission at the undergraduate and graduate levels. The two most recent education-related administrative hires were brought on in August 2022 and December 2022. Both hires have been able to further enhance the Department’s mission and alleviate some of the administrative burden borne by our Associate Chairs of Undergraduate and Graduate Education. Moving forward, we will continue to consult with the Department Leadership, including the Associate Chairs of Undergraduate and Graduate Education, to ensure that they have the necessary administrative support to fully execute their mandates and missions.</p>	<p>The Department recognized the need to enhance support of the Associate Chairs of Undergraduate and Graduate Education and accordingly hired two new education-focused staff members. Through iterative consultation, the Department will ensure that administrative support of education portfolios is appropriate to meet their needs.</p>	
3	<p>“The department should be encouraged to continue practices of engaging alumni and hold career nights.”</p>	<p>We will continue to hold career mentor nights each year as we have done for the last 10 years as they are greatly appreciated by our students, trainees, and alumni.</p> <p>Last year, the Department hired a work-study student to help update our alumni database. This was done in collaboration with the Pharmacology Graduate Students’ Association as they are also very keen to engage with alumni. This list includes close to 200 alumni with whom we have connected and who have indicated their willingness to participate in outreach events and activities.</p> <p>To further foster our relationships with alumni, the incoming Chair and several faculty met with the TFoM advancement team and, including Cody Copeman Hubert, the Director of Alumni Relations & Special Events. We discussed the importance of alumni relations, best practices concerning master databases and how best to engage with alumni. The</p>	<p>The Department will continue to hold career mentor nights, connecting learners and alumni. With the help of a work-study student and the Pharmacology Graduate Students’ Association, the Department recently updated its alumni database. The Chair and members of the faculty are working with the Director of Alumni Relations & Special Events to optimize alumni engagement.</p>	

			<p>first meeting was very constructive and over the next 6 months additional meetings will be held to delve deeper into best practices and strategies for engaging the Department’s alumni.</p>	
<p>The reviewers observed the limited availability of life science-oriented industry internship opportunities for undergraduate students.</p>	<p>4</p>	<p>“The internship experiences provided to students by the Department are extremely valuable and highly regarded. Students asked for a more extensive list of internship offerings in the life sciences area. They commented that most of the current offerings are in engineering.”</p>	<p>This information is inaccurate, and we are concerned that this is based on student misperception. The Professional Experience Year (PEY) has afforded students the opportunity to participate in internships since 2007. As part of the PEY program, run through the Faculty of Applied Science & Engineering, we placed 8-20 students annually in Pharmacology-specific opportunities (i.e., Sanofi, MIT, Applied Clinical Research, etc.). The Covid-19 pandemic did affect these opportunities and placements were reduced. In 2021-22 this program evolved into the Arts & Science Internship Program (ASIP), where students enter the program in Year 2, rather than in Year 3 (as was previously done with the PEY program). In 2022, there were 20 students enrolled in the first ASIP cohort, and this year we expect 23 students to be enrolled. Currently there are over 100 positions of 12 to 16-month durations available to the Department’s students that are within their discipline.</p> <p>There have been growing pains with the transition to ASIP, and although there were numerous communications to students, many didn’t realize the opportunity required submission of an application in the summer between first and second year. Additionally, workload issues were a concern and changes have been made to the program to address this. The professional development modules are also now mandatory.</p> <p>We expect that as ASIP becomes the norm and issues resolve, enrolment and participation in Pharmacology-focused opportunities will increase.</p>	<p>The Office of Experiential Learning & Outreach Support, which delivers the ASIP (launched in Fall 2021), is engaging closely with the Dept. of Pharmacology & Toxicology leadership team to ensure ASIP meets the unique needs of the Pharmacology & Toxicology students. There is a dedicated coordinator focused on expanding existing and building new life science-related internship opportunities with industry, government, and non-for-profit partners. As already mentioned, over 100 relevant opportunities were posted for Pharmacology & Toxicology students this past recruitment cycle on our co-op job board. We have also engaged with the unit and elicited feedback from students to ensure that the workload of the mandatory professional development programming, a requirement of ASIP, is manageable and has a positive impact on students’ career development and success. We look forward to continuing to grow work term opportunities in response to the growing student demand.</p>

