

PATHOLOGY & MOLECULAR MEDICINE 5-YEAR REPORT 2017-2022

BRIGHTER WORLD

HEALTH SCIENCES
Pathology & Molecular Medicine



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Message from the Chair - Department Overview

The Department of Pathology and Molecular Medicine (PMM) has a rich history, filled with outstanding achievements and memorable leaders from the inception of the Department in 1974. When the Department was formed, it was focused on clinical laboratory medicine, but over time it gained a significant role in undergraduate Education and basic research. The last five years have brought substantial changes to the Department of Pathology and Molecular Medicine at McMaster University. In 2019, the Department began a process to re-envision itself and define its priorities, culminating in the creation of a five-year strategic plan for 2021-2026.

PMM is an integration of basic and translational biomedical science, undergraduate, graduate, and post-graduate education excellence, and innovative clinical laboratory medicine. PMM is also the primary academic home to the Hamilton Regional Laboratory Medicine Program (HRLMP), with over 80% of HRLMP faculty having a primary academic appointment in PMM. Conversely, more than 80% of all primary faculty in PMM have clinical roles within HRLMP. With this prominent level of shared faculty, PMM and HRLMP coordinated our strategic planning, with many faculty and staff outreach activities informing both strategic plans.

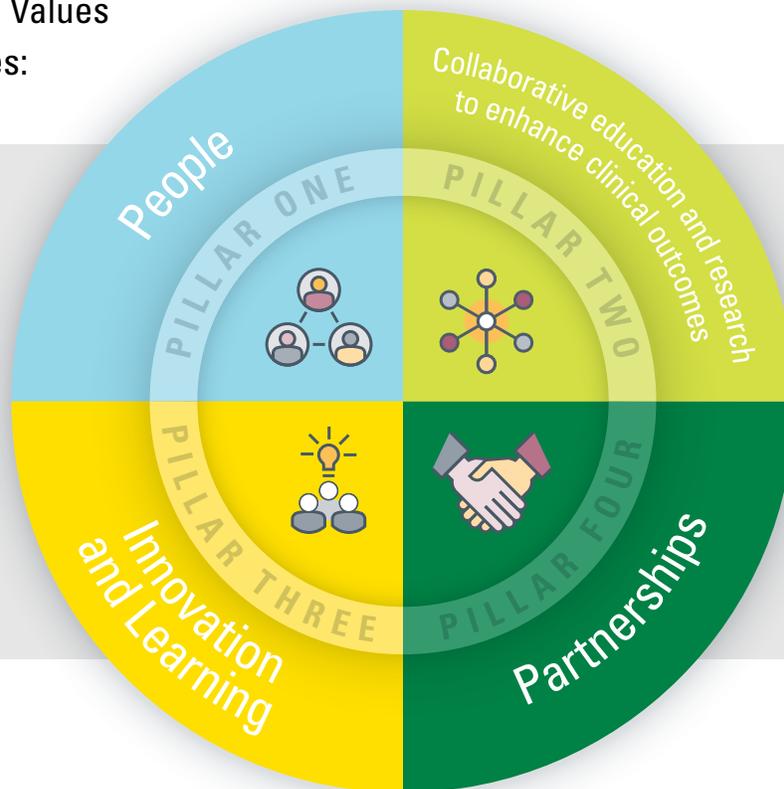
Our mission statement is “Pathology and Molecular Medicine values people and partnerships. We seek innovative solutions to clinical, educational and research challenges using a collaborative approach.” Our greatest resource is our people, and we currently have 69 faculty members and 7 staff on our administrative team. Faculty are grouped into 2 clinical divisions, Anatomical Pathology and Clinical Pathology, and 1 non-clinical division, Anatomy and Molecular Medicine.

Our vision is that “We aspire to be leaders of innovation, exploration and collaboration in Pathology and Molecular Medicine by integrating education, research, and best practice.” We are recognized for our expertise in basic and clinical research, outstanding diagnostic, and clinical medicine, and for our strong commitment to undergraduate, graduate, and postgraduate Education, all of which illustrate the strength and diversity of our faculty and staff. We are outstanding researchers in infectious

diseases, molecular virology, cancer, respiratory and gastrointestinal diseases, cardiovascular diseases, genomics, and bioinformatics. Our faculty contribute to Health Sciences education in the Bachelor of Health Sciences, the undergraduate medicine program, and graduate studies. Our Postgraduate Training Programs in Laboratory Medicine are considered some of the best in Canada. This is an eventful time in health research, Education and clinical care, and our faculty and staff are making important contributions to the advancement of knowledge.

In preparing our strategic plan, one of the common themes we heard in the Department was the desire to have more transparency and broad input around decisions and operations. This led to the creation of new leadership positions and committees who were tasked with implementing the strategic plan. Short-term and medium-term deliverables were defined, with a goal of regularly updating the plan to reflect completed work and new projects to tackle. The pandemic slowed some of our momentum and work plans, but we are back on track. This five-year report is the story of the new Pathology and Molecular Medicine structure, function, and goals.

Our Core Values & Themes:



Our Mission

Pathology and Molecular Medicine values people and partnerships. We seek innovative solutions to clinical, educational and research challenges using a collaborative approach.



Our Vision

We aspire to be leaders of innovation, exploration and collaboration in Pathology and Molecular Medicine by integrating education, research, and best practice.



Organization and Physical Structure

Our faculty members work throughout the City of Hamilton at the academic hospital sites, the main McMaster campus, and at two regional campuses of the medical school, the Waterloo and Niagara campuses. Most of our faculty members are outside paid by the Hamilton Regional Laboratory Medicine Program, contributing to laboratory medicine and related clinical service along with their academic activities, and they are located at the Hamilton hospitals. We also have non-clinical faculty members, including ten MUFA (McMaster University Faculty Association) faculty, who contribute to the educational and research mission at the McMaster main campus in the health Sciences Centre (HSC) and the Michael Degroote Centre for Learning and Discovery (MDCL) building. Our administration team recently relocated to the 2N area of HSC.

Our Hospitals

Juravinski Hospital & Cancer Centre



Hamilton General Hospital



McMaster Children's Hospital & McMaster University Medical Centre



St. Josephs Healthcare



Niagara & Waterloo Regional Campuses

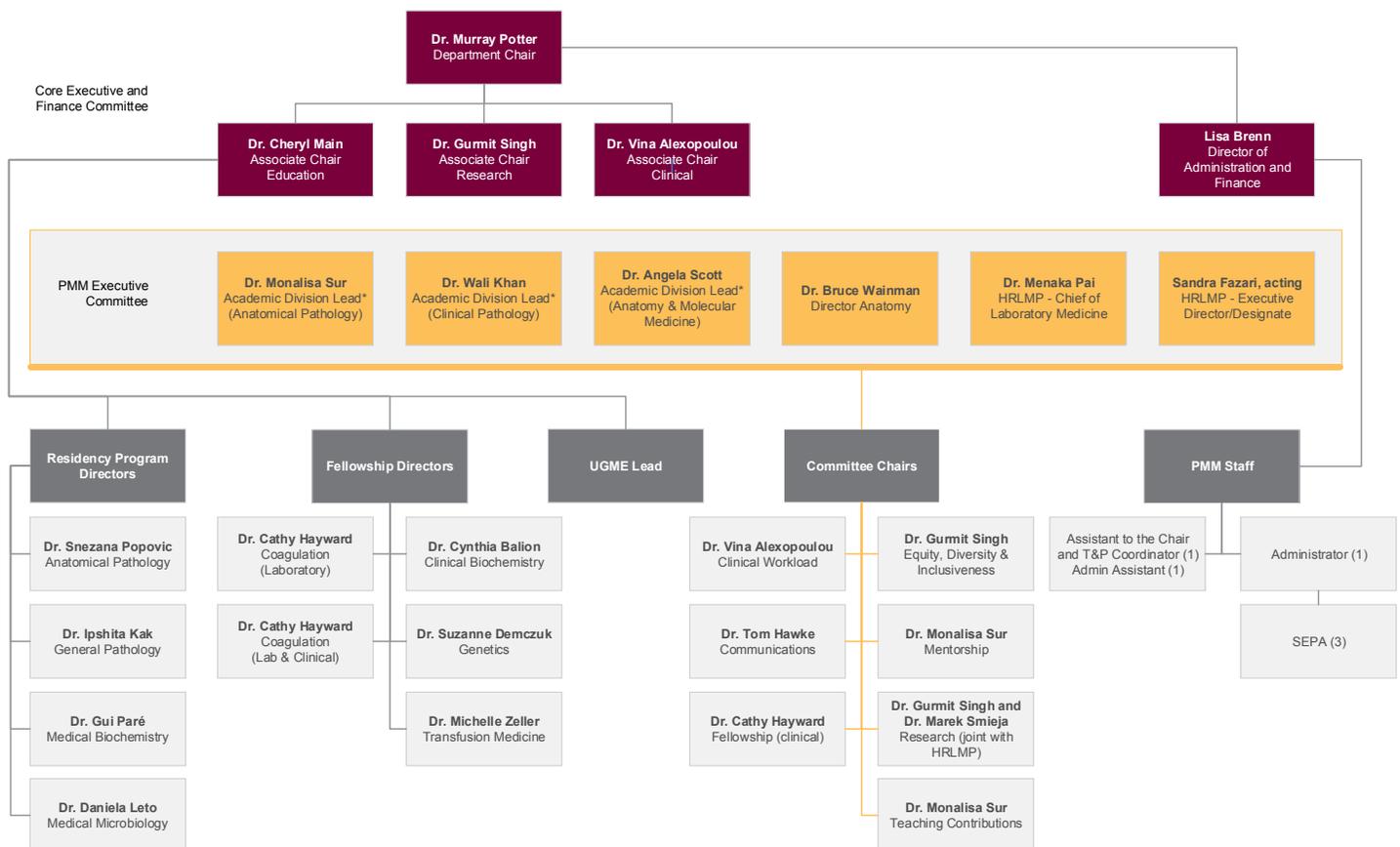


Administrative Organization and Management

Pathology and Molecular Medicine’s administrative organization, led by the Chair, is comprised of several leaders and committees that work together to advance the Department’s mission. The revised structure includes three associate chairs (Clinical, Education and Research) and three division leads.

The Associate Chair Education (Dr. Cheryl Main), Associate Chair Clinical (Dr. Vina Alexopoulou), and Associate Research (Dr. Gurmit Singh), work with the Chair to align the strategic mission of each area and set priorities for future years. These leaders along with the Chair (Dr. Murray Potter), and the Department’s Director of Administration and Finance (Lisa Brenn), make up the Department’s Core Executive and Finance committee.

The Department Executive Committee members include the Core Executive and Finance members plus the Chief of Laboratory Medicine (Dr. Menaka Pai), the HRMP Executive Director (Sandra Fazari, acting), the Directory of Anatomy (Dr. Bruce Wainman), and the division leads from each of the three divisions, Anatomical Pathology (Dr. Monalisa Sur), Clinical Pathology (Dr. Wali Khan), and Anatomy and Molecular Medicine (Dr. Angela Scott). This expanded structure, with clear lines of representation, improves the accountability and transparency of PMM leadership and operations. It also increases leadership opportunities and options for succession planning.



Administrative support for all aspects of the Department is led by the Director of Administration and the core departmental administrative staff, including the Administrator (operations support), the Administrative Assistant to the Chair and Academic Coordinator (faculty recruitment, tenure and promotion), Administrative Assistant (DOA, Medical Science undergraduate program development lead and the Associate Chairs support) and the Senior Education Program Assistants who support our Post Graduate laboratory medicine programs.

In 2021 the Department created several committees to support the implementation of the strategic plan initiatives. Even though the pandemic slowed some of our progress the Department moved forward to achieve some of our short-term goals with a target of working towards accomplishing our longer-term goals.

Pathology & Molecular Medicine Pillars



People

Equity, Diversity
Mentorship, Wellness

VISION 2026

Faculty and staff are engaged and supported in all their roles

1-2 YEAR INITIATIVES

- Create Mentorship, EDI, and Communications committees and initiate their plans
- Launch new web-site
- Repeat faculty survey
- Develop training plans (e.g., EDI topics)

3-5 YEAR INITIATIVES

- Implement training plans
- Improve faculty retention and recruitment



Collaborative, Integrated Education & Research to Enhance Clinical Outcomes

Collaboration, Integrated Academic and Clinical Mission, Purpose-Driven, Unique

VISION 2026

Enhanced academic and clinical collaboration leading to improved clinical care and training

1-2 YEAR INITIATIVES

- Establish join research committee with HRLMP
- Streamline collection of PGME teaching
- New fellowship programs approved & launched

3-5 YEAR INITIATIVES

- Launch MLT program
- Increase collaborative projects and publications



Innovation & Learning

Innovation, Education Excellence, Entrepreneurial, Leading

VISION 2026

Leading programs in education and research

1-2 YEAR INITIATIVES

- Capturing research and education contributions for whole department
- Develop metric of research activity and output as department, collect this data

3-5 YEAR INITIATIVES

- Increased research activity and output
- Explore new educational programs



Partnerships

Commitment to Local, National, and International Communities and Partnerships

VISION 2026

Increased local, national and international presence

1-2 YEAR INITIATIVES

- Clinical contribution committee established to capture/develop metrics around external collaboration
- Balance clinical workload and academic workload

3-5 YEAR INITIATIVES

- Better balanced clinical and academic workloads
- Increased external collaborations

Department Committees

Awards and Nominations Committee



**Dr. Tariq Aziz,
Chair.**

This committee was formed to select our internal annual teaching awards for faculty:

1. Academic/Research Faculty Excellence in Teaching Award – peer nominated
2. Clinical Faculty (AP) – John Fernandes Teaching Award – peer nominated
3. Clinical Faculty (CP) – Clinical Pathology Teaching Award – peer nominated
4. Resident Nominated Clinical Faculty Award (AP)– resident nominated*
5. Resident Nominated Clinical Faculty Award (CP)– resident nominated*

*These awards will be selected annually by a separate resident working group consisting of a representative from each post-graduate training program. Their selection will be forwarded to the committee chair.

