Department of Anatomy, Physiology and Pharmacology

Annual Newsletter - Issue III - Fall 2025

BE WHAT THE WORLD NEEDS

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Our Faculty, Staff & Colleagues

Faculty

Dr. Asmahan AbuArish	Assistant Professor
Dr. Landon Baillie	Assistant Professor
Dr. Stan Bardal	Associate Professor
Dr. Lane Bekar	Associate Professor
Dr. Justin Botterill	Assistant Professor
Dr. Julia Boughner	Professor
Dr. Veronica Campanucci	Associate Professor
Dr. L. Dean Chapman	Professor
Dr. Yi-Chun Chen	Assistant Professor
Dr. Jennifer Chlan	Assistant Professor
Dr. Kevin Chuang	Lecturer
Dr. Michelle M. Collins	Assistant Professor
Dr. David Cooper	Professor
Dr. Brian Eames	Professor
Dr. Thomas Fisher	Department Head
Dr. Sébastien Gauvrit	Assistant Professor
Dr. John Howland	Professor
Dr. Juan Ianowski	Professor
Dr. Anand Krishnan	Assistant Professor
Dr. Paul Lee	Assistant Professor
Dr. Lixin Liu	Associate Professor
Dr. Adel Mohamed	Associate Professor
Dr. Sean Mulligan	Associate Professor
Dr. Joseph Fomusi Ndisang	Associate Professor
Dr. Bogdan Popescu	Assistant Professor
Dr. Marek Radomski	Vice Dean Research
Dr. Greg Sawicki	Professor
Dr. Heather Szabo-Rogers	Assistant Professor
Dr. Changiz Taghibiglou	Associate Professor
Dr. Valerie Verge	Professor
Dr. John Verrall	Special Lecturer
Dr. Scott Widenmaier	Associate Professor
Dr. Changting Xiao	Assistant Professor

Instructional Staff

Kezia Fourie	Laboratory Instructor
Dawn Giesbrecht	Laboratory Instructor
Dr. Susan Gilmer	Laboratory Instructor
Dr. Sharon Husak	Laboratory Instructor
Dr. Dan McElroy	Laboratory Instructor

Anatomy Laboratory Staff

Dr. Modawi Abdelrahman	Lab Demonstrator
Dr. Shakeeba Mustaan	Lab Demonstrator
Dr. Bala Sekar	Lab Demonstrator
David Shewchuk	Bequeathal Technician
Corrie Willfong	Bequeathal Technician

Research Support Staff

Dr. Bruna Bonavia-Fisher	Research Facilitator

Administrative Staff

Michelle Burch	Clerical Assistant
Shannon DeGagné	Financial Analyst
Donna Dodge	Clerical/Body Bequeathal
Robin Parent	Academic Advisor
Maja Redekopp	Manager, Finance & Admin
Stacey Schleicher	Department Head Assistant
Melissa Teed	Graduate Program Admin

Adjunct and Associate Faculty

Dr. Dean Chamberlain	Oncology
Dr. Michael Kelly	Surgery
Dr. Michael Levin	Neurology
Dr. Sonja Kontulainen	Kinesiology
Dr. Daniel MacPhee	WCVM
Dr. Greg Malin	Family Medicine
Dr. Wendie Marks	Pediatrics
Dr. Ana Mendes Silva	Psychiatry
Dr. Amanda Quirk	Canadian Light Source
Dr. Maruti Uppalapati	Pathology
Dr. Franco Vizeacoumar	Oncology

Post-Doctoral Researchers

Dr. Joseph Atake	Cooper Lab
Dr. Ming Fang	Taghabiglou Lab
Dr. Hanrong Li	Krishnan Lab
Dr. Nataliya Tokarska	Verge Lab
Dr. Tianyu Hang	Xiao Lab

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College of Medicine
DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY
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Message from the Department Head

Dear friends and colleagues,

The Department of Anatomy, Physiology and Pharmacology is pleased to present the third edition of our departmental newsletter.

This year's issue highlights exceptional research across the Neuroscience, Imaging and Development, and Metabolic, Cardiovascular and Respiratory (MCAR) Research Groups. These groups continue to advance knowledge in areas ranging from brain health and neurodegeneration to developmental biology and cardiometabolic disease, reflecting the depth and diversity of biomedical research within our community.

APP continues to evolve and thrive, and we are pleased to share some of the many accomplishments from the past year. It has been an active period of recruitment as we strengthen our teaching and research capacity and build new connections across disciplines. We have also welcomed new staff and instructors whose enthusiasm and dedication have further enhanced the department's teaching and operations.

Our faculty and trainees have achieved remarkable success in research funding, publications, and awards, underscoring the strength and productivity of our academic community. APP researchers continue to secure competitive grants from CIHR, NSERC, SHRF, and other national and international agencies, reflecting our growing impact and visibility. These successes highlight the innovation and collaboration that define our department.