<p>The reviewers observed that current undergraduate and graduate admissions requirements rely heavily on GPA, and recommended that the department consider approaches to evolving admissions criteria, particularly with an eye to reducing barriers for equity deserving groups.</p>	5	<p>“The university is working collectively to understand the barriers for equity deserving groups who may be disadvantaged by GPA as the main metric. The department should continue to evolve its admissions criteria to respect diversity within the constraints of the resources available.”</p>	<p>Enrollment into the Life Sciences at the University is managed by Faculty of Arts & Science (A&S). Currently the Department does not have access to demographic/EDI/IIA information for students applying to our second-year programs. As a result, we are not able to gather any information from the applicant pool other than grades from first-year pre-requisite courses. Further supplemental application documents would require coordinated efforts across the Basic Medical Sciences and would require significant administrative resources. We are, however, open to discussing at the Faculty level ways of incorporating diversity criteria into the enrolment process.</p> <p>The Department participates in high school outreach through A&S programs, and Dr. Arnot, Associate Chair of Undergraduate Education, has provided many talks to high school partners. The Department also offers a Pharmacology Youth Summer Program module, and there are spaces and studentships for equity seeking groups. We hope that reaching out to diverse populations of secondary school students helps draw a wide range of students interested in Pharmacology and Toxicology to the Department.</p>	<p>Admissions criteria for undergraduate students in Life Science programs at U of T are managed by the A&S. A&S remains committed to equity, diversity and inclusivity within all of its programs and work with partner units such as Pharmacology & Toxicology to examine admission criteria in this light. Under the leadership of Dr. Arnot, the Department engages in outreach programs for high-school students, including targeted outreach to students from equity-deserving groups through the Pharmacology Youth Summer Program module. Through TFoM’s Office of Access & Outreach the Community of Support Program provides intensive mentorship for undergraduate students from equity-deserving communities, breaking down barriers and empowering students to pursue admission to graduate programs.</p>
<p>The reviewers observed that graduate students are directly admitted to individual labs, while lab rotations are used by many North American programs. They recommended exploring the potential advantages and disadvantages of implementing a rotating lab system for graduate students.</p>	6	<p>“The department is encouraged to consider the pros and cons of [lab] rotation within the context of their mission and within the constraint of the funding model.”</p>	<p>This is an important suggestion and we have had conversations around rotations for the last 5 years or so. What makes rotations especially challenging for the Department is the breadth of topics covered by the various research labs. While some labs are conducting molecular biology research (e.g., gene editing), there are other labs working in the clinical realm where students are directly interacting with patients. The skillsets required and the profile of a successful candidate for each of these domains of research are quite different and make it hard to have a unique cohort of admitted students that would rotate in labs as diverse as those described above.</p> <p>Nevertheless, the conversation around rotations is still important and one option that we have discussed, which requires further reflection, is the idea of having some labs</p>	<p>The Department is actively exploring options to implement rotations for incoming graduate students, including an option for labs to electively participate. The Graduate Education Committee will determine next steps within the next 12 to 18 months.</p>

			<p>voluntarily sign up for rotations. This could be thematic (e.g., labs working in the molecular sciences) and comprise one cohort of rotations. The details and mechanics of this are not simple and we are still considering and reflecting on whether this (i) could be implemented in our Department and (ii) would improve the student experience.</p> <p>The timeline for further discussion concerning rotations is 12-18 months, as the Graduate Education Committee is currently working hard to update the ACP and the thesis-based MSc and PhD programs (see #1 above).</p>	
The reviewers observed the lack of a consistent program in lab safety training, and of a formal course in grant writing and scientific communication.	-	“Issues that may be more specific to Departmental graduate students include:[...]”		
	7	<ul style="list-style-type: none"> Lack of a consistent program in lab safety training [...] 	<p>This comment is puzzling. ALL new members joining research labs must undergo rigorous training including biosafety, WHMIS, animal training (where appropriate) and clinical training (where appropriate). Without such training, individuals cannot undertake their research projects. Going forward, we will make sure there is additional departmental communication to ensure that ALL relevant safety training is undertaken by all trainees.</p>	<p>As part of the on-boarding process new members of research laboratories are required to complete formalized training in lab safety. This applies both to campus-based researchers and researchers based at TAHSN research institutes.</p>
	8	<ul style="list-style-type: none"> Lack of a formal course in grant writing and scientific communication” 	<p>As mentioned above, we will be moving to a 0.25 FTE modular courses for our thesis-based programs. Two specific modules being considered right now include Grant Writing and Science Communication. Further, we are editing the format of our PhD qualifying exams, which will be held before the end of the second year of the PhD program, so that candidates will now be required to write a full CIHR Project Grant for their PhD project as part of this process. We believe these measures will ensure that we provide adequate training around communication and grant writing for all our graduate students.</p> <p>In our current PCL1002Y: Graduate Pharmacology course there is a formal grant writing assignment which is assigned to ALL graduate students in the Department.</p>	<p>As the Department adopts the modular course model for its thesis-based programs, consideration is being given to developing specific modules addressing grant writing and scientific communication. In addition, PhD students will be required to write a CIHR Project Grant proposal as part of their formal training.</p>