The teaching awards are to recognize and encourage excellence in Education (teaching, curriculum development, mentoring, faculty development, research, and education administration) within our Department. The awards and nominations committee now also has an expanded scope to review and select candidates for other awards as required.

Members: Chair – Cheryl Main, Admin – Erin Alderson, Sarab Mohamed, Menaka Pai, Murray Potter, Angela Scott, Monalisa Sur

Clinical Workload Committee

Dr. Vina Alexopoulou, Chair.

This committee reviews the workloads for all clinical disciplines, which includes Anatomical Pathology, and the Clinical Pathology disciplines of Microbiology, Chemistry/Immunology, Laboratory Hematology, and Laboratory Genetics. The committee seeks input from faculty and from evidence-based methodology to quantify the

clinical activity in each area and review the number of clinical faculty positions per discipline.

In 2021 the Anatomical Pathology review used the L4E methodology, approved by the Canadian Association of Pathologists to assess workload in Pathology. The findings resulted in two positions being immediately added to the Anatomical Pathology professional staff and two further positions being considered for the future. The committee will continue to work with all disciplines with the aim of “right-sizing” our clinical workforce.

Traditionally, the R4 form reflects the distribution of activities for each faculty member into four categories: clinical, Education, research, and administration. This committee will review and propose strategies to capture clinical activities in the R4 form, in a standardized way, by providing specific directions to faculty. Such recommendations will be applied in the 2022-23 faculty annual review.

Members: Chair – Vina Alexopoulou, Admin – Erin Volk, Shannon Bates, Tony Chetty, Murray Potter, Marek Smieja, John Wayne, Deborah Yamamura

Communications Committee



**Dr. Tom Hawke,
Chair.**

This committee assists our department leadership with developing and maintaining an effective communication strategy. This includes, but is not limited to, moving to best practices in structures of communication such as websites, social media, emails, and bulletins, resulting in improved information exchange and transparency. Our externally facing presence needed the most immediate attention, and in 2022 the work of this committee along with the administration team has implemented a new department bulletin and a new website at <https://pathologymolecularmedicine.healthsci.mcmaster.ca/>. We will also launch on several social media platforms in late 2022 / early 2023. With these tools in place, we can develop strategies to enhance the profile of PMM to potential future students and faculty, as well as other members of the university and public. The committee and administration team will also launch a department SharePoint portal as an “intranet” for improved internal communication in November 2022. This portal will enhance communication across the Department and allow for exciting efficiencies in processes like

expense reimbursements, academic activity tracking, annual career reviews, and tenure and promotion activities.

Members: Chair – Tom Hawke, Admin – Jane Goad, Lisa Brenn, Snezana Popovic (AP), Joe Macri (CP), Murray Potter, Cathy Ross (AP), Wali Khan (CP)

Equity, Diversity, and Inclusiveness Committee



**Dr. Gurmit Singh,
Chair.**

EDI committee membership is open to anyone who has an interest in ensuring the Department adopts best practice in promoting and celebrating diversity and operating with equality and inclusion for all members of the Department. The current committee consists of 8 members representing both academic and clinical faculty and members with a diversity of rank, career length, gender, and race. The Department considers EDI as a hallmark of all our activities in Education, research, and clinical care.

Over the past year, the committee worked with the McMaster equity and inclusion office for relevant training for faculty, staff, and trainees. Faculty, staff, and trainees had an opportunity to be trained in the foundations and basic principles of EDI. The members of the Department have become aware of EDI principles and unconscious bias in various activities of the Department. All recruitments to the Department are now considered with an EDI lens. We believe that our activities are enhanced when everyone truly can optimize their potential. Training of various members in the Department are ongoing including the Employment Equity Facilitator Program. We encourage continued training in EDI as it becomes available both from Faculty and University EDI offices.

The committee meets twice a year to update on new opportunities available and ensure we adhere to EDI principles in the Department.

Members: Admin – Erin Volk, Wali Khan (CP), Cheryl Main (CP), Angela Scott (Academic), Sarab Mohamed (GP/AP), Tony Chetty, Jean-Claude Cutz (AP)

Fellowships Committee



**Dr. Cathy Hayward,
Chair**

At our 2019 retreat the faculty members communicated to leadership that additional clinical fellowships in lab medicine are needed. Graduates of our post-graduate medical education programs are looking for sub-specialty training, and employers are looking for candidates with these skills. This committee has created and will maintain a process for clinical fellowship program development and approval. The committee chair will liaise with the PGME office to ensure applicable policies and procedures in PMM are in alignment with PGME. The committee will also develop an equitable and transparent process for department-funded fellowship position distribution and selection of candidates. Through broad consultation or an expression of interest from faculty to lead a specific fellowship, the PGME Clinical Fellowship committee will make recommendations and report to the PMM Executive Committee.

This committee has already supported the creation of a clinical and a laboratory coagulation fellowship, a medical biochemistry fellowship, and a medical microbiology fellowship. Plans are underway for an overarching surgical pathology fellowship where faculty members will be able to quickly create individual sub-specialty streams (e.g., breast pathology, renal pathology, etc.) as needs and interests arise.

Members: Gurmit Singh, Hamid Kazerouni, Jian-Qiang Lu, Vina Alexopoulou, Ipshita Kak, Snezana Popovic

Mentorship Committee

**Dr. Monalisa Sur,
Chair**

New hires are supported by the PMM leadership team with a faculty orientation meeting and quarterly meetings during the first year of appointment with the department chair and/or applicable Associate Chair delegate. All faculty undergo an annual review meeting, where career goals and aspirations are discussed. However, additional strategies are needed to fully support new faculty, and mid and late-career faculty support is also important.

The purpose of this committee is to assist our department leadership with developing and maintaining an effective mentorship strategy. This includes, but is not limited to, aligning faculty members with mentors in Education, research, and clinical service. The committee will ensure a broad consultation with faculty to better understand the mentorship needs and provide suggestions on implementing strategies to align faculty members with high performing colleagues to exchange knowledge, skills, and experience.

This committee is working with our members and the program for faculty development to align the needs of the faculty members with a program that supports faculty members scholarly success. As of the fall of 2022 we are evolving this committee to include faculty wellness. This will allow the group to better facilitate work life integration, health, and overall wellbeing.

Members: Chair – Monalisa Sur, Admin – Jane Goad, Liz McCready (CP), Pooja Vasudev (AP), Snezana Popovic (AP), Judy West-Mays (Academic), Ilana Bayer, Cheryl Main

PGME Teaching Contributions Committee

Dr. Monalisa Sur, Chair

The committee will enable broad consultation and engagement of clinical faculty around recognition, reporting and tracking of post-graduate medical Education. This includes, but is not limited to, the Faculty of Health Science's MacFACTS / STAR (and successor) education tracking system. The committee's work has led to additional roles being set up in the MacFACTS / STAR system to ensure the faculty members' activities are captured correctly. This committee is also looking at ways to reduce the administrative burden on faculty when collecting teaching hours and ways to standardize contributions for anatomical pathologists.

Members: Chair – Cheryl Main, Admin – Erin Volk, Vina Alexopoulou, Tariq Aziz, Tony Chetty, JC Cutz, Catherine Hayward, Ipshita Kak, Murray Potter, Snezana Popovic, John Provias

HRLMP-PMM Joint Research Committee



Dr. Gurmit Singh and Dr. Marek Smieja

A large part of the research conducted in the Department is integrated with that of the Hamilton Regional Laboratory Medicine Program. This collaborative relationship is formalized in the joint committee and represents mutually beneficial and well-defined opportunities in achieving a common goal. Our goal is to seek innovative solutions to improve patient care and be cognizant of health care costs. We aspire to be leaders of innovation, exploration, and collaboration within the faculty, nationally and internationally. Our research is conducted with an EDI lens and thereby provides opportunities for all members of PMM and HRLMP.

Members: Chair – G. Singh & M. Smieja, Admin – Erin Volk, Wali Khan (CP), Daria Grafodatskaya (CP), Gui Paré (CP), Ipshita Kak (AP), Jian Lu (AP), Angela Scott (Academic), Clinton Campbell

Resident Research Grant Committee

Our Laboratory Medicine Post Graduate Residents and Fellows can apply for department sponsored research funding two times per year. The Resident Research Grant committee review the applications and administers the awards. Most of the funded research projects are presented at the annual resident research day in the fall.

Members: Gurmit Singh, Daria Grafodatskaya, Dominik Mertz, Joseph Macri, Cheryl Main, Phillip Williams

Inter/Intra-Department/School Communication

Communication with our faculty and staff is a priority for the Department. We communicate with our faculty and staff in various formats such as the [department bulletin](#), semi-annual department meetings and additional Chair updates as required. The pandemic hindered our in-person meetings, so we successfully transitioned to virtual meetings and were able to continue to share department updates via virtual semi-annual department meetings. A positive outcome of the pandemic is the increased comfort of using virtual meeting technology. This has allowed us to continue to use Microsoft Teams and Zoom platforms to connect people in various locations, minimizing travel time. For some meetings this has led to increased attendance.

In 2020 we transitioned to department meetings four times per year with faculty and staff, with two meetings held virtually in conjunction with the HRLMP and two meetings for PMM only. In person meetings commenced again this summer with our annual summer BBQ to celebrate faculty and staff member achievements such as awards and promotions, new and departing members. We have transitioned our winter meeting to a professional development and networking session to allow faculty members to interact and work together on team building/professional development activities

This fall we launched our Brighter World branded [external website](#). This site provides faculty and visitors with an overview of the many groups and disciplines that make up the Department. We will continue to update the faculty information, achievements of our faculty, students and staff, and information pertinent for individuals external to McMaster such as prospective students, faculty, and staff.

We maintain email distribution lists for faculty, students, and staff. Distribution of communications are conducted by email, including department celebrations, rounds, faculty development offerings, funding opportunities, and all other information received by the Chair that is deemed relevant. Our faculty regularly submit items for inclusion in our department communication platforms.

In November 2022 we will be launching the department SharePoint portal. The portal will provide the faculty and staff with the ability to submit documentation for finance and HR transactions and view process information and resources such as: new faculty orientation, Education, research, career progression, tenure and promotion, annual career reviews, mentorship, wellness, and administrative processes. The portal includes pages for each department committee to enable department members to view meeting minutes.





Our People

The Department of Pathology and Molecular Medicine is comprised of a unique integrated group of academic clinicians, biomedical scientists, and educators and is currently home to 69 full time faculty members, 41 part time faculty members and 12 Associate members. Among the 69 active full time faculty members, there are eleven (11) Assistant Professors, thirty-six (36) Associate Professors and twenty-two (22) Professors. This group is comprised of 57 members in the Clinician Educator stream, nine (9) members in the Research Educator stream, and three (3) members in the Teaching Track stream. All core faculty in the Department hold an MD, MD/PhD, or PhD degree.

Career Guidance

The Chair meets with Faculty members on an *ad hoc* basis and at minimum, with each faculty member annually as part of the annual review process. This helps ensure all faculty members within the Department are fulfilling their academic obligations and are provided with guidance about their academic careers. Formal professional development activities are encouraged, and all faculty have a professional development fund to cover the costs of these activities. Faculty Affairs provides leadership training through the Academic Leadership Program (ALP), the Bridging Leaders Program and the MacPherson Institute offers courses and workshops to enrich teaching and technology skills. The Department encourages participation in the ALP and Bridging leaders program each year since it began, and provide department sponsorship.

2017/18	Dr. Cheryl Main	
2018/19	Dr. Elizabeth McCready	
2019/20	Dr. Miranda Schell	
2021/22	Dr. A. Scott Dr. S. Mehravaran Dr. E. McCready Dr. C. Balion Dr T. Azziz	Dr. Darren Bridgewater

Prior to the career reviews, the Chair reviews those faculty members who are eligible for consideration of reappointment, tenure/CAWAR (Continuing Appointment Without Annual Review), promotion to Associate Professor and Full Professor. At the career review, faculty who will take part in a tenure and promotion academic review process are provided with an appropriate toolkit containing documentation to assist them with the process plus applicable timelines. The criteria for tenure and promotion are discussed at that time and any questions regarding the process are addressed to ensure that each member is informed of the timelines and process.