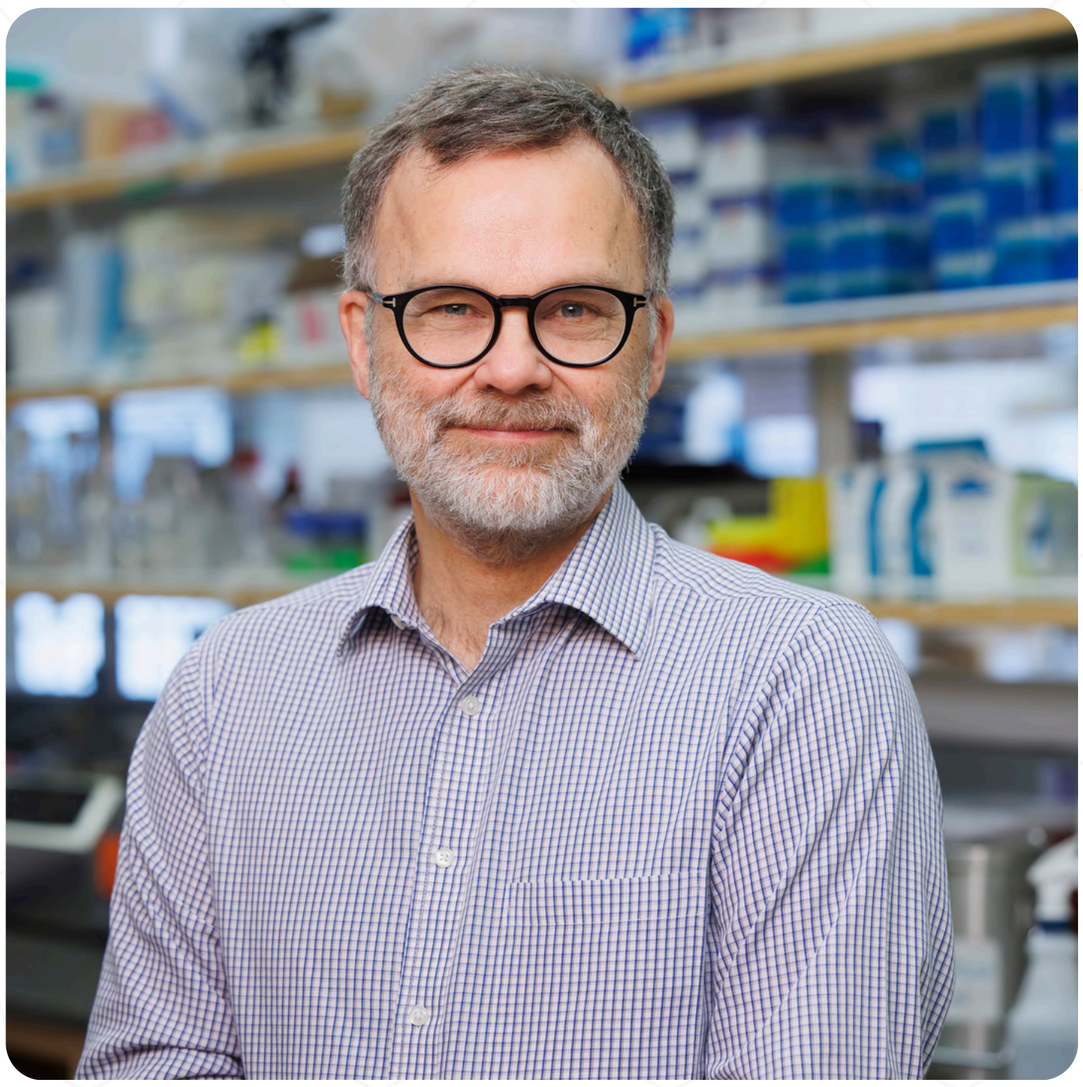
Our undergraduate and graduate programs remain among the most dynamic in the university. Enrolments continue to rise, and our students impress each year with their curiosity, creativity, and commitment to learning.

Faculty members continue to advance curriculum renewal and experiential learning initiatives that align with the College's strategic goals and prepare students for success in their future careers. As we look ahead, the Department remains committed to fostering an inclusive and collegial environment that supports excellence in research, teaching, and service. The achievements highlighted in this newsletter reflect the collective efforts of our faculty, staff, and students, whose dedication and collaboration continue to shape the success and reputation of APP.

I hope you enjoy this edition and the many stories it tells about the remarkable work happening in our department.

With kind regards,

Dr. Thomas Fisher
Department Head
Anatomy, Physiology and Pharmacology



✨Welcomes & Farewells

Michelle Burch

Michelle joins the department as Clerical Assistant for BMSC and is currently filling in as BMI Department Head Assistant. She spent four years at the Veterinary Medical Centre on campus in Client Services, serving as the first point of contact for clients and assisting with appointments, treatments, and pet care. Before that, she worked in private practice, gaining broad experience supporting both clients and veterinary teams. These roles have given her strong skills in client relations, organization, and communication.

Outside of work, Michelle is a busy mom of two: her son Edwin, 14, is a black belt in Taekwondo, and her daughter Julianne, 11, enjoys Girl Guides and art classes. The family also includes two miniature dachshunds who love walks.

Family time is important to Michelle. Summers are spent at their cabin at Emma Lake, and they enjoy camping trips to Manitoba with extended family. At home, they devote time to their 1929 character house, taking on projects to restore and maintain its historic charm.

Kezia Fourie

Kezia just finished her PhD this spring, where she received her degree in Veterinary Microbiology. She spent her PhD in the Wilson laboratory at VIDO, developing swine vaccines. During her PhD she was able to do research abroad term where she travelled to Scotland for four months where she studied Toxoplasma gondii proteomics at the Moredun Research Institute and University of Edinburgh.

This gave her experience in the European academic and research systems as well as led her to connect with scientists there.

At the start of her graduate studies, she knew she wanted to gain teaching experience. Over the next five years she spent seven terms as a Teaching Assistant in BMSC 240 and one term as a co-instructor in an animal biotechnology class (ANBI 470) in the Animal Biosciences program.

This past winter term she coordinated the lab for BMSC 240 which solidified her passion for teaching and postsecondary education. This term she is coordinating the BMSC 240 lab and teaching CPPS 331.

Outside of work she enjoys trivia nights, reading, and all sorts of crafts.

✨Welcomes & Farewells

Sharon Husak

Sharon is a physician with training in neurosurgery and a passion for teaching in the biomedical sciences. She has several years of experience as an educator and currently coordinates BMSC 220 (Cell Biology), one of the foundational courses in the biomedical sciences program. Alongside this role, she contributes to anatomy instruction across undergraduate, graduate, and professional programs, helping students at many stages of their academic journey.

Sharon has a particular interest in curriculum design and student engagement, bringing creativity and dedication to her teaching. She is committed to finding innovative approaches to course delivery and fostering inclusive, dynamic learning environments where students feel supported and inspired.

Beyond her academic contributions, Sharon enjoys a variety of hands-on and creative activities. She spends time gardening, working on DIY projects, and practicing yoga, which she credits with helping her maintain balance and perspective.

Celebrating the Retirement of Dr. Kash Desai

After nearly 25 years of dedicated service, Dr. Kash Desai retired from the University of Saskatchewan at the end of June. Kash first joined the Department of Pharmacology in 2000 and became a valued member of the Department of Anatomy, Physiology and Pharmacology when it was formed in 2018. Throughout his career, he was a supportive colleague and a steady contributor to the department's academic mission.

In retirement, Kash plans to spend more time painting, reading history, and taking on sessional teaching when possible. What he said he would miss most was teaching pharmacology, connecting with students, and finding ways to simplify challenging concepts while ensuring no student felt left behind. He also noted how much he would miss working with graduate students and the fulfillment of helping them build successful careers—something he took great pride in, knowing that all of his graduate students are now thriving at universities and companies around the world.

Kash shared that he felt fortunate to have worked under three supportive and encouraging department heads, a key factor in what he described as a truly satisfying career.