<p>The reviewers made a number of recommendations related to supporting and retaining faculty:</p> <ul style="list-style-type: none"> • More clearly defining and communicating graduate faculty roles and responsibilities • Enhancing faculty development opportunities • Examining the size of core faculty relative to the department's plans and priorities 	9	<p>“An important goal will be for the faculty to re-assess Departmental graduate faculty membership (core vs. cross-appointed affiliate faculty). They must reach agreement on the required duties of faculty members in terms of teaching, administration, and service – especially regarding balancing the quality of students’ educational experience with growing class sizes.”</p>	<p>The incoming Chair has made it a priority to meaningfully engage with all cross-appointed faculty to further strengthen ties. The goal is to better support cross-appointed faculty and to have them contribute more meaningfully to the Department’s missions. One potential way is to ask cross-appointed faculty to offer 0.25 FTE modules in their area of expertise. This would be invaluable to their own graduate students, but also other students in the Department who would benefit from knowledge in those specific fields.</p>	<p>The move to 0.25 FTE modular courses provides an important opportunity to increase engagement of cross-appointed faculty in the educational activities of the Department. Cross-appointed faculty can develop and offer 0.25 FTE modules directly aligned with their area of expertise.</p>
<ul style="list-style-type: none"> • Prioritizing increasing the diversity of the faculty complement when opportunities permit • Exploring ways to reduce the administrative burden on faculty 	10	<p>“The review committee found insufficient opportunities for faculty development.”</p>	<p>The Department will make additional efforts to properly communicate and broadcast all available faculty development opportunities. Every year, we inform faculty of leadership courses (such as NEAL), educational courses through CTSI, and other opportunities. We will strive to be even more deliberate about these communications.</p> <p>The incoming Chair has added additional Associate Chair positions (General, Basic Research and Clinical Research) that are open to interested faculty. These are important new leadership positions that will allow more faculty to gain leadership experience and see first-hand whether these kinds of positions are of interest to them when considering their career trajectories. These positions have term limits to allow other interested individuals the opportunity to serve.</p>	<p>The Department will employ a multi-pronged approach to provide opportunities for faculty development. The Department will be more deliberate about communicating opportunities for leadership training through existing programs such as the New & Emerging Academic Leaders (NEAL) Program. To increase faculty development opportunities for faculty members from historically excluded and underserved communities, the TFoM Dean, co-sponsors members of those communities to participate in NEAL.</p> <p>Dr. Salahpour created several new Associate Chair positions, allowing more members of the Department to gain leadership experience first-hand.</p>
	11	<p>“The Department houses one of the few remaining toxicology training programs in the world, however, to maintain this level of excellence, new faculty hires with significant financial support are required.”</p>	<p>This is a very important topic. Toxicology is a key focus for the new incoming Chair. As a first step in tackling how to best strengthen Toxicology in the Department and at UofT at large, we will conduct an environmental scan of Toxicology at UofT from September through December 2023. To help with this, the Department has hired Dr. Gloria Rachamin (30% CLTA appointment). Dr. Rachamin has extensive expertise in the field of Toxicology and experience in the government sector. Dr. Rachamin will be working with the Chair and Director, Collaborative Specialization in Toxicology to engage with various stakeholders at UofT and to see how best to strengthen Toxicology. We recognize that there is a huge academic,</p>	<p>A current focus of Dr. Salahpour is strengthening Toxicology in the Department and across the university. An environmental scan will be conducted in 2023, led by Dr. Gloria Racahmin, Dr. Salahpour, and the Director, Collaborative Specialization in Toxicology. This environmental scan will help inform next steps and priorities.</p> <p>To address financial barriers to enhancing the Toxicology program, the Department will identify areas of synergy with other stakeholders and build around those areas. The Department is also considering a dedicated focus for</p>

		<p>educational and societal need for Toxicology but there are considerable barriers (mostly around funding) when it comes to this field.</p> <p>One potential way forward is to strengthen the ties between all Toxicology stakeholders and build around that. Other ideas might include dedicated fundraising efforts and programs (e.g., a professional Master's in Toxicology) to again enhance and strengthen Toxicology. Our current opinion is that Toxicology cannot be solely strengthened in our Department and we need to find additional stakeholders to increase the critical mass needed to have vigorous and world class Toxicology research and education at UofT.</p> <p>The completion of the environmental scan will allow us to identify what needs to be done and make plans for moving forward.</p>	<p>advancement efforts and developing new curricular programs such as a Professional Master's in Toxicology.</p>
12	<p>"Developing an institutional strategy to maintain this toxicology research program until the funding climate improves would significantly add to the research strength of the Department and place the university in [in] an optimal position to lead the country."</p>	<p>See #11 above. In the US, the NIEHS is solely focused on Environment & Toxicology; unfortunately, there is no Canadian equivalent. Major funding for Toxicology research comes from the Pharmacology & Toxicology Panel of CIHR, which is only one funding panel. As a result, many strong toxicologists have a hard time maintaining continuous CIHR funding. This is why we need to properly scan the UofT Toxicology ecosystem and identify how best we can strengthen Toxicology research and by proxy Toxicology education.</p>	<p>Please see response above highlighting departmental priorities to advance Toxicology.</p>
13	<p>"While the Department has been successful in hiring women faculty, they have not been successful in hiring faculty from other underrepresented groups. This critical initiative will require a concerted effort by the new Department head with university leadership in terms of financial resources, targeting recruitments to specific underrepresented groups, and strengthening of the institutional climate</p>	<p>Indeed, the gender balance in our Department is very good, but beyond that the Department can be viewed as mostly homogenous when it comes to ethnicity. Culturally, however, the Department is still quite diverse with individuals from different cultural backgrounds (Latin America, French Canada and the Middle East). The Department recognizes the importance and value of having a broad range of perspectives and will continue to make efforts to hire individuals from diverse backgrounds into any new open positions.</p>	<p>The Department recognizes the need for a diverse pool of faculty members to strengthen the mission and work of the Department. In 2021, the TFoM developed guidelines for achieving Excellence through Equity in Appointments of Faculty & Academic Administrators. A key member of the working group who developed the guidelines was Dr. Ruth Ross, former Chair, Dept. of Pharmacology & Toxicology. The recommendations are currently being followed for Decanal searches for academic administrators and TFoM can work more closely with the Department to facilitate implementing</p>