In preparation for career reviews, our faculty are provided with an instruction letter and fillable forms for their Mutually Agreed Responsibilities (R4) and Educational and Research activity to complete along with an Annual Career Review Letter template that outlines all the areas of information they need to provide for the discussion – this also allows them the opportunity to highlight areas of concern or items they would like to discuss. Our clinical faculty are also provided with a “Laboratory Medicine and its Subspecialties” postgraduate teaching form to ensure capture of this information. The Chair collates data on each faculty member’s publication record, research funding, and teaching evaluations for internal tracking. During the meeting, the Chair will highlight accomplishments and discuss any concerns and areas for improvement. Also, the Chair and faculty members will discuss R4 commitments to teaching, research, and service for the coming year. Following the meeting, the Chair provides a detailed letter summarizing the discussion. The Annual Career Review Letter, when completed is reviewed and signed off by the faculty member, the Chair and the Associate Chair Education and becomes part of their faculty file.

To accommodate the differing reporting periods of the University and hospitals (July 1 to June 30 and January 1 to December 31 respectively), we jointly interview our clinical faculty along with the Chief, HRLMP at their hospital reappointment meeting March/April of each year. These clinical career reviews are attended by the Chair, the Associate Chair Education, the Chief of Laboratory Medicine, and the appropriate clinical Division Head (laboratory Discipline Director). The research/teaching faculty are reviewed in Jan/Feb and are attended by the Chair, the Associate Chair Education, and the Director of Administration.

New Faculty Orientation Session

To ensure that our new recruits are aware of their academic responsibilities and to answer their questions as they start to settle in, the Department of Pathology and Molecular Medicine organizes an orientation session; this session, which has a mandatory attendance policy, is designed as an information session to educate new faculty on the academic expectations. At this session, the Chair along with the Clinical, Education and Research Associate Chairs provides information and guidance to help them get to know the faculty and the Department, the requirements for annual career reviews, processes and timelines for tenure and promotion, the importance of maintaining a teaching portfolio and for our clinicians the clinical activities portfolio, an overview of research conduct and documentation and the importance of maintaining a CV in the McMaster format. This session also offers an opportunity to emphasize the importance of adherence to guidelines and deadlines. (Appendix G.I PMM New Faculty Handbook). New faculty are also encouraged to meet separately with the Chair regarding opportunities for mentorship from internal and external colleagues. While this has traditionally been on an ad hoc basis, in response to PMM strategic planning goals our Department’s Mentorship Committee is working to establish a more formalized PMM mentorship program that will be tailored to align with the self-identified needs of our early, mid, and late career faculty members in each division.

Tenure and Promotion

The objectives of tenure and promotion policies are to preserve and enhance McMaster’s reputation as an institution of higher Education. Through the established policies created to maintain high standards of teaching, scholarly activity, and service, these core academic mandates are protected. The efficacy of this process rests firmly on peer evaluations, for the faculty is best able to establish and apply promotion criteria. Hence, Tenure and Promotion and all it entails are taken very seriously.

We have a well-defined process to facilitate reappointment, tenure/CAWAR/ permanence, and promotion review within the Department. Tenure and promotion reviews take place annually for full-time faculty and every one to three years for part-time faculty members. Furthermore, to guide all faculty members, the Department has a tenure and promotion academic coordinator responsible for the process. The academic coordinator is an expert on university policy and is available to all faculty members for guidance and to address questions related to the Tenure and Promotion Process.

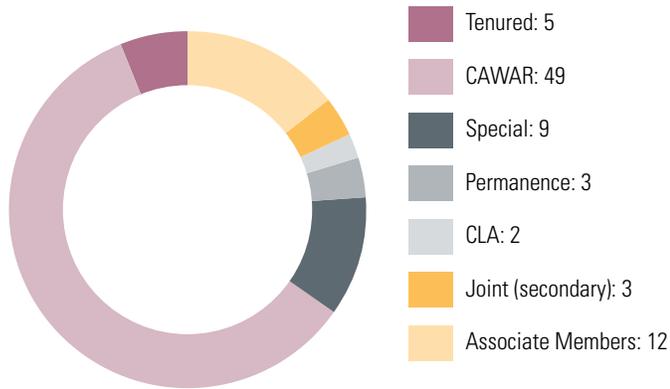
To ensure and support the application of university policy and regulations with respect to academic review, the PMM Tenure and Promotion Committee Terms of Reference were developed to formalize the Committee's mandate, meeting frequency, committee representation and membership term. The membership is reviewed annually to ensure we follow our Terms of Reference.

In the Fall of each year, the academic coordinator reviews each faculty member's status for Tenure and Promotion and the slate is then reviewed by the Chair prior to the annual career review meetings. Once the Chair confirms the slate, candidates going forward for review are presented with an information package to assist them with document preparation. From this point onwards, they are closely tracked by the academic coordinator as they move through the entire process. The T&P Committee members are provided with the documentation for all faculty members up for review approximately three weeks prior to the first scheduled meeting. This provides sufficient time for the committee to review the documentation and provide their fulsome comments and recommendations. The 1st Department Tenure and Promotion Committee meeting convenes in Feb/March, a complete review of all their documentation is undertaken and an initial recommendation is made. The Academic Coordinator works with the Chair and the candidate to finalize a list of potential referees that, in accordance with university policy, is sent to the Dean's office for approval. The committee then requests external and internal letters of review. A 2nd Department Tenure and Promotion Committee meeting takes place in June for a final review of the candidates' dossiers along with the referee letters; the Chair will make a recommendation to the Committee and the Committee will vote if they are in favour or not in favour of the recommendation. If there are candidates being considered for promotion to Professor, they will initially be reviewed at the 2nd meeting and their final recommendation will be made at a 3rd meeting in September. All paperwork is submitted to FHS (Faculty of Health Sciences) Faculty Relations by the Coordinator for Academic Operations, as per the University Guidelines. Faculty Relations then reviews the documentation for accuracy and compliance prior to submission to Senate for final approval. All contract renewal and promotion to Associate Professor dossiers are due to Faculty Relations on August 1st and all promotion to Professor dossiers are due to Faculty Relations on October 15th and CLA (Contractually Limited Appointment) renewals are due to Faculty Relations on November 15th of each year. Including in the appendix is the tenure and promotion timeline.

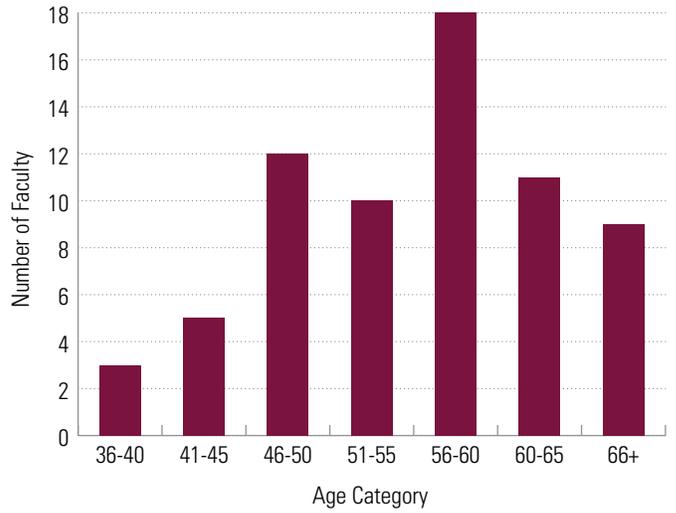


Faculty Demographics

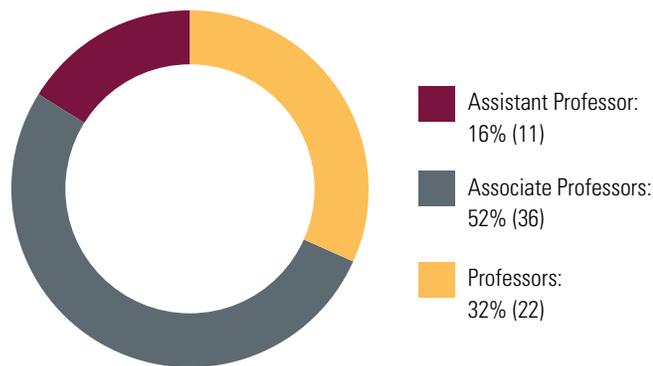
Faculty Distribution by Appointment



Faculty Age Distribution



Faculty by Academic Rank

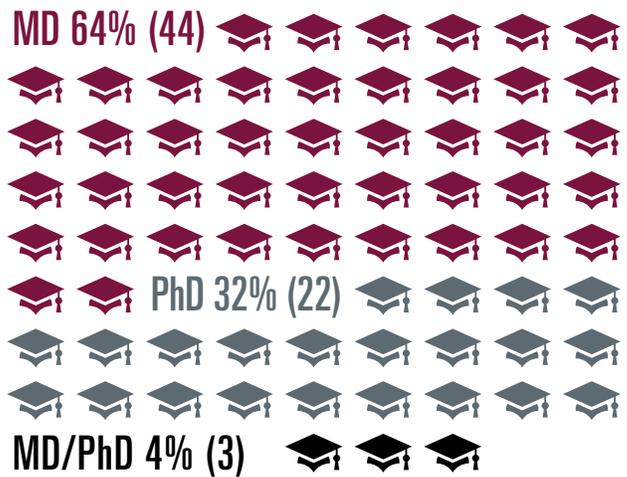


55% male
(38)



45% female
(31)

Degrees Held



Faculty Awards and Honours

Our faculty are recognized internally, provincially, nationally, and internationally for their academic and research contributions as highlighted below.

Faculty Member	Non-Salary Award	Years Held
Dr. Alexopoulou, Vina	Canadian Association of Pathologists, Distinguished Service Award	2017
Dr. Alowami, Salem	Clinical Faculty (AP) John Fernandes Teaching Award	2022
Dr. Arnold, Donald	Mentorship and Supervision Excellence Award, Department of Health Research Methods, Evidence and Impact. McMaster University Outstanding Service Award, Department of Pathology and Molecular Medicine	2019 2017
Dr. Arredondo, Jorge	Resident Nominated Clinical Faculty Award	2022
Dr. Ashkar, Ali	Academic Teaching Award	2018
Dr. Balion, Cynthia	Outstanding Contributions to the Profession of Clinical Biochemistry	2020
Dr. Ball, Sandy	Academic Teaching Award	2019
Dr. Bonert, Michael	Best abstract presented as platform in Gastrointestinal, Live and Pancreatobiliary Pathology	2017
Dr. Bridgewater, Darren	M3K Canadian Kidney Conference 2021 – Presentation Award – Pukhraj Gaheer M3K Canadian Kidney Conference 2021 – Presentation Award – Erin Deacon M3K Canadian Kidney Conference 2021 – Video Poster Blitz Presentation Award – Erin Deacon Excellence in Teaching Award – McMaster University Department Excellence in Teaching Award – McMaster University Academic Teaching Award	2021 2021 2021 2017 2017 2017
Dr. Bulir, David	Dr Jordan Page Harshman Award – McMaster University	2016-2017
Dr. Burrows, Lori	CSM Murray Award for Career Achievement, Canadian Society of Microbiologists Distinguished Visiting Professor, University of Technology, Sydney Australia Outstanding Service Award – McMaster University Faculty Association	2020 2017 2017
Dr. Butcher, Darci	Linda Stevens Memorial Fund Award (CCMG)	2019
Dr. Cates, Elizabeth	Stand Out Team Award, North York General Hospital	2018
Dr. Chan, Anthony	Order of Ontario	2017
Dr. Chong, Michael	McMaster Louis Minden Scholarship in Health Sciences McMaster Department of Pathology and Molecular Medicine Graduate Student Research Excellence Scholarship (DGRES) (International Stroke Genetics Consortium Career Development Award Graduate Student Publication Award OGS PhD – Awarded to 1 student based on Qualification Exam The National Research Foundation (NRF) of South Africa Team Award	2020-2021 2019 2019 2019 2018-2019 2017
Dr. Ciccotelli, William Anthony	Internal Medicine Residency Training Program Community Clinical Teaching Award	2020