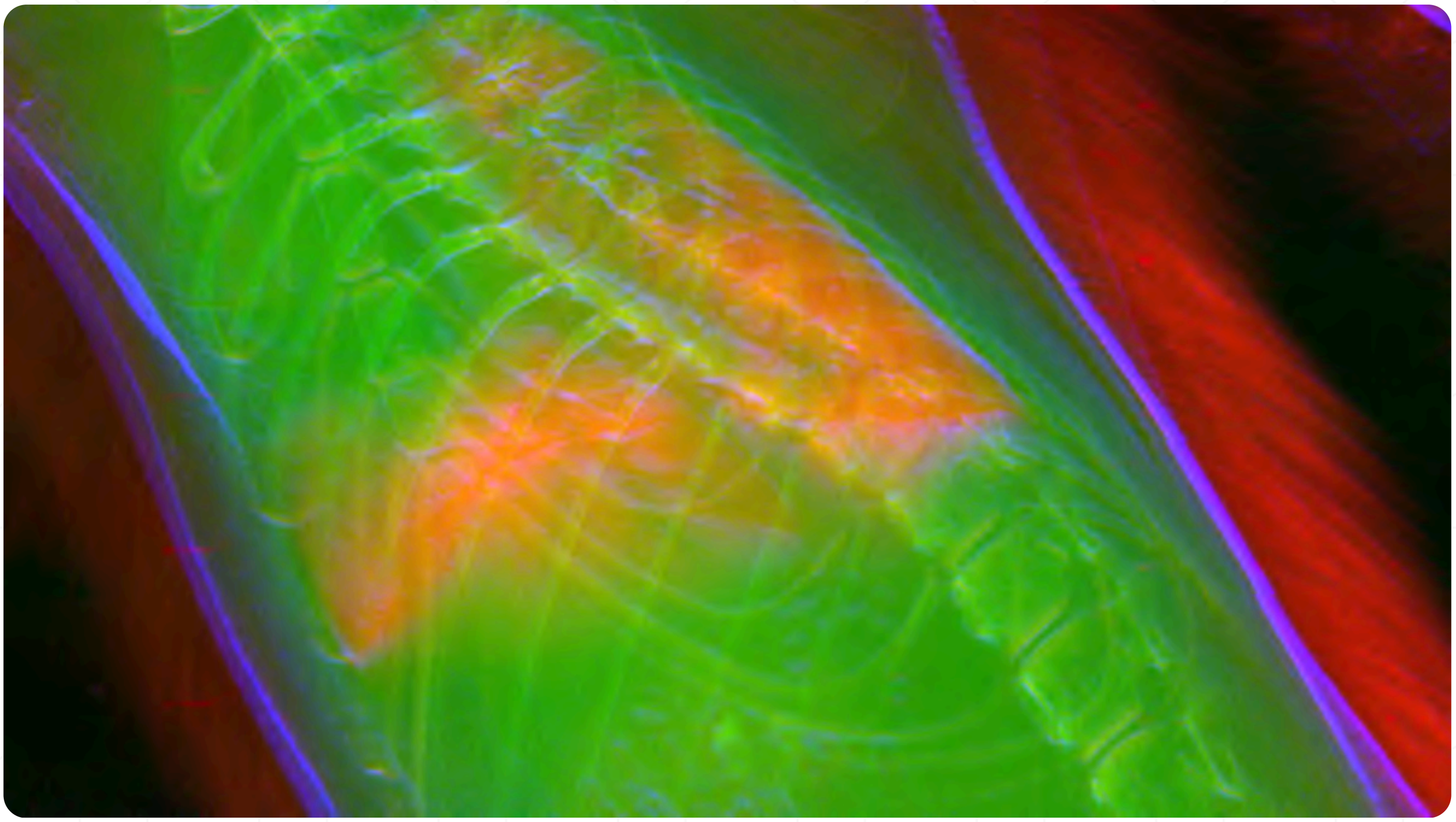
Imaging & Development

The Imaging & Development (ID) cluster brings together researchers who are working to understand how organisms grow, repair, and adapt — and how these processes can be visualized using advanced imaging technologies.

This cluster focuses on the cellular and developmental mechanisms that shape health and disease, using state-of-the-art imaging approaches to reveal biological processes in real time. Researchers study topics such as tissue regeneration, organ development, stem cell biology, and molecular signaling, providing critical insights into how cells and tissues form, function, and respond to injury.

A defining strength of the cluster is its integration of innovative imaging platforms with developmental biology. By combining powerful tools like live-cell imaging, high-resolution microscopy, and molecular reporters, APP researchers are able to see biological systems in action and make discoveries that were not possible a decade ago.

The translational potential of this work is significant: from understanding birth defects and developmental disorders to identifying new ways to promote healing and tissue repair, the Imaging & Development cluster is advancing knowledge that links fundamental biology to human health.



Synchrotron Imaging of Mouse Lungs Using MIR
This image highlights research using the synchrotron and *Multiple Image Radiography (MIR)* to study lung injury models developed by **Prof. Gurpreet Aulakh** (WCVM). Graduate student Farangis Foroughi led the data acquisition and analysis, recently publishing her findings in *Physics in Medicine and Biology*. The color scale shows radiographic value (green), alveolar structure via USAXS (red), and X-ray refraction (blue), offering insight into lung health and function.

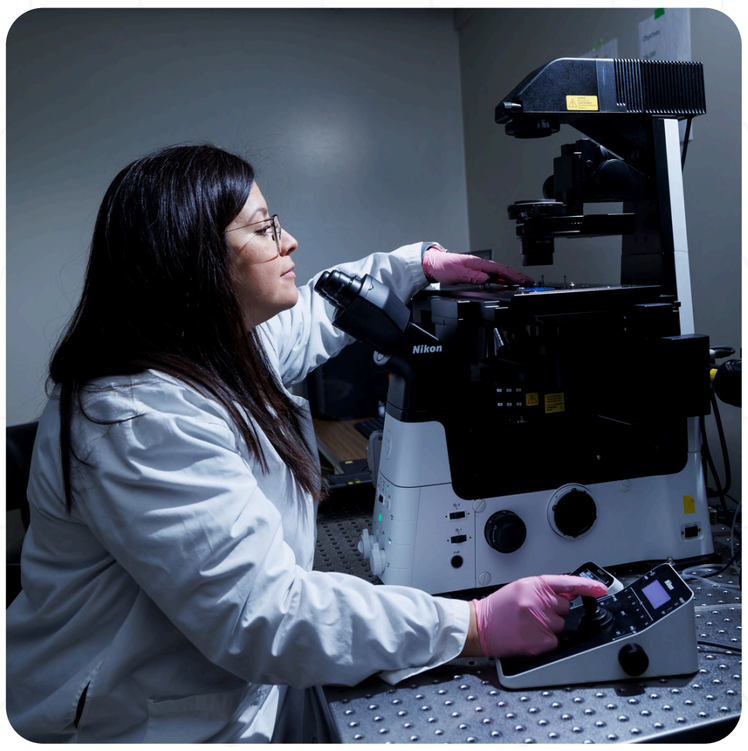
Imaging & Development

Researchers in the Imaging & Development cluster are advancing imaging technologies and developmental biology to better understand how tissues form, adapt, and repair. Their work leverages synchrotron imaging, bioprinting, and molecular analysis to explore the dynamics of growth and regeneration.