		with respect to EDIIA. The Department must also develop a more formalized strategy to support, mentor, and promote new faculty once they arrive to successfully see them through to tenure and promotion.”	We will also implement a more formal mentorship program in the short term to help the promotion of junior faculty through the ranks. The mentorship program will be implemented by end of 2023.	similar practices for faculty hiring. These efforts can be complemented by the University’s targeted focus on hiring Black and Indigenous faculty members. As described above, the Dean, Temerty Faculty of Medicine, is co-sponsoring faculty from under-represented communities to participate in the NEAL leadership development program.
14		“The appointment of associate chairs for both undergraduate and graduate education have strengthened the education mission, enhanced programmatic strategy, and reduced the administrative burden on the Department head. However, it is clear that these important positions are in need of greater administrative support. The department should ensure that they are working on such strategies in collaboration with other units involved in teaching oversight.”	See #2 above.	Please see response to #2 above.
15		“The anticipated hiring of additional Departmental faculty by the incoming Head will translate into more graduate students and the need for more programmatic administrative assistance. This should be a focus of the new Department head.”	This is indeed being taken into consideration. The incoming Chair will be reviewing all the administrative positions to ensure that they meet the needs of the Department and align with the duties undertaken by the administrative team. This review will be completed by December 2023.	A review of all existing administrative positions is currently underway and will be completed by the end of the calendar year. The goal of the review is to ensure that the administrative team is fully supported to meet the needs of the Department.
16		“Several faculty members expressed that the financial benefit of growth in undergraduate teaching must be balanced with recruitment and appropriate administrative support to maintain large classes and continued quality of education. It was clear in every conversation that the current core faculty have little reserve capacity to continue to respond to increased growth in this domain. The new head should	We hired a new administrator in August of 2022 (Kyla Iannuzzi) with one of the specific duties being to help manage large undergraduate courses. In 2022-23 Kyla helped manage PCL200, PCL218 and PCL102. In 2023-24 she will expand her duties to support PCL200 and PCL302 in the fall and PCL218 and PCL102 in the winter term. All department faculty who have worked with Kyla have much praise for her and have stated that their burden has been much reduced thanks to her assistance. As such we feel that the Department has made considerable progress in this area.	In order to meet the needs of the growing undergraduate education program, the Department recently hired an administrator whose focus rests solely in this area. In 2023-24, the Department also plans to hire three new faculty members with one position designated for teaching-stream faculty. Recruitment of a dedicated teaching-stream faculty member will help alleviate the teaching load of tenure-stream faculty.

		consider administrative support allocation and workload review within the department to look for any efficiencies.”	The Department plans to recruit three new faculty in 2023-24. One of the positions will be for a teaching-stream faculty member. Hiring such an individual should further reduce the burden on tenure-stream faculty and hopefully increase their time for research-related activities.	
The reviewers observed a number of challenges related to, or arising from, the geographic dispersion of the department, including access to and awareness of available divisional/institutional supports and services; potential barriers to a sense of departmental cohesion and belonging; and difficulties with creating and fostering a research community. They emphasized that these issues will require ongoing attention.	17	“This inevitable challenge of geographic dispersion will need ongoing attention.”	The Department and incoming Chair will make efforts to engage the broader faculty. The incoming Chair has already met with colleagues at various institutes and will explore ways to bring people together as often as possible without it becoming a nuisance. These efforts will be made in 2023/2024/2025 and based on how each event goes, improvements will be made until the Department finds a formula that works.	Given the distributed nature of research activities across TFoM, a challenge of many departments is engagement of stakeholders across TFoM’s university campus, the broader university, and TAHSN-affiliated research institutes. The next 2 years will see enhanced focus on bringing Department members together through regularly scheduled events.
	18	“The clinician scientists working outside of the core department were recognized by core faculty as important contributors to the research goals of the faculty and provided student mentorship. As is often observed, different researchers outside of the core faculty within the department may have different levels of identification and connection to the department. These relationships will always need to be nurtured to maintain cohesion with individuals operating in different sites.”	As mentioned in #17 above, engaging with the broader faculty is a priority item for the incoming chair in the immediate to medium terms.	Please see response to #17 above. Recently, Dr. Antonio Strafella was appointed Director, Clinical Research & Translation, Office of the Vice Dean, Research & Health Science Education. He will work closely with the research leads of clinical departments to provide more opportunities for synergy with clinician-scientists across TFoM.
	19	“This group [of postdoctoral fellows and research associates] seemed to be unaware of services for them that exist centrally at the University of Toronto. This group’s frustration is not unique to this department or university. The reviewers recommend that the new head consider how to engage this group and support their needs.”	We have formally named a faculty member as the Department Lead for Postdoctoral Fellows. Furthermore, this is a priority item for Vice Dean, Research & Health Science Education as well. With the support and engagement of the Vice Dean’s office and the newly appointed Department Lead for Postdoctoral Fellows, we hope to make important progress in this area.	To address the needs of postdoctoral fellows, the Department recently appointed a Departmental Lead for Postdoctoral Fellows. In the Office of the Vice Dean, Research & Health Science Education, Dr. Karen Maxwell has recently assumed oversight of initiatives for postdoctoral fellows.