Faculty Member	Non-Salary Award	Years Held
Dr. Crowther, Mark	Sisters of St Joseph's Hamilton Mission Legacy Award	2021
	Elected to the Royal Society of Canada	2017
	Awarded the Biennial 2017 International Society of Thrombosis and Haemostasis BACH award for excellence in clinical research, Berlin Germany	2017
	2017 Eberhard F Mammen Seminars in Thrombosis and Hemostasis, Most Popular Article Awards in the 'general' category for the article Venous Thromboembolism Prophylaxis in Critically Ill Patients (Boonyawat K, Crowther MA).	2017
Dr. Graham, Alice	Medical Staff Association Outstanding Resident Award, Lab Medicine	2022
	McMaster Resident Affairs, Bob, and Helen Brown Social Networking Grant	2021
Dr. Hawke, Thomas	McMaster University- Dept of Pathology & Molecular Medicine Teaching Award	2020
	Universtat Bonn, Germany- International Visiting Scholar Fellowship	2017-2018
Dr. Hickey, Tyler	Stowell-Orbison Award – Certificate of Merit, First Author of Poster Presentation. United States and Canadian Academy of Pathology (USCAP) Annual Meeting, San Antonio, TX, USA. (Best Poster Presentation Award, Anatomical Pathology).	2017
	Best Oral Research Presentation – UBC Dept Pathology and Laboratory Medicine Research Day ("Pathology Day"). Presentation titled "Iatrogenic hydrophilic polymer emboli following endovascular procedures: a potentially fatal complication"	2017
Dr. Hill, Stephen	Ontario Society of Clinical Chemists, Lifetime Achievement Award	2021
	Canadian Society of Clinical Chemists, Outstanding Contribution to Clinical Chemistry	2021
Dr. Ivica, Josko	Distinguished abstract, CSCC Annual Meeting, Saint John, NB	2019
	Canadian Society of Clinical Chemists, Fellow/Resident Travel Grant,	2019
	CSCC, Annual Meeting, Saint John, NB	2019
	Resident Research Day Best Platform Presentation, Department of Pathology and Molecular Medicine, McMaster University	2018
	Ontario Society of Clinical Chemists, Fellow/Resident Travel Grant, CSCC Annual Meeting, Ottawa, ON	2017
	Canadian Society of Clinical Chemists, Fellow/Resident Travel Grant, CSCC/AACC Annual Meeting, San Diego, CA	
Dr. Jayaratne, Andra	HRLMP Chief's Award	2019
	Dr. Susan King Paediatric Abstract Award	2019
Dr. Kak, Ipshita	Resident nominated teaching excellence award	2020
	Anatomical and General Pathology Program McMaster University	2018
	Teaching excellence award, University of Toronto MD program	2018
	American Society for Clinical Pathology Top 40 under Forty award	
Dr. Kavsak, Peter	Canadian Society of Clinical Chemistry Distinguished Abstract Award (Senior Author, at the Canadian Society of Clinical Chemistry annual meeting)	2022
	Canadian Academy of Clinical Biochemistry (CACB) Award for Outstanding Service to the Profession of Clinical Biochemistry.	2021
	Canadian Academy of Clinical Biochemistry (CACB) Award for Outstanding Service to the Profession of Clinical Biochemistry.	2019
	Scientists' Choice Award for Clinical Video of the Year, 2019 Clinical Scientists' Choice Awards, Select Science, 2019 for 'Successfully Implementing a High-Sensitivity Troponin Assay with Your Clinical Colleagues'	2019
	Distinction, 2019 The UNIVANTS of Healthcare excellence award for "The Global Impact of Troponin and Biomarkers on Ischemic Myocardial Injury and Surgical Care" (role: Clinical Biochemist)	
Dr. Kazerouni, Hamid	Clinical Teaching Award	2020

Faculty Member	Non-Salary Award	Years Held
Dr. Khan, Waliul	Cozzarelli Prize 2019 for outstanding scientific quality and originality of publication PNAS	2019
	Innovator of Distinction Award – McMaster University	2018
Dr. Loeb, Mark	CRC Chair, Tier 1, Infectious Diseases	2022-2029
	Fellow of the Royal Society of Canada	2020
	<i>Recognition by the Royal Society of Canada is the highest honour an individual can achieve in the Arts, Social Sciences and Sciences</i>	2019
	Thomas Marrie Lectureship University of Alberta	2019
	Fellow of the Canadian Academy of Health Sciences <i>One of the highest honours for members of the Canadian health sciences community</i>	2019
Dr. Liu, Jimin (Nancy)	International Liver Transplantation Society (ILTS) Pathology Committee Chair, ILTS 2019, Toronto (Recognition)	2019
	International Liver Transplantation Society (ILTS) 2019 Local Organizing Committee Member, ILTS 2019, Toronto (Recognition)	2019
Dr. Lu, Jian-Qiang	John Fernandes Faculty Teaching Award - Department of Pathology and Molecular Medicine, McMaster University	2019
Dr. Macri, Joseph	Clinical Facility (CP) Clinical Pathology Teaching Award	2022
Dr. Main, Cheryl	Nominated for PAIRO teaching award	2022
	Clive Davis Award, Medical Staff Association - peer nominated for excellence in patient care.	2021
	Resident nominated teaching award	2021
Dr. Maksymov, Volodymyr	The winner of the Travel Grant 2017. Second World Pancreas forum. Bern. Switzerland.	2017
Dr. Moffat, Karen	McMaster University Hematology Residency Teaching Award	2019
	HRLMP Medical Laboratory Technology Excellence Award	2021
	Carol Biggs Best Abstract Awardee	2021
	McMaster University Hematology Residency Teaching Award – Laboratory 2020-2021 Academic year	2021
	Certificates of Achievement:	2020
	International Journal of Laboratory Hematology Journal of Thrombosis and Haemostasis	2020
Dr. Montemayor, Celina	AABB President's Award	2020
	NIH Clinical Center CEO Award	2017
	AABB Rising Star Award	2017
Dr. Nair, Vidhya	Clinical Teaching Award	2017
Dr. Ning, Shuoyan	Top Downloaded Paper – Transfusion Journal	2018
	AABB Outstanding Abstract Award for Trainee	2019
	Canadian Society of Transfusion Medicine, Top 4 Abstracts CSTM 2019 Scientific Conference	2019
	McMaster Pathology and Molecular Medicine Resident Research Grant	2017
Dr. Pai, Menaka	Top Lecturer Award, Surgical Foundations Program, McMaster University	2021
	Annual Consultant Teaching Award, Emergency Medicine Program, McMaster University	2021
	Canadian Women in Medicine (CWIM) Inspiring Woman Physician Award	2019
	Annual Clinical Teaching Award, Division of Hematology and Thromboembolism, Department of Medicine, McMaster University	2018

Faculty Member	Non-Salary Award	Years Held	
Dr. Pare, Guillaume	Canadian Academy of Medical Biochemists; National Award for Research Excellence	2022	
	GCP (Google Cloud Platform) award credits of \$5000 CAD for research proposal	2020	
	HSGSF Excellence in Graduate Studies Supervision Award – Presented at the FHS Research Plenary Reception, McMaster University	2019	
		2018	
	AHA selected the paper ‘Polygenic contribution in individuals with early-onset coronary artery disease’, published in <i>Circulation: Genomic and Precision Medicine</i> , as one of the ‘Top 10 Advances in Cardiovascular Research in 2018’.	2018	
		2018-2022	
		2021-2022	
	Royal Society of Canada’s College of New Scholars, Artists and Scientists – Member	2020, 2022	
	University Scholar Prize Award – McMaster University; Recognition for mid-career researchers who are distinguished as international scholars	2022	
		2022	
	Student Awards:	2022	
	Alice Man	CGS-M Award- May 2022	2022
		CIHR Canada Graduate Scholarship 2021	2022
		Mach-Gaensslen Award 2022	2022
	Matteo DiScipio	CIRH Canada Graduate Scholarship 2020	
		CIHR CGS-M 2022	
	Mach-Gaensslen Award 2022		
Ricky Lali	CIHR-Doctoral Research Award: Canada Graduate Scholarship 2022		
Nazia Pathan	William Award for Best Platform Presentation at IGES 2022		
Serena Yang	2022 Summer NSERC Undergraduate Student Research Award		
Jianhan Wu	Vanier Canada Graduate Scholarship 2022		
Sukrit Narula	Lancet paper selected by HEI as best graduate student paper award		
Irfan Khan	Abstract selected to be presented at the 58th EASD Annual Meeting Sept 2022-		
	‘Waist-to-hip ratio is a stronger, more consistent predictor of all-cause mortality than BMI’		
Jennifer Chen	BHSc Summer Research Scholarship 2022		
Dr. Popovic, Snezana	Faculty Mentor Award Postgraduate Medical Education, McMaster	2018	
	Teaching Award, Department of Pathology and Molecular Medicine	2018	
	Best Poster – Education Exhibits and the entire poster category, 2017 Annual meeting. International Skeletal Society	2017	
Dr. Rebalka, Irena	American Physiological Society Select Award	2019	
	Canadian Association for Graduate Studies Distinguished Dissertation Award Nominee	2018	
	The Louis Minden Scholarship in Health Sciences McMaster Graduate Student Association Travel Assistance Award	2017	
Dr. Ribic, Christine	McMaster University, Department of Medicine Postgraduate Teaching Award	2019-2020	
Dr. Ross, Catherine	Leadership in Patient Safety and Quality Assurance, Canadian Association of Pathologists	2018	
	McMaster University, Best Resident Platform or Poster Presentation in Hematopathology, Resident Research Day	2016-2017	
		2016-2017	
	Canadian Association of Pathologists, Donald W. Penner Award for best poster or presentation Hamilton Health Sciences, Hematopathology best presentation award	2016-2017	
Dr. Sask, Kyla	Canadian Biomaterials Society 35th Annual Meeting – Presentation Award	2019	
Dr. Scott, Angela	Academic/Research Faculty Excellence in Teaching Award, Department of Pathology and Molecular Medicine, McMaster University (competitive)	2022	

Faculty Member	Non-Salary Award	Years Held
Dr. Shali, Ari	The Annual Ari Shali Teaching Award for Outstanding Dedication and Commitment to Undergraduate Medical Students Education	2022 2020
	The Annual Ari Shali Teaching Award for Outstanding Dedication and Commitment to Undergraduate Medical Students Education.	2018
	The Osler Lecture 2018 Students' Choice Award. Michael G. DeGroot School of Medicine	
Dr. Shao, Xiao Xia Tiffany	Pathologist in Training Travel Award, USCAP	2019
	University of Washington Housestaff Association Research grant	2019
Dr. Smieja, Marek	CACMID Award for Leadership in Syndromic Infectious Disease Testing, AMMI-CACMID Annual Meeting, April 2021.	2021
Dr. Sur, Monalisa	JF Teaching Award	2021
	Resident nominated Clinical Facility Award	2022
Dr. Verhovsek, Madeleine	Nominee – Pat Mandy Inclusion Award, Hamilton Health Sciences	2021
	Clinical Teacher Award, Hematology Residency Program, McMaster University	2019
	Best Subspecialty Rotation Award – Hematology Rotation, McMaster Internal Medicine Residency Program	2018
	Best Scientific Poster, 29th Annual Residents Research Day. Department of Medicine, Supervisor to awardee	2018
	Dr. Cervi Abstract Award, THRIVE: 4th Conference on Hemoglobinopathies Canadian Haemoglobinopathy Assoc. Quality Assurance Award	2017 2017
Dr. Vincent, Yasmeen	Best Resident Award in Laboratory Medicine	2019
	Awarded 2nd place for poster presentations at the Resident Research Day, Department of Pathology and Molecular Medicine	2017 and 2019
Dr. Wainman, Bruce	Fellow of the American Association for Anatomy	2021
Dr. Warkentin, Ted	10th Annual Asif A. Chaudhry Lectureship, Fairview Hospital and Cleveland Clinic, Cleveland, OH, Apr 3, 2017	2017 2018
	Robert L. Longmire Lectureship, Scripps 38th Annual Conference: Clinical Hematology and Oncology 2018, La Jolla, CA, Feb 17, 2018	2018 2019 2022
	Dr. Stephen Garnett Distinction Award, Medical Staff Association, Hamilton Health Sciences (HHS), Jun 21, 2018	
	Distinguished Speaker Series—Stephenson Cancer Center / The University of Oklahoma, Oklahoma City, OK, Jun 7, 2019	
	Pamela Hearn Isom Lecture—Simmons Cancer Centre, UT Southwestern Medical Center, Dallas, TX, 13 May, 2022	
Dr. West-Mays, Judith	Department of Pathology and Molecular Medicine Excellence in Teaching award, Research Educator, McMaster University	2021
Dr. Zeller, Michelle	Clive Kearon Mid-Career Award, Department of Medicine, McMaster University (Jan 2022-2025)	2022-2025
	Department of Medicine Annual Award 2021 for Associate Professors	2021
	Quality and Patient Safety Internal Career Award, Department of Medicine, McMaster University (2015-2017)	2015-2017

Recruitment / Departures

New recruitment to academic positions occurs in conjunction with expansion and renewal of institutes, centres, programs, and our hospital partner clinical operations to meet our research, educational and clinical goals and is consistent with the Department's overall vision and strategic plan.

Our ability to recruit new research and teaching faculty is closely tied to the retirement of existing faculty and with expansion of educational programs. PMM leads the recruitment within our Anatomy and Molecular Medicine Division, while recruitment of clinical laboratory physicians and scientists, funded by the hospitals, is done in conjunction with the HRLMP.

All new recruits to the Department (both research and clinical) are required to attend a new faculty orientation meeting (described above) with key members of our Department shortly after their arrival at the University. When they arrive, the Chair officially welcomes

them to the Department and discusses the mutual expectations and responsibilities from the faculty member and from the Department. The Director of Administration/Finance Manager advises the new recruit on the organization of the Department, benefit and pension plans, and the requirements associated with managing any funding accounts under their name. They are also advised on human resource policy, educational trust funds (professional development fund), and assists them in obtaining ID badges and email/internet/library privileges, etc.

The Department is committed to ensuring that the principles of Equity, Diversity, and Inclusion are at the forefront of all our hiring practices. PMM now has two Employment Equity Facilitators and most of our faculty members have participated in EDI training. Lisa Brenn, Director of Administration, works with hiring committee members to ensure that EDI standards are employed.