Dr. Chapman's team pioneers new X-ray imaging modalities, such as diffraction-enhanced imaging and spectral-K-edge subtraction imaging, to push the boundaries of what can be visualized in living tissues. These approaches allow unprecedented resolution of soft tissue structure and function, advancing biomedical research and clinical imaging applications.

Dr. Dean Chapman was celebrated as the **Best Supervisor** at the **2025 Life & Sciences Expo**, an award nominated by his trainee, Puja Rajesh, in recognition of his exceptional support and mentorship.

Dr. Chapman with his student Puja Rajesh



Dr. Collins with the spinning-disk confocal microscope

Dr. Michelle Collins had an exceptional year advancing her research on cardiac development and disease using zebrafish and neonatal rats as model systems. Her lab uses cutting-edge genetic and imaging techniques to visualize how the heart forms and functions, uncovering mechanisms that may inform future diagnoses and therapies.

She received a **CoMBRIDGE Operating Grant** and a **SHRF Impact Grant** to support her innovative genetic studies on cardiac growth and rhythm. By combining developmental biology with advanced microscopy, Dr. Collins' work is providing new insights into the cellular and molecular processes that drive heart disease.

Dr. Eames in the lab with his zebrafish research system

Although Dr. Brian Eames spent six months on sabbatical, his research program continued to thrive in skeletal development and growth-factor signaling. His lab combines molecular biology and advanced imaging—particularly synchrotron-based methods—to study how proteoglycans shape bone and cartilage formation and how skeletal tissues evolve.

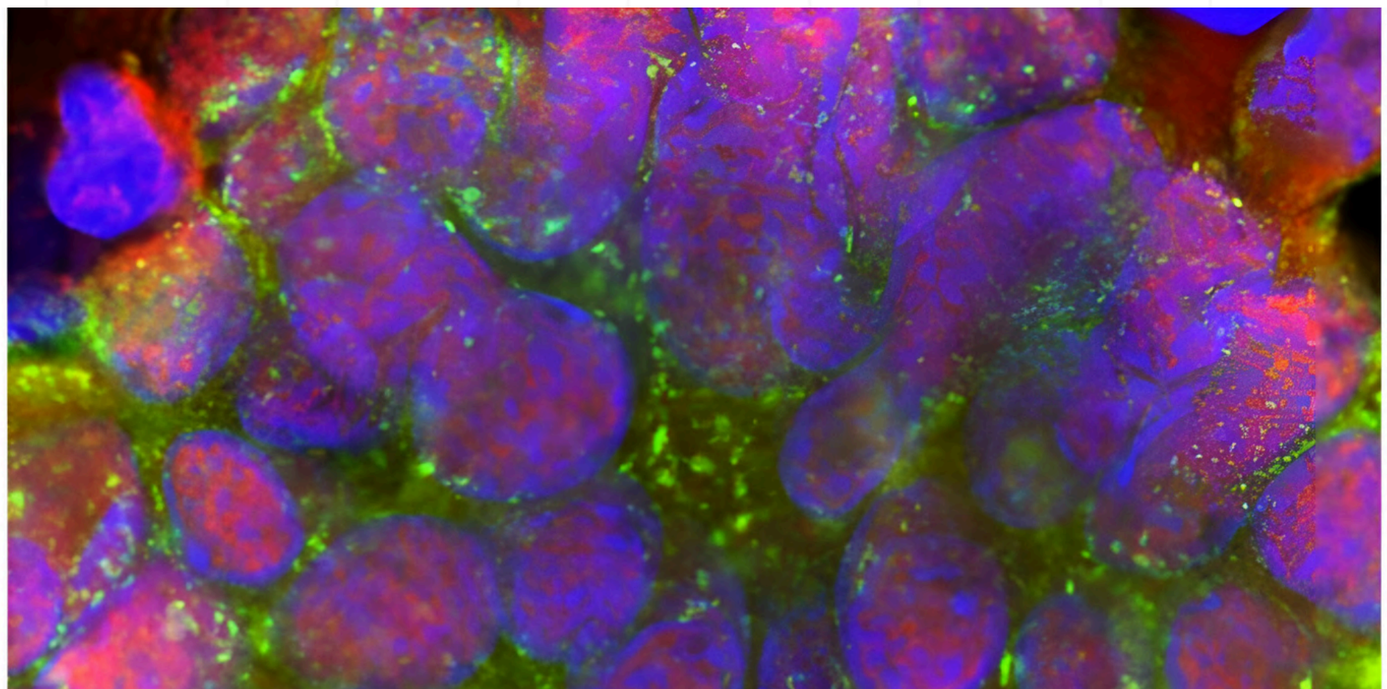
This year, Dr. Eames received a **SHRF Align Grant** for bioprinting novel constructs for articular cartilage engineering and secured additional funding from the **CIHR, Company of Biologists**, and the **Society for Developmental Biology** to host the Canadian Developmental Biology Meeting. He also published three papers in 2024–25, including two in *Development* and one in *Biofabrication*. His continued research success reflects the strength and innovation of his imaging-based developmental biology program.

Metabolic, Cardiovascular, and Respiratory (MCAR)

The Metabolic, Cardiovascular and Respiratory (MCAR) research cluster unites investigators from APP and across the health sciences who share a common goal: understanding how the body's vital systems — metabolism, the heart and circulation, and the lungs — work together in health and disease.

Research in MCAR spans every level of investigation, from the molecular biology of lipids and metabolism to integrated studies of cardiovascular and respiratory physiology. Faculty are uncovering how changes in metabolism affect heart and lung function, and how stressors such as hypertension, diabetes, or environmental exposures disrupt these finely tuned systems.
The cluster has a strong focus on cardiometabolic disease, respiratory dysfunction, and the metabolic drivers of systemic illness. By linking basic science to clinical challenges, MCAR researchers aim to reveal mechanisms that underlie conditions like obesity, diabetes, heart failure, and chronic lung disease.

What sets MCAR apart is its emphasis on translational impact: discoveries in the lab are connected to real-world problems in patient care and population health. Whether studying vascular responses at the cellular level or examining lung function in disease models, MCAR research is building the knowledge base needed to guide better therapies, prevention strategies, and long-term health outcomes.