<p>The reviewers highlighted connected concerns around student morale and mental health, particularly related to the COVID-19 pandemic, again observing limited faculty and student awareness of how to access available University services. They recommended that leadership explore approaches to enhancing faculty and student awareness of divisional and institutional supports for student wellness, as well as mechanisms for reporting issues such as harassment (in preparing your response, you may wish to consult with the Office of the Vice-Provost, Students).</p>	20	<p>“Awareness of student mental health services is also needed. It is likely, based on feedback, that the central supports for student wellness may also need improvement, but this is outside of the control of the Department of Pharmacology and Toxicology.”</p>	<p>We now have a yellow button on the top right-hand side of our website that provides links to health and wellness resources (https://pharmtox.utoronto.ca). Below we also enumerate other programs around mental health that are currently offered and ongoing, but as mentioned above, we will continue to expand our communication around these, so all students, trainees and faculty are properly informed.</p> <p>The Department provides a best practices manual to all undergraduate faculty on how to respond to students in need or crisis. This document is updated annually and shared before the start of each academic year.</p> <p>The Department also has mental health-related videos, including "You are not alone," which are shared in undergraduate courses and with graduate students in the link below:</p> <p>Full video: https://play.library.utoronto.ca/9a6c5d3e5ce8d148ea6856d2139e04f9</p> <p>For undergraduates (same as full video, but without the graduate story): https://play.library.utoronto.ca/d0f26faacfc418b21bc123255747da2d</p> <p>For graduate students (same as full video, but without the Undergraduate story): https://play.library.utoronto.ca/fea00e354613dc3c5d049bfca9b48c51</p> <p>Most faculty members include links to MY SSP, now TELUS Help, in their email signatures. This information is also included in all course syllabi.</p> <p>Mental health and exam stress information is included in the regular communications from the Department via our undergraduate Quercus site.</p>	<p>The Department has undertaken important efforts to connect students experiencing mental health challenges to available resources, in a timely manner. To facilitate timely identification and access, the Department has ensured that multiple pathways are available to students, including through the yellow button, embedded counselors in TFoM, and through the Associate Chair, Graduate Education. In addition, the Department provides training to faculty to allow them to better support students in need or experiencing crisis. The Department recognizes the need to enhance communication to learners, staff and faculty about available pathways and resources, and to enhance training for faculty and staff on trauma-informed approaches to addressing student mental health concerns. In an effort to enhance the Department’s approach to addressing mental health and wellbeing of students, the Chair (Dr. Salahpour) will meet with Ms. Christina Bartha, the new Senior Executive Director, Student Mental Health Systems, Policy & Strategy from the Office of the Vice Provost, Students in October 2023.</p>
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21	<p>“Graduate students and postdoctoral fellows appeared to have no information on how to formally report sexual (or other) harassment issues to the University. They were not aware of official institutional procedures for handling these complaints.”</p>	<p>We will make this information available to all trainees through email communications and our website in the immediate term.</p>	<p>Through email communication and the departmental website, the Department will share information with trainees about reporting of sexual violence and harassment incidents to the University. The Department can also consider working with the Sexual Violence Prevention & Support Centre, and the Anti-Racism & Cultural Diversity Office to facilitate additional education for learners, staff and faculty members, including through workshops.</p>
22	<p>“The University of Toronto has central offices to support students and faculty for mental health and wellness and central units dedicated to supporting trainees that could be better utilized by faculty so that faculty can focus on their core responsibilities and be confident that students were being supported.</p>	<p>See #20 above. The Departmental website yellow button links to resources for faculty and staff as well as students.</p>	<p>Please see response to #20.</p>