Anatomy and Molecular Medicine Division *Faculty Departures*

Faculty Member	Year	Reason
Dr. Ali Ashkar	2021	Transferred to Dept. of Medicine
Dr. Dawn Bowdish	2021	Transferred to Dept. of Medicine
Dr. Jonathan Bramson	2021	Transferred to Dept. of Medicine
Dr. Amy Gillgrass	2021	Transferred to Dept. of Medicine
Dr. Jordana Manel	2021	Transferred to Dept. of Medicine
Dr. Charu Kaushic	2021	Transferred to Dept. of Medicine
Dr. Brian Lichty	2021	Transferred to Dept. of Medicine
Dr. Karn Mossman	2021	Transferred to Dept. of Medicine
Dr. Carl Richards	2021	Transferred to Dept. of Medicine
Dr. Anthony Rullo	2021	Transferred to Dept. of Medicine
Dr. Yonghong Wan	2021	Transferred to Dept. of Medicine
Dr. Zhou Xing	2021	Transferred to Dept. of Medicine
Dr. Alexander Ball	2020	Retired
Dr. Kenneth Rosenthal	2020	Retired
Dr. Peter Whyte	2020	Retired
Dr. Martin Stampfli	2020	Retired
Dr. Laurie Doering	2018	Retired
Dr. Ziad Solh	2017	Resigned

Anatomy and Molecular Medicine Division *Faculty Recruitments*

Faculty Member	Year	Area of Focus
Pending	2022	Anatomy/Neuroanatomy Teaching
Pending	2022	Anatomy Teaching (3-year CLA)
Pending	2022	Teaching in BHSc and Midwifery (3-year CLA)
Dr. Aftab Taiyab, Assistant Professor	2021	Ocular research identifying genes and molecular mechanisms involved in the development and differentiation of the eye, that when dysregulated may lead to blinding ocular disease.
Dr. Amy Gillgrass, Assistant Professor	2018	Cancer and immunology researchers focus on harnessing the immune system to help fight cancer.
Dr. Ziad Solh, Assistant Professor	2017	Development of an independent research program specifically focused on pediatric transfusion medicine
Dr. Anthony Rullo, Assistant Professor	2017	Research aimed at integrating the tools of chemical biology and immunology for the development of novel strategies focused on overcoming tumor immune evasion mechanisms as well as potent anti-cancer immunotherapeutics and diagnostic tools.
Dr. Angela Scott, Assistant Professor	2017	Development of a research program focusing on the underlying mechanisms of neural plasticity following neurological stress.

Clinical Divisions (anatomical pathology, clinical pathology) *Recruitment / Departures*

A healthy relationship that speaks to both the university's academic mission and our teaching hospital's clinical mission is crucial in sustaining and advancing effective recruitment and job retention. The Hamilton Regional Laboratory Medicine Program is one of our key partners who work closely with our Department in recruiting new laboratory medicine faculty. Strengthening this relationship was identified as a key strategic planning goal. One component of this has been the development of an integrated approach to align our respective recruitment processes. This work has seen a meaningful change in how clinical positions for Pathology and Molecular Medicine are posted. Previously, the posting of clinical positions was siloed on the hospital side, which is expected as they are the employer. Now, through discussion and collaboration, it has been agreed to also post clinical positions through MOSAIC at McMaster. An immediate take-away is adherence to PMM's commitment to the principles of Equity, Diversity, and Inclusion for all our faculty recruitments. Another, less obvious sequelae are better academic oversight in reviewing potential applicants. The process also includes national and international job posting, and the establishment of a Search Committee, chaired by the Discipline Director. Members are the Chair of the Department or delegate, the Associate Chair Education, the Chief, and faculty as appropriate for each position. Searches are currently underway for the recruitment of three anatomical pathologists with subspecialty expertise in breast, gynecologic, skin, and gastrointestinal pathology, a Director of the Stem Cell Processing Laboratory, a Director of Transfusion Medicine, and a medical microbiologist.

Clinical Divisions Faculty Departures

Faculty Member	Year	Reason
Dr. Phillip Williams	2022	Resigned
Dr. Sepideh Mehravaran	2022	Resigned
Dr. Catherine Ross	2022	Retired
Dr. Jay Maxwell	2022	Resigned
Dr. Fiona Smaill	2022	Retired
Dr. Stephen Hill	2021	Retired
Dr. Dusan Lukic	2021	Retired
Dr. Linda Kocovski	2020	Resigned
Dr. Phillip Williams	2020	Resigned
Dr. Mary Anne Brett	2020	Resigned
Dr. John Fernandes	2019	Deceased
Dr. Vidhya Nair	2019	Resigned
Dr. Jane Turner	2019	Resigned
Dr. Martin Hycza	2018	Resigned
Dr. Allison Edgecombe	2017	Resigned
Dr. Boleslaw Lach	2017	Retired

Clinical (HRLMP) Faculty Recruitments

Dr. Ashish Rajput	2022	Hematopathologist
Dr. Alice Graham	2022	Cardiovascular Pathologist
Dr. Phillip Williams	2022	Anatomical Pathologist
Dr. Cynthia Ellison	2022	Director of HLA Laboratory
Dr. Ivica Josko	2022	Clinical Chemist Laboratory Scientist
Dr. Tiffany Shao	2021	Renal Pathologist
Dr. Pooja Vasudev	2020	Breast Pathology and Breast Biomarkers
Dr. Darci Butcher	2020	Clinical Laboratory Scientist in Genetics
Dr. Jay Maxwell	2020	Cardiovascular Pathology
Dr. Mary Anne Brett	2019	Cardiovascular Pathology
Dr. Clinton Campbell	2019	Hematopathologist
Dr. Jay Maxwell	2019	Forensic Pathologist
Dr. Ipshita Kak	2018	General Pathology
Dr. Linda Kocovski	2017	Forensic Pathology
Dr. Jian Qiang Lu	2017	Neuropathologist
Dr. Suzanne Demczuk	2017	Clinical Laboratory Scientist in Genetics

Staff

Administrative support for all aspects of the Department is led by the Director of Administration and the core departmental administrative staff, including the Administrator(Operations Support) Erin Volk, Jane Goad, Administrative Assistant to the Chair and Academic Coordinator (faculty recruitment, tenure and promotion), Rebecca Samaras, Administrative Assistant (DOA, Medical Science undergraduate program development lead and Associate Chairs support) and three Senior Education Program Assistants Erin Alderson, Gina Furlong and Giulia Spadafora who support our Post Graduate laboratory medicine programs medicine programs and the Program Directors.

Research staff listed below support the research mission and report directly to the PI.

Staff	Full-time		Part-Time		Total Staff		
	Operations	Research	Operations	Research	Operations	Research	Total
UNIFOR	5.00	11.00		3.75	5.00	14.75	19.75
TMG	2.00				2.00		2.00
Interim			0.25	16.12	0.25	16.12	16.37
Total	7.00	11.00	0.25	19.87	7.25	30.87	38.12



Financial Structure

PMM ensures all financial account transactions adhere to the University's policies and procedures, and internal/external reporting requirements of the funding agencies.

Prior to fiscal year 2021 our funding was based on a \$4.1 million operating budget with an additional \$2 million of the MUFA faculty members salary and benefit costs being supported by internal and external revenue sources, including Dean's contributions, education services recoveries, endowed chair awards, career awards and CRC chairs. With the implementation of the new budget model PMM's budget has been reduced from \$4.1 million to a projected \$1.6 million by FY2025 (the new budget roll-out included a limit of a 15% reduction in budget per year, so the full effect is delayed to FY2025), representing a 60% reduction in the budget. Additionally, most Faculty salary recoveries were removed in the new budget model, so the actual reduction in funding is greater than 60%.

By far the largest budget item is MUFA faculty salaries within our Division of Anatomy and Molecular Medicine, therefore financial solvency required a reduction in MUFA faculty within the Department. This was achieved by moving 12 MUFA faculty (all members of the McMaster Immunology Research Centre) to the Department of Medicine and reducing the overall number of MUFA faculty by not replacing some retirements. Additional cost savings were achieved by reducing administrative staff and office footprint. These changes led to a large, immediate decrease in costs, which when combined with the phased in budget reduction, created a temporary budget surplus for FY2021-23. We can maintain our current costs by using up surpluses from these years, but if our revenue does not increase, by fiscal year 2025 the Department will not be sustainable. This is a significant risk to succession planning and recruitment of new faculty members to PMM. In turn this risk translates to the greater FHS community and the education programs because as individuals retire, we cannot afford to replace them. PMM is currently working with the education services leadership team to review the Anatomy and Molecular Medicine division's teaching activities and funding.

Approximately 80% of our full-time faculty members are clinical faculty who are outside paid by the Hamilton Regional Laboratory Medicine Program (HRLMP), while 20% are non-clinical (includes the remaining MUFA faculty).

FY2022 Actual 000s	Operating Budget	Overhead	PG & Fellowship
Funding	2,474	78	302
Transfers	94	28	
Carry Forward	1,612	111	437
In-Year Revenue	2,568	106	302
Total Revenue	4,180	217	739
Expenses			
Faculty Salaries and Benefits	1,525		109
Support Salaries and Benefits	270	13	132
Non Salary Expenses	69		54
In-Year Expenses	1,864	13	295
In-Year Surplus (Deficit)	704	93	7
Total Surplus (Deficit)	2,316	204	444



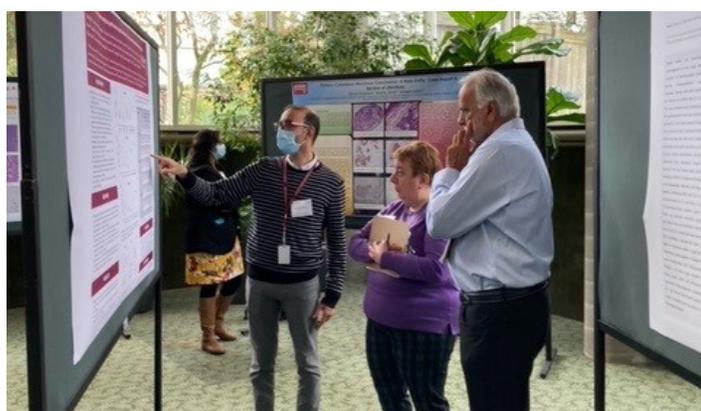


Educational Activities

Our Department has been busy developing new teaching curriculum, creating new courses and creating new fellowship programs. We have been working to see our educational mission and vision come to fruition. To this end, we have improved the way we capture our teaching contributions and increasing transparency around teaching. We have introduced new teaching awards for faculty to recognize their hard work in Education and have provided continuing Education for our faculty, including equity, diversity, and inclusion training via ZOOM during the pandemic. We continue to build on our assessment of faculty teaching and discussions around teaching contributions in annual review meetings. Many of our faculty continue to be highly involved in curriculum development on a national level through the Royal College of Physicians and Surgeons, the Canadian College of Medical Genetics, and the Canadian Academy of Clinical Biochemistry.



The pandemic has posed significant educational and research challenges to our faculty; however, we have approached this as an opportunity to teach in new ways and develop new curricula making our training programs even stronger. Several of our residency programs have successfully transitioned to competency-based training and others are in the process of making this change. On October 25, 2022, we hosted our first in person Resident research day since the start of the pandemic with great success. Faculty and trainees came together at the Royal Botanical Gardens to celebrate the research success of our learners.



Laboratory Medicine Resident Research Day, 2022



2022 Award Winners

Best Platform Presentation – Anatomical Pathology	Ahmad Shah
Runner up Best Platform Presentation – Anatomical Pathology	Faiha Fareez
Best Platform Presentation – Clinical Pathology	Charlotte Fuller
Best platform – Fellowship	Alex Bourguinon
Best poster – Anatomical Pathology	Dhuha Al-Sajee
Runner up Best Poster – General Pathology	Judah Glogauer
Best Poster – Clinical Pathology	Adam Komorowski
Runner up Best Poster – Clinical Pathology	Basma Ahmed
Best Poster – Fellowship	Kazem Nouri
Chief’s Award for Best Quality Assurance Project – Anatomical Pathology	Nikfar Nikzad
Chief’s Award for Best Quality Assurance Project – Clinical Pathology	Adam Komorowski
John Fernandes Award – Best Overall Study That Has Potential for Publication or Improving Patient Care	Brody Duncan

Despite the challenges our Department has faced, we continue to thrive! This year we launched a new Bachelor of Health Sciences course called “Introduction to Medical Laboratory Sciences” to introduce second year undergraduate students to careers in laboratory Medicine.

Undergraduate Education

Education Program in Anatomy



Dr. Bruce Wainman

The Education Program in Anatomy, under the leadership of Dr. Bruce Wainman, provides four distinct facilities for Education and greater than 2,000 students a week pass through our two facilities in Hamilton as well as laboratories in Niagara and Waterloo regions. The program has a full human body donor program that provides critical learning resources for all facilities. As well as Education, the program carries out research in numerous fields including virtual and augmented reality in anatomy learning, interprofessional Education, optimal tissue preparation for surgical skills training and clinical anatomy.