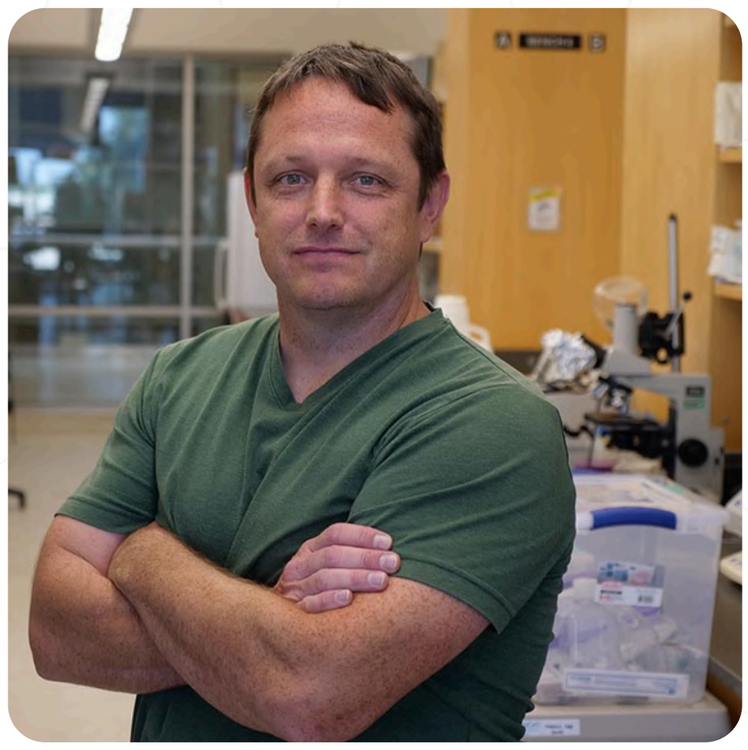
Fluorescence confocal microscope image of human bronchial epithelial tissue isolated from donor's bronchus via bronchoscopy by bronchoscopist Dr. Anderson Tyan. The image demonstrates tissue response to cigarette smoke exposure

Metabolic, Cardiovascular, and Respiratory (MCAR)

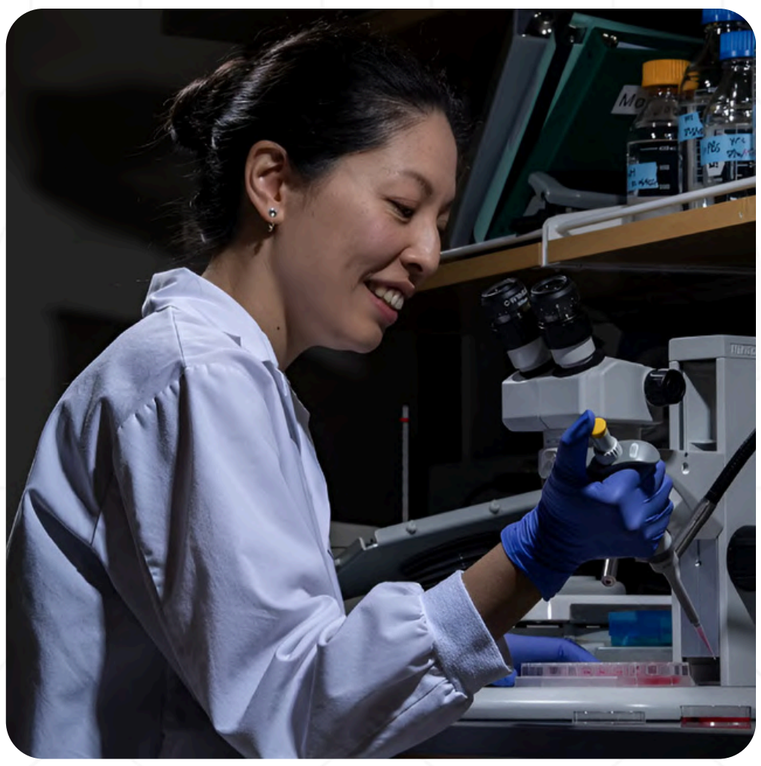
Researchers in the MCAR cluster are exploring the interconnected systems that regulate metabolism, cardiovascular health, and respiratory function. Their discoveries shed light on how hormones, lipids, and neural signals coordinate energy balance and overall health.

Dr. Scott Widenmaier's lab investigates how metabolism and immunity interact to support health, and how disturbances in these interactions cause obesity-linked diseases such as diabetes, liver disease, cardiovascular disease, and sepsis. His work applies the emerging field of immunometabolism, which has the potential to transform our understanding of these widespread diseases and how best to treat them.

Dr. Widenmaier was recognized by the **Canadian Institutes of Health Research (CIHR) for outstanding performance as a reviewer in the Fall 2023 and 2024 project grant competitions**, underscoring his commitment to advancing research quality at the national level.



Dr. Scott Widenmaier in his lab



Dr. Yi-Chun Chen examines endocrine cell responses to metabolic stress and disrupted signaling in diabetes.

Dr. Yi-Chun Chen investigates how endocrine cells sense and adapt to metabolic stress. Her lab studies hormone processing and secretion in obesity and diabetes, identifying how disruption in this process contributes to systemic metabolic disorders. Her research seeks to uncover how these cellular mechanisms influence overall metabolic health and disease progression, with the goal of informing future therapeutic strategies for diabetes.

Dr. Chen was featured in *The Globe and Mail* (June 30, 2025) as part of Canada's next generation of health and medicine researchers, spotlighting her promising early-career contributions.

Dr. Changting Xiao uses integrative physiology and systems biology approaches to study lipid and lipoprotein metabolism, gastrointestinal physiology, and the pathophysiology of metabolic disorders and complications (e.g. diabetes, obesity, cardiovascular diseases). Through these studies, he aims to develop novel strategies to prevent and treat cardiometabolic diseases.

In 2024, Dr. Xiao received a 5-year **CIHR Project Grant** for his project "*Regulation of Intestinal Lipid Storage and Release in Metabolic Health and Disease*" and a **Stewart Whitman New Investigator Award**. In 2025, his team secured a **Heart & Stroke Foundation of Canada Grant-in-Aid** to study gut-derived extracellular vesicles in vascular health.

Dr. Changting Xiao (left) with his team members (L-R), Rita Wang, Farnoosh Tabatabaeian, Saad Khan, Murooj Ghanem, Kundanika Mukherjee.