		The new head might consider increasing awareness of support units external to the department as a means to rebalance workload.”		
The reviewers noted faculty and student concerns around disruptions related to demolition and renovation plans, and recommended working with University leadership to develop and implement a communication plan for the renovation of the current research space.	23	<p>“Work with university leadership to implement a communication plan for the renovation of the current research space. Increased awareness and chance for input from faculty will greatly increase confidence in this important and much needed space renovation. The building will be essential to maintain current research programs, retain current faculty, recruit new faculty and students, and maintain Temerty Medicine’s outstanding academic/research reputation.”</p>	<p>This is a challenging area with many moving parts and, as mentioned, is mostly out of the Department’s purview.</p> <p>Having said that, the incoming Chair is in regular communication with the Dean and Vice Deans and conveys all information to faculty who can then inform their trainees.</p> <p>Where needed, the Chair has held and will hold a town hall to inform all trainees, staff and faculty with regards to an upcoming move.</p> <p>As recommended, every effort will be made to inform Department members concerning renovations/construction.</p>	The TFoM Dean’s Steering Committee – Temerty Building Project meets regularly and has identified a robust communication plan as an area for priority attention. This will be facilitated by the TFoM Office of Communications and will involve frequent engagement with learners, staff and faculty members of departments directly impacted by the construction projects.
The reviewers recommended pursuing partnerships to support and maintain Departmental research and student mentorships during downturns in national research funding.	24	<p>“Establish partnerships with university administration, partner hospitals, and industry to develop a faculty research bridge funding program to support and maintain Departmental research and student mentorship during downturns in national research funding.”</p>	<p>The Department has an internal bridge funding program which has been in place for several years and works well.</p> <p>There is additional bridge funding available from the Office of the Vice Dean, Research & Health Science Education for grants that score high on panels. To qualify for this bridge funding, grants should have also undergone internal peer review, a process which is already in place and practiced in the Department.</p> <p>Partnering with hospitals might be difficult as each unit usually supports their own researchers.</p> <p>The Department is unaware of any industry-related bridge funding programs but will investigate to see if this is possible.</p>	Bridge funding is available both through the Department and through the Office of the Vice Dean, Research & Health Science Education. In addition, the Office of the Vice Dean, Research & Health Science Education has recently undertaken a comprehensive mapping exercise to identify sources of funding for trainees, including awards, that are currently under-utilized. The Office of the Vice Dean, Research & Health Science Education is exploring opportunities for more robust, formalized internal peer review of grants before they are submitted. Such a program currently exists at one of the TAHSN Research Institutes, and the rigorous pre-submission peer review has led to sustained funding success rates well above the national average.

<p>The reviewers recommended that the department develop a strategic plan that aligns available resources, enrolment plans and the quality of student academic experience. They observed that incoming departmental leadership should be supported as needed to understand the unit's financial and organizational context.</p>	25	<p>“Development of a strategic academic plan that balances the educational demands of increasing enrollment and financial reliance on tuition income with the size and expertise of the faculty. In addition to hiring new faculty with strong research programs, the Department may consider hiring faculty who focus primarily on teaching and administration rather than research. This strategy would help to balance the fulfillment of the academic mission with faculty work/life integration and reduce faculty burnout (which is a major issue).”</p>	<p>On June 7, 2023, the Department held an internal strategic planning meeting where the incoming Chair informed faculty members of budgetary issues and hiring opportunities. During this meeting, the possibility of hiring three new faculty members in 2023-24 was presented and faculty vigorously discussed which areas to target. The consensus was that the three positions should be the following:</p> <ol style="list-style-type: none"> 1. Teaching Stream with potential focus on Toxicology 2. Research/Tenure Stream with focus on Clinical Pharmacology/Dry lab 3. Researcher in AI/Automation in Drug Discovery or Toxicology hired in partnership with the Acceleration Consortium <p>For the latter, the Chair is meeting with the Director of the Acceleration Consortium in August to explore this potential partnership.</p> <p>There are two additional positions to be filled in the next 3-5 years which will likewise be brought to the faculty to identify which areas to engage.</p>	<p>To enhance educational activities, the Department will hire a teaching-stream faculty member with a possible focus on Toxicology. To enhance understanding of financial matters in the context of the Faculty and U of T, last year TFoM struck a Finance Committee with broad representation from across the Faculty. The Committee meets regularly to review processes and data, bringing in financial leaders from central U of T to help educate the committee and address questions and concerns. Dr. Ruth Ross, former Chair, Department of Pharmacology & Toxicology, was a member of the inaugural Finance Committee. In addition, the TFoM Offices of the CAO and Strategy & Operations are currently working together to develop resources that will be useful for the on-boarding of new Chairs and provide guidance for existing Chairs and Business Officers on a number of important topics, including financial planning and management.</p> <p>Planning for the undergraduate program will take place in consultation with the A&S Vice-Dean, Undergraduate.</p>
	26	<p>“The new Departmental head should be urged to conduct a strategic review of programmatic options, base budget, challenges of faculty workload, and alignment with the overall vision for departmental culture.”</p>	<p>This is a great comment. The incoming Chair has identified some budgetary stress points. Although the Department is excellent at generating revenue from undergraduate and graduate education, the overall budget is under considerable strain and it is unclear to the incoming Chair whether the base budget allocated to the Department is in line with what is being offered to cognate units, such as the Depts. of Biochemistry and Physiology that run similar-sized undergraduate and graduate programs. The incoming Chair is in conversation with the Dean and the CAO to gain a better understanding of how based budgets are allocated and to critically evaluate whether the Department's base budget might need adjusting given that the Department and its educational programs have essentially doubled in size over the last 6-8 years.</p>	<p>The Department Chair continues to work with the Dean and the CAO to review in detail base budget allocation. As noted above, investments have been made in administrative and faculty hiring to support the Department's expanded educational activities.</p>