Bachelor of Health Sciences Program



Dr. Stacey Ritz

Under the leadership of Dr. Stacey Ritz, teaching activity in the BHSc (Hons) Program has grown by over 50% since 2015, with over 20 new mandatory and elective courses added spanning the entire range of health disciplines. BHSc has also launched the innovative Praxis Pathways Curriculum, a 4-year developmental curriculum incorporating critical analysis and reflexivity, collaboration in community, information literacy skills, along with self-knowledge and wellness elements. She has initiated several new concurrent certificate programs that students from any program can complete, including Biomedical Sciences, Health Humanities and Social Sciences, and Immunology, Microbiology, and Virology. The BHSc Program continues to be a highly regarded and sought-out program, with over 7000 applicants in the most recent admissions cycle (an increase of nearly 50% since 2018 and double the number of applicants since 2015). In 2020, she shepherded the implementation of the Equitable Admissions for Black Applicants pathway, which has been highly successful in increasing the representation of Black-identifying students in the Program.

Undergraduate MD Program



Dr. Miranda Schell

Our faculty are actively involved in the training of medical students through McMaster. Contributions include teaching in large and small group settings, direct hands-on teaching in Anatomy, as Clinical examination preceptors and as clinical supervisors. A special acknowledgement goes to Dr. Miranda Schell for completing a term as Pathology Longitudinal Planner for the MD program. This position has now been taken over by Dr. Cheryl Main.

Graduate Education

Medical Sciences Graduate Program



Dr. Judy West-Mays

Dr. Judy West-Mays successfully led the Medical Sciences Graduate Program through an Institutional Quality Assurance Process (IQAP) review. Reviewers noted "A significant strength of the Program is its unique emphasis on bench-to-clinic research and strong integration and cooperation among basic scientists, clinician-scientists, and clinicians. The Program attracts a strong corpus of domestic and international students and is supported by internationally recognized and well-funded faculty. The Program demonstrates an excellent training environment as evidenced by an impressive record of student/supervisor publications and presentations."

Postgraduate Medical Education

Pathology and Molecular Medicine hosts four residency programs accredited by the Royal College of Physicians and Surgeons, one Royal College Area of Focused Competency (AFC) program, two nationally accredited fellowship programs, and four clinical fellowship programs. All four clinical fellowship programs have been launched since 2020.

Unfortunately, the province closed the forensic pathology unit in Hamilton in 2020, which meant that our Royal College training program in Forensic Pathology had to be shut down as well.

Learners in the programs specifically managed by the Department of Pathology and Molecular medicine for the reporting period are listed in the tables under each program.

Anatomical Pathology



Dr. Snezana Popovic

The Anatomical Pathology program at McMaster University strives to achieve excellence to guide decisions for best patient care and management and advance frontiers of patient care by integrating surgical and molecular pathology with clinical specialties. The Department of Pathology and Molecular Medicine at McMaster University has a long history of training outstanding anatomical pathologists. The program has graduated 15 residents with 100% passing rate at the Royal College exam. Some of graduates completed prestigious Canadian or US fellowships including dermatopathology, hematopathology, genitourinary and forensic pathology. They all have successful careers practicing in academic centers such as Ottawa, Vancouver, Toronto, or other Ontario community hospitals. The program successfully transitioned to a competency based medical Education on July 1, 2019. There are currently 20 residents in the program. Our residents have presented their research projects, and research awards locally, nationally, and internationally.

Our mission is to prepare academic anatomical pathologists with in-depth training in scholarship, research, leadership, and clinical practice to allow them to succeed in academic or community settings. The Department is aiming to provide additional career opportunities for our graduates by offering fellowship training in one of the subspecialty pathology areas.

2017/18	2018/19	2019/20	2020/21	2021/22
Alghamdi, Sarah	Al-Sajee, Dhuha	Al-Sajee, Dhuha	Al-Sajee, Dhuha	Al-Sajee, Dhuha
Alrawaf, Sarah	Alghamdi, Sarah	Alghamdi, Sarah	Alghamdi, Sarah	Alghamdi, Sarah
Brain, Ian	Alrawaf, Sarah	Alrawaf, Sarah	Alrawaf, Sarah	Alrawaf, Sarah
Brett, Mary Anne	Brain, Ian	Courteau, Brigitte Christine	Berzins, Alison	Berzins, Alison
Carvalho, Michael	Courteau, Brigitte Christine	Elmaghraby, Nermine Mostafa	Fournier, Jeffery	Fournier, Jeffery
Courteau, Brigitte Christine	Elmaghraby, Nermine Mostafa	Ho, Man Hymn Edwin	Hanna, Jessica	Hanna, Jessica
Elmaghraby, Nermine Mostafa	Ho, Man Hymn Edwin	Jian, Charles	Ho, Man Hymn Edwin	Ho, Man Hymn Edwin
Farnell, David Anthony	Jian, Charles	Kisiel, Marta	Jian, Charles	Jian Charles
Ho, Man Hymn Edwin	Kisiel, Marta	MacColl, Christine	Kisiel, Martha	Kisiel, Martha
Kisiel, Martha	MacColl, Christine	Mathew, Joseph Gabriel	Mrair, Faisal	Mrair, Faisal
Lemieux, Carolyne Elizabeth	Mathew, Joseph Gabriel	Nikzad, Nikfar	Nikzad, Nikfar	Nikzad, Nikfar
MacColl, Christine	Ramadan, Soha Syed	Ramadan, Soha Syed	Ramadan, Soha Syed	Ramadan, Soha Syed
Mathew, Joseph Gabriel	Shah, Ahmed Syed	Shah, Ahmed Syed	Zhang, Bifeng	Zhang, Bifeng
Ramadan, Soha Said	Zhang, Bifeng	Chandna, Nicholas		Fareez, Faiha
Zhang, Bifeng		Wei, Sunny		Bidla, Gawa
		Zhang, Bifeng		Yousef, Peter

Clinical Chemistry Fellowship

The Clinical Chemistry Fellowship program held a retreat in 2019 to identify several areas of improvement. As a result, new rotations have been created including genetics, quality management, mass spectroscopy, and point of care. Learners in their last year obtain guided leadership experience by taking the role of site biochemist for a small laboratory. Five trainees have graduated from the program since the last report. The program goals for the coming years include developing a new curriculum based on a new syllabus from the Canadian Academy of Clinical Biochemistry in 2023 which will lead to further scope of training and manner of training including the implementation of Competence by Design. There will also be expansion of leadership and teaching experiences and development of Areas of Distinction with intensity of activities (knowledge, teaching, scholarship) in a specific area of interest.

2017/18	2018/19	2019/20	2020/21	2021/22
Ivica, Josko	Ivica, Josko	Ismail, Ola	Petryayeva, Eleonora	Lafreniere, Matthew
Kyle, Barry David	Ismail, Ola	Petryayeva, Eleonora	Lafreniere, Matthew	Nouri, Kazem

Coagulation Fellowships



Dr. Cathy Hayward

Our Department offers two popular fellowship programs related to coagulation that, under the leadership of Dr. Cathy Hayward have been fully recruited since their launch two years ago:

1. a fellowship in advanced clinical and laboratory coagulation, designed for adult hematology and pediatric hematology oncology program graduates, and
2. a fellowship in advanced laboratory coagulation, designed for hematopathologists.

The first graduates are expected to complete their training this year with one taking over the running of coagulation laboratory services at the largest French hospital in Montreal and the other taking on a role now an Acting Consultant in Pathology and Clinical Laboratory Medicine Administration at King Fahad Medical City, Riyadh, Saudi Arabia. These graduates have been extremely productive in our program, with several publications, presentations and completed research projects and awards at conferences and resident research day to show as a result. Interest in the program continues to build with new fellows starting in a few months and the program has already filled its positions for 2023. These coagulation programs have attracted excellent fellows who have made outstanding contributions to service, Education, and research.

2017/18	2018/19	2019/20	2020/21	2021/22
	*Program first intake of students 2020/21		Bourguignon, Alex	Bourguignon, Alex
			Altahan, Rahaf Mahmoud	Altahan, Rahaf Mahoud

General Pathology Residency Program



Dr. Ipshita Kak

The General Pathology program has successfully transitioned to a competency based medical education format with thriving CBD and traditional cohorts of residents. Two prior graduates from the program have joined PMM as faculty members. Dr. Kak is the Program Director for the program and Dr. Graham has joined as a Cardiovascular Pathologist working out of the Hamilton General Hospital. The program has graduated 10 residents who are all employed within the community around Ontario or doing fellowships. Dr. Kak intends to involve residents in education research and as ambassadors for the program at the local and national level. She is aiming to continue to grow as one of the largest general pathology programs in Canada and become an exemplary standard of CBD education.

2017/18	2018/19	2019/20	2020/21	2021/22
Dmetrichuk, Jennifer	Graham, Alice Katharine	Feltaos, Nermeen	Feltaos, Nermeen	Feltaos, Nermeen
Esmail, Safiya	Gupta, Akash	Graham, Alice Katharine	Glogauer, Judah	Glogauer, Judah
Graham, Alice Katharine	Koujanian, Serge Kajaer	Koujanian, Serge Kajaer	Graham, Alice Katharine	Graham, Alice Katharine
Gupta, Akash	Ma, Christopher Simon	Ma, Christopher Simon	Koujanian, Serge Kajaer	Moodley, Jinesa
Koujanian, Serge	Matea, Florentina Nadia	Matea, Florentina Nadia	Moodley, Jinesa	Pawlowicz, Bernard
Kajaer Ma, Christopher Simon	Memon, Sadaf Shaukat	Moodley, Jinesa	Pawlowicz, Bernard	Rai, Harpreet
Matea, Florentina Nadia	Moodley, Jinesa	Pawlowicz, Bernard	Rai, Harpreet	Sayed, Shahistha
Memon, Sadaf Shaukat	Pawlowicz, Bernard	Rai, Harpreet	Sayed, Shahistha	Wentzell, Shauna
Moodley, Jinesa	Rai, Harpreet	Song, HyoChan (Bryan)	Wentzell, Shauna	Srivastava, Shivali
Pawlowicz, Bernard	Song, HyoChan (Bryan)	Wentzell, Shauna		Ray, Ayush
Wentzell, Shauna	Wentzell, Shauna			

Genetics Fellowship



Dr. Suzanne Demczuk

The genetics program has had a leadership change with Dr. Elizabeth McCready finishing her term as Program Director and Dr. Suzanne Demczuk taking over this role. The program has introduced an Assistant Program Director role, which is currently held by Dr. Daria Grafodatskaya. McMaster is one of the few fully accredited sites for the Canadian College of Medical Geneticists (CCMG), and includes streams for Genetic and Genomic Diagnostics, Biochemical Genetics (laboratory), Biochemical Genetics (clinical), and Clinical Genetics. The program has graduated eight fellows in the past 5 years. The future plans for the program include renewing CCMG Training Centre Accreditation for the McMaster site, completing an exit survey to evaluate the program and reviewing the application process and role of supervisors within it.

2017/18	2018/19	2019/20	2020/21	2021/22
Schenkel, Laila	AlShammari, Muneera	*Butcher, Darci	*Butcher, Darci	Vasli, Nasim
Selevarajah, Shamini	Arts, Heleen	Schenkel, Laila	Vasli, Nasim	*Landry, Nfonsam
Arts, Heleen	*Butcher, Darci	Ito, Yoko	Ito, Yoko	*Butcher, Darci
AlShammari, Muneera	*Grafodatskaya, Daria	*Landry, Nfonsam	*Landry, Nfonsam	
*Grafodatskaya, Daria	Schenkel, Laila			
	Selvarajah, Shamini			

Medical Biochemistry Residency and Fellowship Program



Dr. Gui Paré

The Medical Biochemistry program is immensely proud of their trainees and of the leadership roles they are taking. Three residents have completed the program under the leadership of Dr. Pare since the last report. Dr. Pare states “Our best success is the success of our trainees.” For the future, the program hopes to keep evolving to prepare trainees for advances in Laboratory Medicine. A Medical Biochemistry Fellowship has now been launched and is hoping to enroll their first fellow in 2023.

2017/18	2018/19	2019/20	2020/21	2021/22
Martin, Janet	Martin, Janet	Martin, Janet		
Sarfraz, Mohammad Omair				

Medical Microbiology Residency and Fellowship Program



Dr. Daniela Leto

The Medical Microbiology (MM) program implementation structured and organized virtual curricula during the pandemic and has now formalized a resident wellness committee to help support residents through stressful times. The MM residents have been actively involved in a collaborative resident research group leading to multiple high yield publications. Under the leadership of Dr. Leto, 8 residents graduated from the program, and all have gone on to securing excellent MM career opportunities in both community and academic centers across Canada. The program is working to transition their curriculum to competency-based Education in July 2024. A new Medical Microbiology Fellowship was launched in 2020 and has had one fellow complete training.