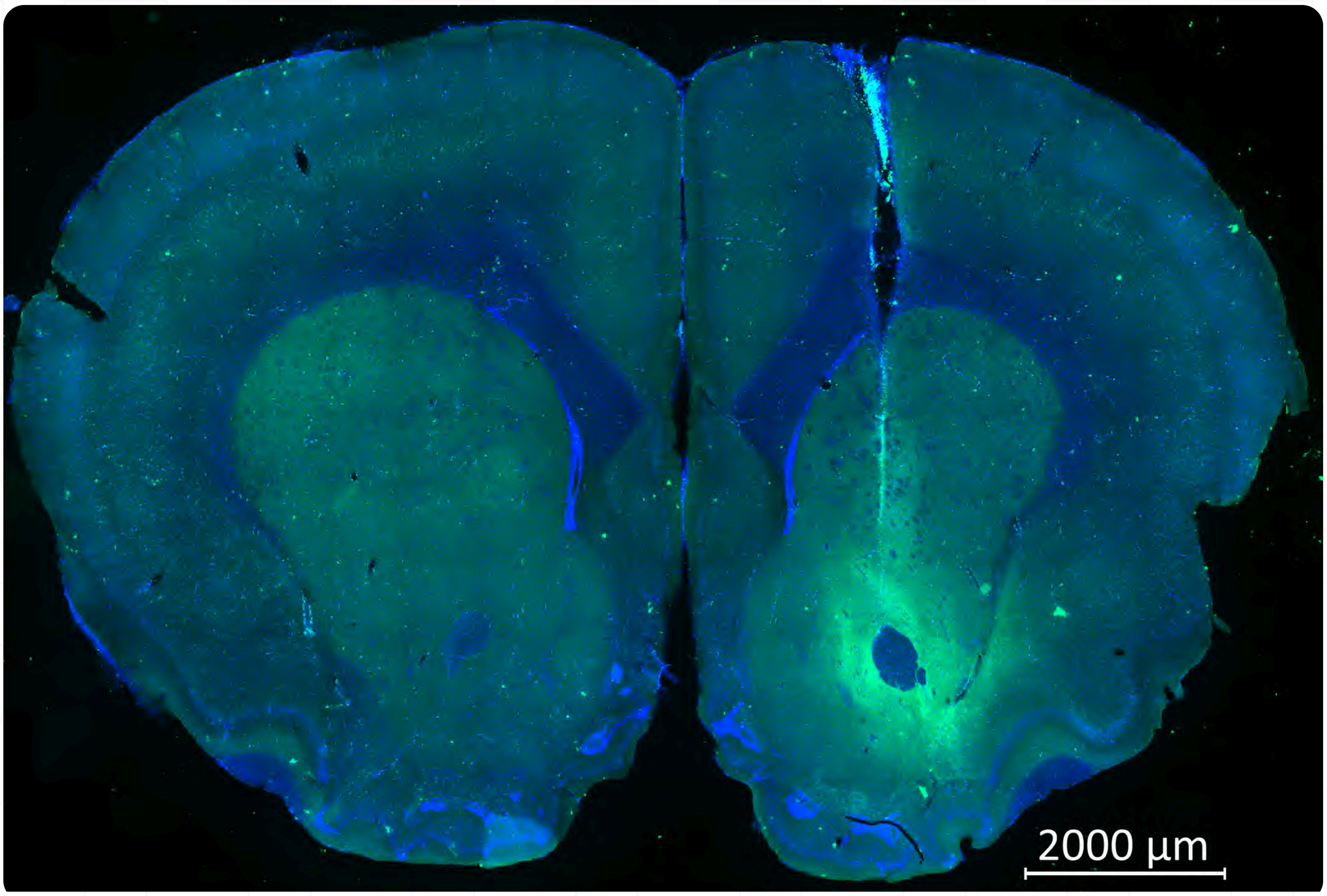
Neuroscience

Neuroscience research in APP explores every level of the nervous system — from molecular and cellular activity to behaviour and brain disorders. Faculty study how neurons and glial cells communicate, how circuits are shaped by experience, and how these processes change in disease.

The cluster brings together expertise in synaptic and glial biology, neuroplasticity, neuroimmune interactions, and behavioural neuroscience. Using models that range from molecular systems to preclinical studies, researchers are uncovering the mechanisms that maintain brain health and drive dysfunction.

Strong ties with clinical neuroscience centres and hospital partners ensure discoveries move quickly from lab to life. Current work tackles pressing challenges such as nerve regeneration, multiple sclerosis, epilepsy, spinal cord injury, and neurodegenerative disease.

By linking basic and clinical research, APP neuroscientists are not only deepening understanding of the brain but also developing innovative therapies to improve patient care and quality of life.



Measuring Dopamine Release in the Brain's Motivation Circuit

The Howland Lab investigates brain circuits that drive motivated behaviour using engineered proteins to monitor neurotransmitter release. This image shows an engineered protein detecting dynamic dopamine changes in the **nucleus accumben**s, a region linked to motivation. The study found dopamine release correlated with working **memory performance**, a cognitive function often impaired in psychiatric disorders—offering insights that may guide future treatments.

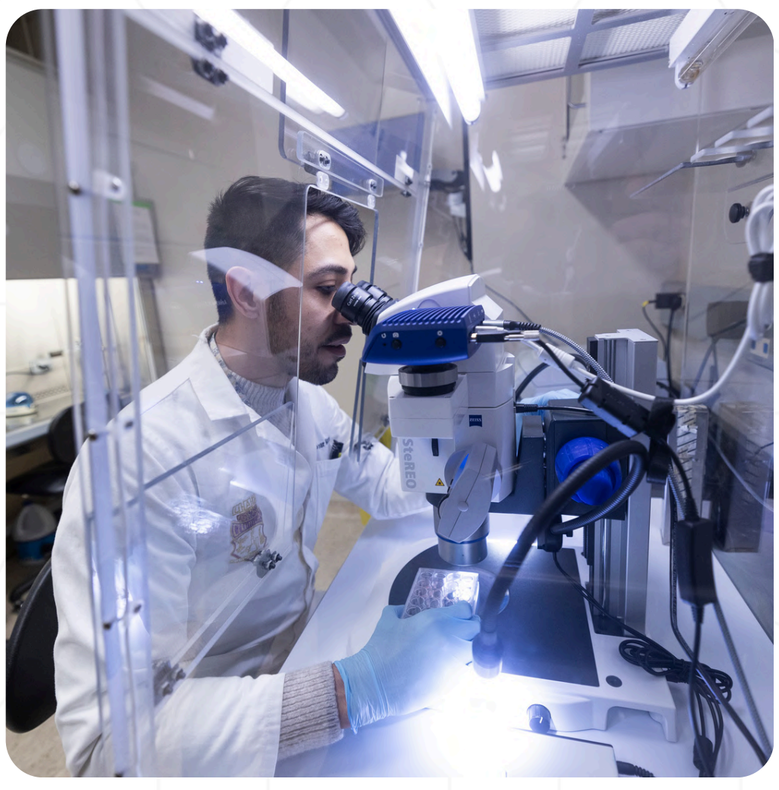
Neuroscience

The Neuroscience cluster integrates molecular, cellular, and systems-level approaches to understand the structure and function of the nervous system. APP neuroscientists investigate topics ranging from sensory processing and neurodevelopment to neurodegenerative disease and brain repair.