	27	<p>“Evaluate the impacts of increasing enrollment strategies on student outcomes and satisfaction. The Department should make every effort to avoid diluting the effectiveness of their current mentorship and training programs. Increasing enrollments will require increasing faculty ranks.”</p>	<p>This is a very important point. Over the last 5-7 years the Department has made considerable efforts to maintain a balance between large and small courses while offering a great experience to undergraduate students. This is reflected in the course evaluations and various comments gathered around the undergraduate program. This is, however, an area that requires continuous evaluation to ensure that our enrollment or class sizes do not dilute the excellent educational programs and student experience that we have offered thus far. As mentioned above, the Department plans to hire three new faculty members in 2023-24 which should be able to contribute towards maintaining a good faculty-student ratio.</p>	<p>To meet the needs of students and maintain an excellent learner experience, the Department will hire three new faculty members, one of whom will be teaching stream.</p> <p>In addition to faculty hiring to address recent growth, the two Divisions will engage in consideration of interdivisional teaching to constrain further enrollment growth through effective enrollment controls and within the context of our joint academic priorities. Doing so will ensure faculty-student ratios remain stable.</p>
	28	<p>“A new head of department should be supported to understand the departmental limits to operate financially and organizationally early in their term with the help of their dean and central administrators. This should set reasonable expectations for the new head and the department and build trust and respect within the overall university structures and units.”</p>	<p>This is a great comment. The incoming Chair only has access to their own budgetary items and no other information allowing for an overall view or contextualisation of the Department budget within the larger TFoM. As mentioned in #26 above, the Chair is in discussions with the Dean and the CAO to better understand how the Department’s budget compares to other cognate units of similar size. Without contextual information it is hard to know whether the Department is receiving more, less, or similar support as other units. There are many historical reasons that have dictated how budgets are allocated to various units and it might be time to revisit these historical allocations to bring about equity and fairness to all units while taking into consideration the size of educational and research programs conducted in each unit.</p>	<p>Please see responses to #25 and 26 above.</p>
	29	<p>“Develop a strategy to increase student stipend levels to provide a living wage appropriate for the city of Toronto.”</p>	<p>We are pleased to say that TFoM has decided that the harmonized stipend for ALL basic sciences will be 40K/year for PhD and 37.5K/year for Master’s students. This is an important increase and should alleviate some of the concerns around cost of living for graduate students. Having said that, housing costs remains a major concern for graduate students and our and other Departments will have to continue exploring how to best support the</p>	<p>TFoM recently enhanced the harmonized stipend for graduate students, providing \$40K/year for PhD students and \$37.5K/year for Master’s students. In addition, the Office of the Vice Dean, Research & Health Science Education has recently undertaken a comprehensive mapping exercise to identify sources of funding for trainees, including awards, that are currently under-utilized.</p>

			incoming graduate students and ensure that they have a proper living wage while undertaking graduate studies.	
	30	<p>“The Department may consider expanding the office staff to add dedicated education coordinators, a dedicated assistant to the Department Head, a dedicated EDIIA position, and a dedicated alumni relations position. These key additions would reduce the administrative burden on the faculty and allow them to devote more of their time to research and trainee mentorship.”</p>	<p>This is a great suggestion. We are indeed aware that the Department’s administrative staff have a heavy workload. We have hired two additional staff members in the last year; however, the workload continues to expand and grow. To hire additional staff, the Department would need additional sources of revenue and a hiring budget. As mentioned above, the Chair will work with the Dean and the CAO to ensure that the Department’s base budget is similar to cognate units.</p> <p>With regard to revenue generation, the Department is presently at its maximum capacity for undergraduate education and could perhaps grow a little bit (10-15%) at the graduate level. Beyond that, contracts or grants with overhead would constitute another source of revenue; however, for a basic science unit, contracts are limiting.</p> <p>We are aware of the challenges expansion would bring for our administrative staff, and we will continue to explore sources of revenue which can then be used to increase office staff in the specific/important/strategic area.</p>	<p>To meet the growing needs of the Department, two new administrative staff members have recently been hired. In keeping with other TFoM Departments, the Dept. of Pharmacology & Toxicology has a faculty EDIIA lead, namely, Dr. Rebecca Laposa. When it comes to EDIIA efforts pertaining to student outreach, rather than each department building and expanding its own program, departments are encouraged to use the infrastructure and community relationships that have been carefully established by TFoM’s Office of Access & Outreach, under the leadership of Ike Okafor.</p>
Other recommendations not prioritized in the Request for Administrative Response	31	<p>“The review committee identified needs for institutional improvement in the areas of accessibility and diversity. These enterprise-level issues should not be left to the Department but instead, Departmental leadership, faculty, and trainees should be invited to engage in university-wide initiatives and then be provided new financial resources to tackle these critical issues at the local level.”</p>	<p>This is a great suggestion. The Department has implemented several EDIIA initiatives, including establishing fellowships for incoming students, creating two paid Student Outreach Ambassador positions and appointing an EDIIA Department Lead (Dr. Laposa), etc. The Department has also engaged with TFoM’s Office of Inclusion & Diversity and has collaborated on an outreach program to students from underrepresented backgrounds. These collaborations are ongoing, and we hope to expand them within the TFoM, and, as has been suggested perhaps even within UofT. The Department is pleased to have an EDIIA Lead. EDIIA is an important and active area in our Department and we will continue to make progress and engage meaningfully in EDIIA endeavours for years to come.</p>	<p>Under the leadership of Dr. Rebecca Laposa, the Department is engaged in a number of EDIIA initiatives, particularly with respect to student outreach. There are opportunities to expand and harmonize this work with other programs through TFoM’s Office of Access & Outreach. Through the Office of Inclusion & Diversity there are numerous opportunities for the development and implementation of educational offerings for learners, staff, faculty and departmental leaders. Opportunities to work in solidarity with other departments and programs are presented through the Faculty-wide Diversity Advisory Council. Dr. Laposa is an active member of this Council.</p>