2017/18	2018/19	2019/20	2020/21	2021/22
Alzahrani, Ahmed Jamaan	Alzahrani, Ahmed Jamaan	Duncan, Brody	Fuller, Charlotte	Alzahrani, Ahmed Jamaan A.
Hadzic, Amir	Duncan, Brody	Hadzic, Amir	Duncan, Brody	Duncan, Brody
Rahman, Mashrur	Hadzic, Amir	Komorowski, Adam	Komorowski, Adam	Fuller, Charlotte
Vincent, Yasmeeen	Rahman, Mashrur	Vincent, Yasmeeen	Vincent, Yasmeeen	Hall, Clayton
	Vincent, Yasmeeen	Li, Xena	Li, Xena	Komorowski, Adam
				Li, Xena
				Benoit, Marie-Eve

Transfusion Medicine AFC Program



Dr. Michelle Zeller

The Transfusion Medicine (TM) AFC program provides teaching by Transfusion Medicine experts from across Canada and includes rich learning experiences through Canadian Blood Services. Our trainees have opportunities to participate in and lead exciting research with mentorship and support through McMaster Centre for Transfusion Research. Since the inception of the TM AFC at McMaster (in 2011), we have successfully trained 9 individuals who now hold leadership roles in Transfusion Medicine across Canada and internationally. There are 2 current trainees in the program, and 2 more who will be starting in 2023.

As one of three TM AFC programs in the country, we are working together to provide leadership, Education, and research opportunities to trainees from a broad range of specialties including hematology, anaesthesiology, and pathology. We hope to continue to grow the next generation of TM leaders in Canada.

2017/18	2018/19	2019/20	2020/21	2021/22
Morin, Pierre-Aurele	Morin, Pierre-Aurele	Gupta, Akash	Gupta, Akash	Batarfi, Khalid
Ning, Shuoyan	Ning, Shuoyan	Dhabangi, Aggrey	Batarfi, Khalid	Laureano, Marissa
		Batarfi, Khalid	Laureano, Marissa	Alharbi, Ahmad



Dr. Cheryl Main
Associate Chair of Education

We are very proud of the educational accomplishments of our Department, and I would like to extend my gratitude to our faculty members for their hard work and dedication to our educational program.



Research Activities

The Department of Pathology and Molecular Medicine has outstanding scientists with basic, translational, and clinical research expertise. The Department is administratively divided into three divisions, Clinical Pathology, Anatomical Pathology, and Anatomy & Molecular Medicine, created to increase coordination and communication among the many research programs within the Department. They also serve to maximize resources and raise awareness of our expertise in several areas. The integration of the academic Department and the Hamilton Regional Laboratory Medicine Program provides opportunities for scientists to conduct research that optimizes patient care and champion innovative ideas.

Our scientists operate geographically in multiple locations across the city of Hamilton and are cross-appointed in various departments and collaborative research institutes.

The pursuit of excellence unites us, with the goal of enhancing our academic and clinical collaboration, leading to improved clinical care and training, and ultimately improving patient health and outcomes.

The collaborative relationship with the HRLMP represents mutually beneficial and well-defined opportunities to achieve a common goal. Our goal is to seek innovative solutions to improve patient care and be cognizant of health care costs. We aspire to be leaders of innovation, exploration, and collaboration within the faculty, nationally and internationally. Our research is conducted with an EDI lens and thereby provides opportunities for all members of PMM and HRLMP. Our faculty contribute to the University's strategic research plan, which includes eight cross-disciplinary and interrelated themes by addressing the growing burden of chronic disease and focusing on bench-to-bedside-to-community research.

Dr. Fiona Smail, Professor Emeritus, Pathology and Molecular Medicine, infectious disease specialist, is leading the clinical trial of the next-generation COVID-19 vaccines, which are delivered by inhaled aerosol. Fiona exemplifies the focus of our Department, which supports transitional research endeavours from bench to bedside.



Our faculty are outstanding scientists—in genomics, immunology, microbiology, virology, genetic make-up, molecular biology, cancer, cardiovascular disease, hemostasis and thrombosis, gastroenterology, hematology, infectious diseases, inflammation, molecular genetics, retinal disease, pain, respirology disease, and vaccine development.

Our translational scientists collaborate in many of the research institutes at McMaster, such as the Farncombe Institute, the Michael G. DeGrootte Institute for Pain Research and Care, the Population Health Research Institute, and the Population Genomics program, that provide crucial evidence of health outcomes.

Dr. Gurmit Singh, the Associate Chair of Research provides leadership for the Department’s research mission. The incumbent works closely with the Chair and the Associate Chairs of Education and clinical activities.

Outstanding research conducted by residents and fellows is supported by a departmental resident research grant program and research day. This activity enhances our academic and clinical collaboration leading to improved clinical care and training. Research provides an enhanced work experience and job satisfaction for our faculty.

In 2021 our McMaster Immunology Research Centre faculty members were transferred to the Department of Medicine. This transition can be seen in the reduction of our total research dollars effective 2021/2022.



A major area of **Dr. Khan’s** research over the last five years is to understand what role gut serotonin has in the pathogenesis of inflammatory bowel diseases (IBD) to develop a better therapeutic strategy for IBD. In recent studies, the Khan lab has shown that gut serotonin plays a key role in regulating gut microbial composition, influencing colitis susceptibility. Results have also shown that increased serotonin in the gut inhibits autophagy (cellular housekeeping), resulting in altered microbiota composition and increased susceptibility to experimental colitis and Crohn’s disease (a primary form of IBD). In addition to work in colitis, the lab has shown an important role of serotonin in obesity and related metabolic diseases, including fatty liver disease and insulin resistance



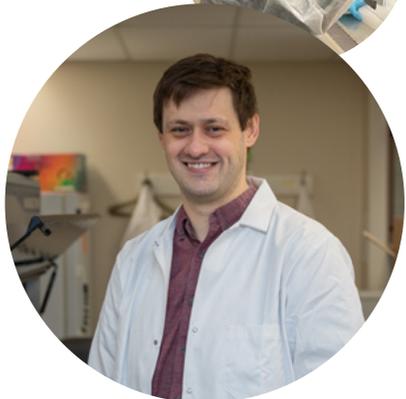
Making a diagnosis in pathology is becoming increasingly complex, relying on many different information sources.

There is also a critical shortage of laboratory physicians such as pathologists, and a growing incidence of cancers worldwide.

Collectively, these factors may lead to adverse patient outcomes. To help address these issues, Dr. Campbell and his diverse team of pathologists, clinicians and computer scientists are using artificial intelligence (AI) and digital pathology techniques to help pathologists better diagnose blood cancers like leukemia. Rather than using AI to make diagnosis, which is the role of pathologists and clinicians, Dr. Campbell’s team are using AI to help analyze complex blood and bone marrow specimens by summarizing complex information in cells and tissue. This allows pathologists to use AI to support the overall diagnostic process. Because pathologists are central to the design of this technology, it is highly focused on improving diagnosis around practical, realistic pathology workflow problems. Dr. Campbell and his team are optimistic that the AI tools they are developing will eventually support safer and more accurate diagnosis, and better patient outcomes

Summary of Funding by Department - Overview

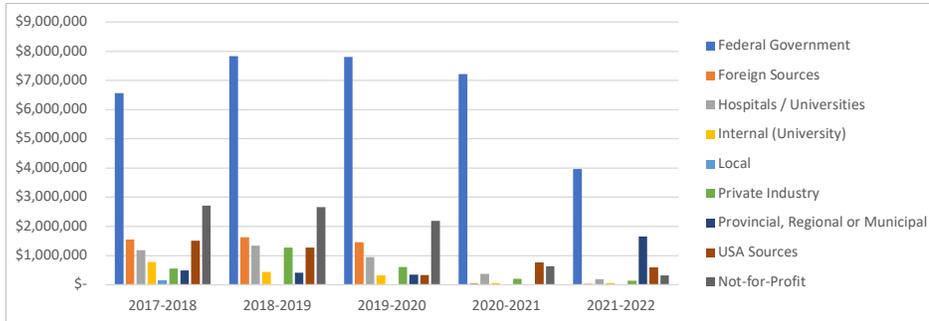
	17/18	18/19	19/20	20/21	21/22
\$ Awarded - CIHR	48,697,324	45,090,517	50,675,613	75,994,811	56,811,924
	-8.7%	-7.4%	12.4%	50.0%	12.1%
	decrease	decrease	increase	increase	decrease
\$ Awarded - All Sources	138,022,942	140,169,024	133,286,743	180,548,245	182,952,181
	-2.8%	1.6%	-4.9%	35.5%	37.3%
	decrease	increase	decrease	increase	increase
\$ Awarded - by Department					
FHS Anaesthesia	3,729,635	3,628,446	4,439,641	4,437,514	1,897,151
FHS Biochemistry & Biomedical Sciences	15,616,175	23,256,942	17,365,814	20,451,484	13,546,991
FHS Family Medicine	2,726,960	2,456,239	3,039,592	2,721,744	3,853,995
FHS General Administration	17,429,590	19,048,716	14,162,318	20,647,828	24,144,994
FHS Health Research Methods, Evidence, and Impact	18,626,101	17,465,512	18,640,545	29,413,355	46,009,116
FHS Medicine	33,708,385	30,010,793	31,057,934	56,898,368	43,672,066
FHS School of Nursing	4,061,983	3,164,443	3,964,665	5,895,195	6,513,022
FHS Obstetrics & Gynecology	1,500,668	1,414,174	1,898,612	1,738,983	2,822,805
FHS Oncology	4,389,799	4,085,753	4,454,805	4,054,234	5,419,610
FHS Pathology & Molecular Medicine	15,493,853	16,881,912	14,010,496	9,309,009	6,981,976
FHS Pediatrics	4,607,541	3,851,698	3,960,883	3,338,152	3,650,656
FHS Psychiatry & Behavioural Neurosciences	6,948,803	5,661,928	7,265,479	10,350,138	12,215,323
FHS Radiology	118,793	93,527	78,232	36,808	24,000
FHS School of Rehabilitation Sciences	1,583,610	2,019,957	2,808,743	3,405,580	5,046,425
FHS Surgery	7,481,047	7,128,986	6,138,986	7,849,852	7,154,052
TOTAL	138,022,942	140,169,024	133,286,743	180,548,245	182,952,181



Dr. Marek Smieja's research lab has worked on diagnostic test development for respiratory and gastrointestinal infections, and translated these into clinically useful tests for patient diagnosis. We continue work on improving self-collection and viral quantification to help understand the epidemiology of infections, and to develop tools for assessing prevention and treatment. Pictured above are members of the lab, Dr. David Bulir, who developed high-throughput robotic testing for COVID, and the McMaster Molecular Medium used for specimen transport. Sarah Marttala, a researcher in the Smieja/Bulir research lab, doing PCR setup from specimens. Jodi Gilchrist, who is the Research lab Manager and a part-time PhD student in Health Research Methodology. Jodi was recently awarded the research staff recognition award by Research St. Joe's.



Pathology and Molecular Medicine funding by sponsor type



Dr. Aftab Taiyab

is a trained cell, molecular and developmental biologist and the newest researcher to join the department. As an early career vision scientist, to further develop his understanding of eye formation he accepted a postdoctoral fellowship at McMaster under the supervision of Dr. Judith West-Mays (2014-2017). Under Judy’s supervision and as his mentor, Aftab expanded upon his research and is now pursuing his own independent research program with a threefold focus on: 1) understanding the mechanisms and role of neural crest cells in ocular anterior segment development and associated diseases including glaucoma and corneal opacity; 2) understanding the biomechanical signaling mechanisms during ocular lens fibrosis leading to posterior capsular opacification (PCO) and 3) the role of fibroblast growth factor 8 in the development of tumors of the ocular adnexa. The long-term goal is to develop strategies to counter the above-mentioned ocular diseases using the knowledge gained from understanding the basic biology of the onset and progression of these diseases.



Jennifer Tsang, a fourth-year Honours Life Science student, works in the **Mark Loeb Research Group (MLRG)** lab repository. In the past five years, the MLRG team has been conducting national and international influenza vaccine randomized trials and cohort studies on both influenza and COVID-19



Dr. Bonert has used local clinical data to understand and reduce diagnostic discordance in anatomical pathology. He has also embraced the idea that data will likely play an increasing role in the allocation of resources and the measurement of academic productivity; pictured above is a cover image from “The Pathologist” magazine (Jan/Feb 2020) for an article by Dr. Bonert and Dr. Naqvi that examined ~8,000 “United States and Canadian Academy of Pathology” abstracts, the ~20,000 abstract authors and over 100 institutions.



Dr. Catherine Hayward is well known for her research on the pathogenesis of inherited platelet function disorders, with the important recent discovery that “gene rewiring” transforms platelets into “clot busters” in Quebec platelet disorder. As part of initiatives to promote equity, diversity and inclusion, Cathy has taken on international leadership roles in organizations that support physicians and pathologists from resource-poor countries to gain valued training in laboratory medicine. The photo shows Cathy at the World Association of Societies of Pathology and Laboratory Medicine meeting in Uruguay, with former fellows of the World Pathology Foundation Gordon Signy Fellowship Award program, who shared their valued experiences as fellowship recipients.