Dr. John Howland's research explores how the brain supports learning, memory, and executive functions, and how these are disrupted in neuropsychiatric and neurodegenerative disorders. His lab uses behavioural, pharmacological, and electrophysiological approaches to study how specific brain circuits regulate cognition and plasticity.

Dr. Howland secured support from the **Alzheimer Society Research Program** and the **Saskatchewan Health Research Foundation** ($100,000) to study how dendritic spine structure and function are altered in Alzheimer's disease using a novel tau knockout rat model.

Dr. Howland (left) with Dr. De SIlva who are working together in Alzheimer's Research



Dr. Campanucci's graduate student: Oscar Omar Morales working in the lab

Dr. Veronica Campanucci investigates how neural activity and inflammation shape communication between the brain and body. Her lab focuses on the spinal cord's role in autonomic and visceral regulation, using electrophysiological and molecular tools to examine how inflammation and injury alter synaptic transmission.

She secured multiple awards, including a **Cystic Fibrosis Foundation** grant (US$504,000 over three years) and **Cystic Fibrosis Canada** funding ($100,000) to explore the role of neuropathy in CF-related gut dysmotility. She also received a **USask International Research Partnership Fund** award ($20,000) to study herbicide effects on neuronal function in honeybees.

Dr. Justin Botterill studies the neural circuits that control anxiety, fear, and memory. His lab uses optogenetic and imaging techniques to map how hippocampal and cortical networks encode emotional experiences and how dysregulation in these systems contributes to stress-related and seizure disorders.

He earned **CoMBRIDGE funding** ($50,000) to examine circuits involved in temporal lobe epilepsy. This work will provide key insights into the brain regions that cause and prevent seizures and could lead to new treatments for individuals with epilepsy.

Dr. Botterill in his lab

Faculty Awards & Recognition

Honouring a Leader in Nerve Research

This year, Dr. Valerie Verge was recognized with two of the University of Saskatchewan's highest distinctions: **Distinguished Professor** and **Distinguished Researcher**. These honours reflect her outstanding impact in neuroscience, mentorship, and academic leadership.

As Director of the Cameco MS Neuroscience Research Centre, Dr. Verge has dedicated her career to understanding how the nervous system repairs itself after injury. Her work on molecular pathways that drive nerve regeneration has shaped new directions for treating peripheral nerve injuries, multiple sclerosis, and other neurological disorders. Her research program ranks among the top 2% of most-cited worldwide.

Beyond her scientific contributions, Dr. Verge is a deeply respected mentor whose trainees now lead research programs across Canada and internationally. Her recognition this year highlights not only her groundbreaking discoveries, but also her lasting influence on the neuroscience community at USask and beyond.

Celebrating Excellence in Teaching

Dr. Stan Bardal was selected as a recipient of the **2025 College of Medicine Excellence in Teaching Award** and was formally celebrated at the College of Medicine Appreciation Event on May 21, 2025, where he received his award alongside other honourees.

This prestigious award recognizes faculty members who have made significant contributions to the College's teaching mission and who are acknowledged by peers and students as outstanding educators.

Dr. Bardal was nominated by Dr. Thomas Fisher and Dr. Meredith McKague, who highlighted his commitment to learning, his ability to foster respectful and engaging classrooms, and his impact on curriculum development and programming.

In particular, Dr. Bardal has played a key role as co-lead of the Masters of Physician Assistants curriculum, while also advancing his own academic journey through his Masters studies and research. His dedication to both teaching and learning exemplifies the qualities this award seeks to honour.

Faculty Awards & Recognition

Dr. Scott Widenmaier was awarded both a **CoMBRIDGE grant** ($50,000) and a **Heart & Stroke Foundation Grant-in-Aid** ($400,000 over four years) to study the role of Nrf1 and lipoproteins in sepsis.

Dr. Changting Xiao also earned a **Heart & Stroke Foundation Grant-in-Aid** ($390,000 over four years) to investigate the role of gut-derived extracellular vesicles in vascular health.

Dr. Julia Boughner was named a **Fellow of the American Association for Anatomy (FAAA**), a prestigious honour that recognizes her outstanding contributions to anatomical sciences and her leadership in the field. She was also appointed as the **Tri-Agency NSERC Leader for the University of Saskatchewan**, a role that strengthens the university's research capacity and connects faculty to national funding opportunities.

Drs. Justin Botterill, Michelle Collins, and Sébastien Gauvrit were successful in securing **NSERC Research Tools and Instruments (RTI) awards**, which will provide cutting-edge infrastructure to strengthen electrophysiology, live cell imaging, and zebrafish research across APP.

Dr. Asmahan AbuArish received an **SHRF Align Grant ($10,000)** for her project *"Does Defective Cell Stress Response in Chronic Obstructive Pulmonary Disorder Lead to Lung Inflammation?"* in collaboration with Dr. Chung-Chun Tyan (Department of Medicine).

Dr. Changiz Taghibiglou was awarded an **SHRF Innovation Grant ($50,000)** to explore a neuroprotective peptide in Alzheimer's disease.

Dr. Juan Ianowski received **Cystic Fibrosis Foundation Pilot and Feasibility funding (US$112,000 over two years)** to study pulmonary ionocytes and secretory cells in swine distal airways, along with **CIHR Bridge funding ($41,000)** to further investigate pulmonary ionocytes and club cells in human airway disease.

Faculty Awards & Recognition

Congratulations to **Dr. Krishnan**, who has been recognized as an **Outstanding Reviewe**r for his exemplary contribution to peer review. Of the 1,501 reviewers who participated in the RQA process for the Spring 2025 Project Grant competition, only 16.9% received this distinction.

Dr. Anand Krishnan received a **Breast Cancer Canada Annual Research Grant ($75,000 over three years)** to investigate mechanisms behind brain recurrence of breast cancer, with a focus on novel therapeutic strategies.

2025 CoMRad Awardees

Congratulations to all 2025 CoMRad awardees:

- **Dr. Justin Botterill** – *The role of hilar mossy cells in hippocampal circuit dysfunction and behavioural deficits in a mouse model of autism spectrum disorder*
- **Dr. Michelle Collins** – *The Brain-Heart Axis: Exploring Heart Health in a Model of Autism-Spectrum Disorder*
- **Dr. John Howland** – *Methamphetamine use during pregnancy: effects on maternal and offspring behaviour and brain health*
- **Dr. Brian Eames** – *Growth factor modulators: generation and analyses of proteoglycan sulfation mutant zebrafish*
- **Dr. Sébastien Gauvrit** – *Characterizing revascularization during zebrafish brain regeneration following a stroke*

Dr. Sébastien Gauvrit was awarded both an **NSERC Discovery Grant** and an **ECR Launch Supplement** for his research on vascular development in vertebrates.