3 Committee on Academic Policy & Programs (AP&P) Findings

The spokesperson for the reading group reported that the review summary accurately described the full review. The reading group reported that the Dean's administrative response had adequately addressed issues identified by the review, however, the reading group commented that many issues were still in consultation, and many concerns from the previous external review remained. The Reading Group noted that the program response contained areas where actions were assigned to ambiguous timelines, lack of concrete outcomes and vague assurances, and found this ambiguity to be unsatisfactory. The Reading Group also identified concerns around the admissions process relying too heavily upon GPA to be worth revisiting with a holistic approach, noting that the consequence was potentially rewarding students who 'gamed the system' to boost their marks, and not a reflection of their actual intellectual curiosity or other achievements. The group acknowledged that an interim report was expected in 2025, and that some of the transformations to the organizational and financial structure of the department would take some time to implement and assess.

Ali Salahpour, Chair of the Department of Pharmacology & Toxicology commented that:

The department's resources were being strained by increasing popularity of the undergraduate program. The department had hired two new administrators for the undergraduate program and three additional professors.

An environmental scan was being conducted to understand the decline and lack of interest in the Biomedical Toxicology Program, and to engage with toxicologists across University of Toronto to strengthen the toxicology discipline through ongoing consultations.

Around 10 to 20% of their courses were online, which aligned with practices at the Faculty of Arts and Science.

He reported that a town hall was held on July 18, and that there were biweekly departmental meetings. He was in consultation with the Chief Administrative Officer (CAO) and internally to address issues related to the departmental budget.

In the area of GPA that was used for undergraduate admissions process, it was a faculty-wide practice, and that change needed to be done at the faculty-level, not departmental level. He highlighted that colleagues in the MD program had made efforts over the recent years to rely less on GPA, and this is perhaps something that the FAS could leverage, acknowledging that it was better to decrease the reliance on GPA for undergraduate admissions.

No follow-up report was requested.

4 Institutional Executive Summary

The reviewers praised the department's education mission as extensive, noting that curricula are appropriate and reflect the current state of the field. Enrolment numbers are strong in nearly all programs, and committee structures to support and mentor graduate student progress appear to work well. They noted that undergraduate students are enthusiastic about program content as well as available opportunities for real world learning experiences, peer mentorship and career development programs. Graduate students are actively engaged in associations and societies, and contribute to a sense of departmental community; and PhD time to completion is excellent. Faculty research programs are strong and include cross-appointed faculty in affiliated hospital-associated research institutes; and the appointment of associate chairs for both undergraduate and graduate education has further strengthened the department's education mission, enhanced programmatic strategy, and reduced administrative burden on the chair. Finally, the reviewers highlighted the excellence of administrative staff, and the mutual respect evident among Pharmacology and Toxicology community members, with faculty, students, and staff proudly contributing to the department's collective mission.

The reviewers recommended that the following issues be addressed: challenges related to conducting optimal assessment of departmental student learning outcomes and alumni trajectories; limited availability of life science-oriented industry internship opportunities for undergraduate students; current undergraduate and graduate admissions requirements rely heavily on GPA; graduate students are directly admitted to individual labs, while lab rotations are used by many North American programs; the lack of a consistent program in lab safety training, and of a formal course in grant writing and scientific communication; supporting and retaining faculty through a number of initiatives, including more clearly defined faculty roles and responsibilities; challenges related to the geographic dispersion of the department; concerns around student morale and mental health, particularly related to the COVID-19 pandemic; faculty and student concerns around disruptions related to demolition and renovation plans; pursuing partnerships to support and maintain Departmental research and student mentorships during downturns in national research funding; develop a strategic plan that aligns available resources, enrolment plans and the quality of student academic experience.

The Dean's Administrative Response describes the division and unit's responses to the reviewers' recommendations, including an implementation plan for any changes necessary as a result.

5 Monitoring and Date of Next Review

In 2025 the Dean will follow up with the Chair of the Dept. of Pharmacology & Toxicology on the implementation of the external reviewers' recommendations and will provide an interim report to the Vice-Provost, Academic Programs no later than December 2025 on the status of the implementation plans.

The next UTQAP review of the Dept. of Physiology will be commissioned in 2027-28.

6 Distribution

On June 30, 2024, the Final Assessment Report and Implementation Plan was posted to the Vice-Provost, Academic Programs website and the link provided by email to the Dean of Temerty Faculty of Medicine, the Secretaries of AP&P, Academic Board and Governing Council, and the Ontario Universities Council on Quality Assurance. The Dean provided the link to unit/program leadership.