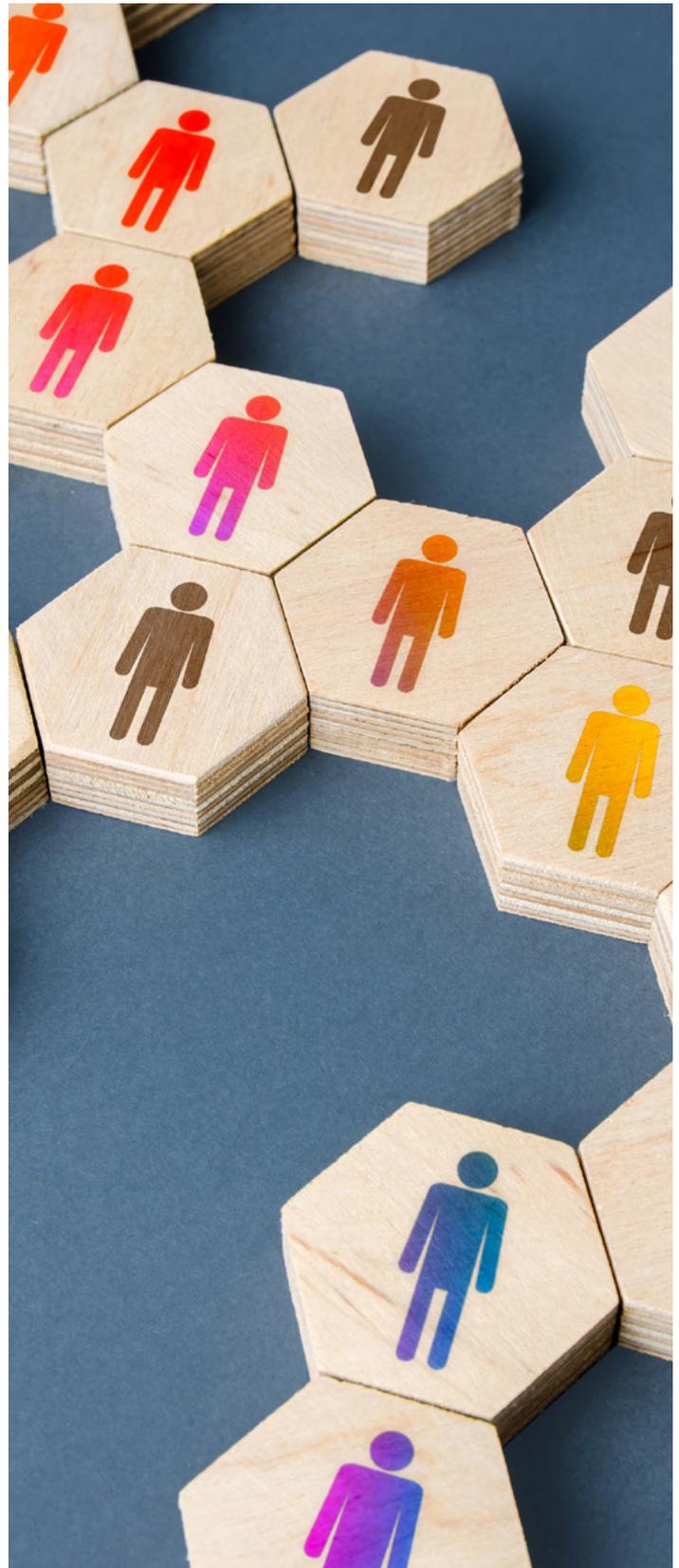
The Education Program in Anatomy is at the forefront of the development and testing of virtual reality in the service of Education. We have developed a virtual reality dissector, a smartphone-based stereoscopic anatomy tool, and numerous learning modules delivered in VR. It is not enough to have just developed these tools since we believe any innovation needs evaluation. They have also tested how useful our VR tools are for learning compared to traditional cadaveric materials and 3D printed models, as well as measured the cognitive load, the optimal size and possible cybersickness associated with VR learning to determine what leads to success in VR learning. We also have developed a world-leading interprofessional elective in cadaveric dissection.

Relationships and Affiliations

We have a close relationship with all area hospitals through our partnership with the Hamilton Regional Laboratory Medicine Program, and includes McMaster Children' Hospital, Hamilton General Hospital, Juravinski Hospital and Cancer Centre and St Joseph's Healthcare.

Our faculty members also teach undergraduate medical students at the Waterloo and Niagara Regional Campuses.

Our members maintain links with many research centres and institutes within McMaster as well as organizations external to McMaster including research granting agencies, the Ministry of Health and Long-Term Care, the Ministry of Training, Colleges and Universities, the Royal College of Physicians and Surgeons of Canada. Our faculty are members of boards and professional groups related to the specialty areas in which they practice or do research.



Strengths, Weaknesses and Opportunities

Strengths

Talented faculty members with diverse specialties who are committed to excellence in Education, research, and clinical service.

Highly effective and efficient administration team. The lean team of staff ensure all operations and education activities are supported and try to reduce the burden on the faculty members as best we can.

Relationship with HRLMP, our hospital partner. The leadership teams work closely together and have tried to align strategic missions where we can

Weaknesses

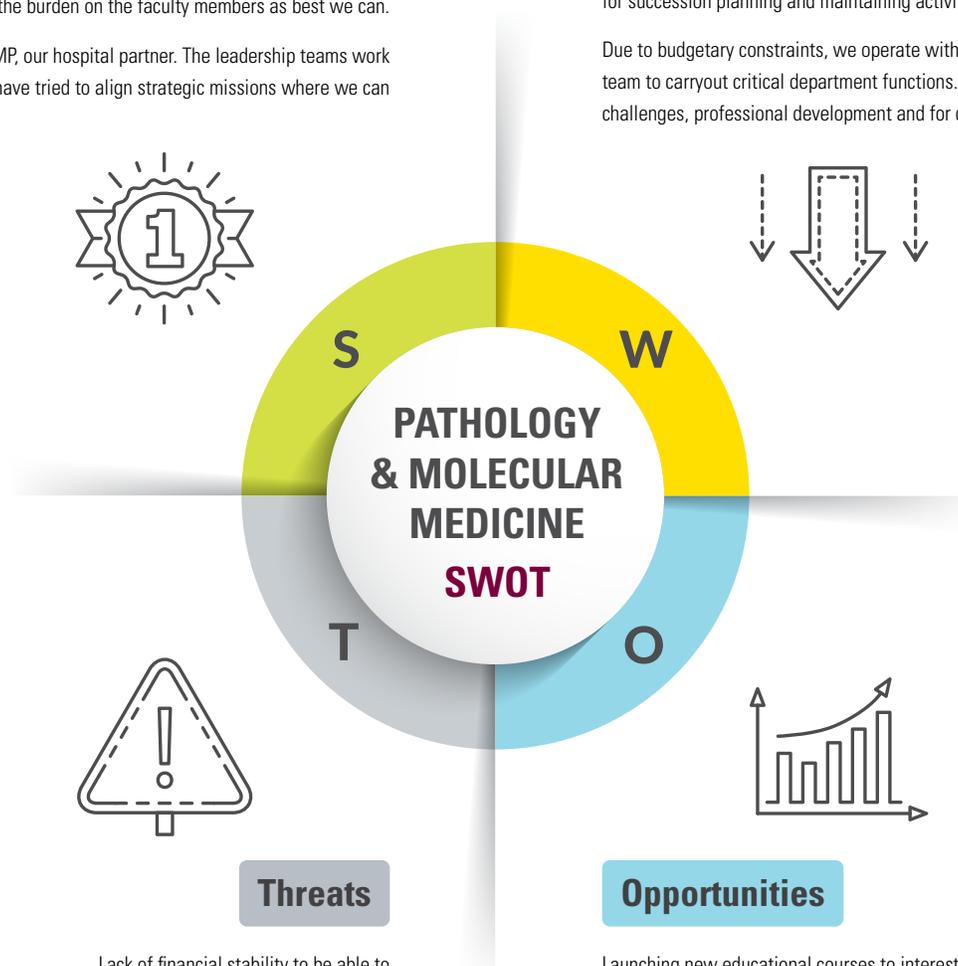
Most educational activities do not generate strong funding from the new budget model.

Financial sustainability has been challenging for PMM for over 20 years.

Removal of MIRC faculty decreased our research productivity

Majority of faculty members are mid-late career and due to fiscal constraints, we have not been able to add new faculty for succession planning and maintaining activity levels.

Due to budgetary constraints, we operate with a lean administrative team to carryout critical department functions. This creates capacity challenges, professional development and for driving key initiatives



Threats

Lack of financial stability to be able to recruit and retain new faculty.

Clinical faculty are hospital employees, with rising clinical demands. This puts a strain on academic activities

Non-clinical faculty replacement is not financially viable under current funding, jeopardizing some teaching programs

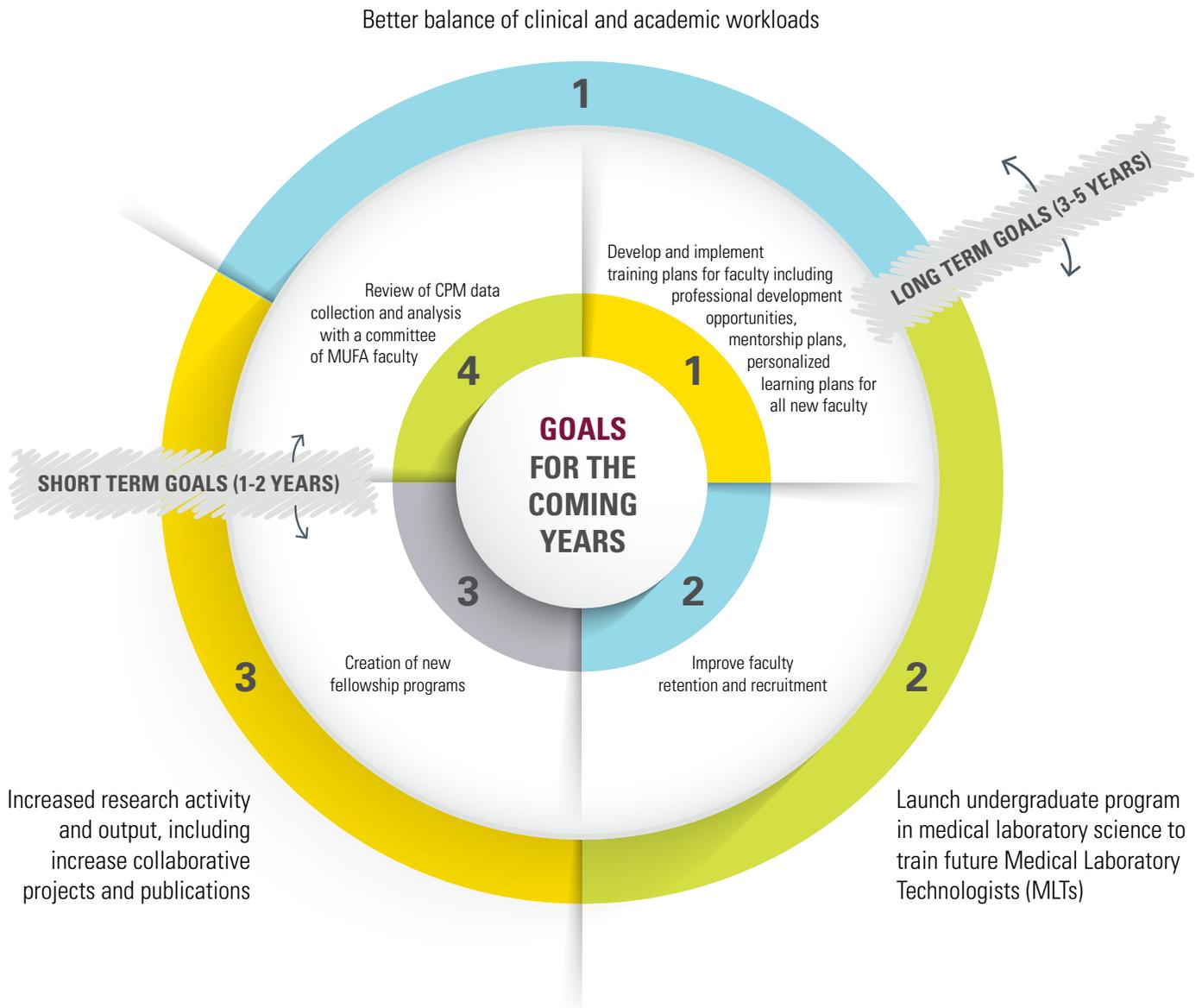
Opportunities

Launching new educational courses to interest undergraduate learners in our Lab Medicine programs and increase funding to the Department

Increase student intake in current courses and open up courses as electives to all students at McMaster

Submission of proposal for a new Medical Laboratory Science undergraduate program to support the workforce needs of the HRLMP labs and beyond

Goals for the Coming Years



We are very proud of the faculty, staff and learner accomplishments and perseverance over the past 5 years. Between the reorganization, new hospital laboratory information system (EPIC) and the COVID 19 pandemic, it is has been a challenging time which has highlighted the excellence of our people. Our faculty, learners and staff have risen up over the obstacles and continue to deliver world class education, research and clinical service.

Pathology and Molecular Medicine is well positioned to soar to even higher levels in the next 5 years.

I look forward to celebrating our future successes.

A handwritten signature in black ink, appearing to be 'M. A.', is centered on the page.

PATHOLOGY & MOLECULAR MEDICINE 5-YEAR REPORT 2017-2022