Congratulations to **Drs. Veronica Campanucci** and **Justin Botteril**l on receiving **OVDR Equipment Funding ($40,000).**

Dr. Valerie Verge received the **2025 AFMC Scientist Award**, one of the highest honours in Canadian medical education, highlighting her groundbreaking research in nerve regeneration and mentorship of the next generation of neuroscientists.

Teaching & Learning

Curriculum Development

Faculty across APP continue to drive curriculum renewal within the College of Medicine—refining course content, expanding hands-on/experiential learning, and aligning teaching with College priorities.

The Undergraduate Medical Education (UGME) program is partnering with the Gwenna Moss Centre for Teaching and Learning to re-envision the curriculum with a stronger focus on student outcomes, integrated learning, and skill development.

At the graduate level, the APPY 990 Seminar Series was refreshed this year to spotlight the department's three research pillars—Neuroscience, Imaging & Development, and MCAR. The new structure helps students connect their work to broader themes and encourages collaboration across labs and disciplines.

NEW Course - Everything Changed When They Wrote Science As Story

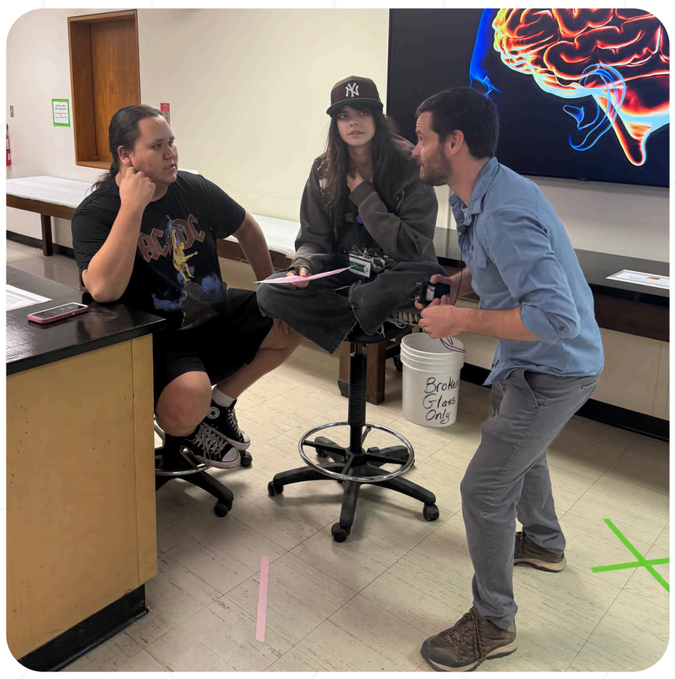
WHAT IF – you harnessed the power of story to get what you want?

Especially with the rise of GenAI writing tools such as ChatGPT and disinformation campaigns to undermine science's credibility, our students need strategic skill development to face this new world bravely. **Compelling scientific writing is more vital than ever** to share research advances correctly with our colleagues, policy makers, and the greater public who funds our work. To address this pressing need, in Fall 2025 the Department of APP launched *Everything Changed When They Wrote Science As Story,* a hands-on immersive science writing course for USask Biomedical Sciences undergraduate and USask Science graduate students. This experiential course, created and taught by Dr. Julia Boughner (Professor, Department of APP), will be offered again in Fall 2026. Interested faculty and students are encouraged to contact her with any questions. Please search for **APPY 808.3 and CPPS 498.3** in the USask Course Catalogue.

Biomedical Neuroscience undergraduate **Grayson Tourney** graduated with an impressive 97.34% average, earning two of the university's highest honours—the **Governor General's Silver Medal** and the **University Medal**. In reflecting on his experience, Grayson encourages fellow students to step outside of their comfort zones, pursue subjects they are passionate about, and take risks instead of simply following the easy path. His message highlights the value of curiosity, resilience, and pushing boundaries as keys to both academic success and personal growth.

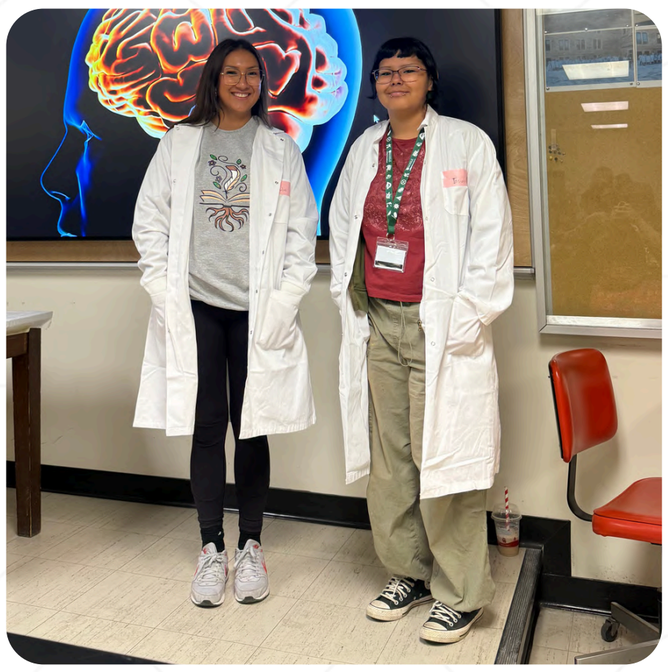
Teaching & Learning

Indigenous Summer Institute – BMSC Participation



On August 11, the BMSC program took part in the Indigenous Summer Institute for the first time, offering an engaging, hands-on learning experience for visiting students. Thirty-two students attended the session, with two expressing strong interest in the BMSC program. The organizing team was pleased to have BMSC involved, especially after students requested our participation last year.

Session Overview



The two-hour interactive session, facilitated by Dr. Dan McElroy, explored how Western and traditional medicines travel through the body and influence brain function. The classroom was set up as a "human body," and students acted as medicines, enzymes, and neurotransmitters moving through systems such as the stomach and liver. This activity helped illustrate how substances—from traditional teas to pharmaceuticals to junk food—are metabolized and affect brain chemistry, mood, and perception.

Creative Reflections in Anatomy

As part of ongoing efforts to support reflective, learner-centred approaches in CPPS 310, **Dr. Kevin Chuang** has introduced a series of creative reflection assignments that encourage students to process their learning through art, narrative, and personal expression. These tasks invite students to engage with anatomy in a deeper, more human way—through poetry, storytelling, and imaginative interpretation of anatomical structures and concepts.

One example is a Haiku written in response to the theme of "learning anatomy":

Learn anatomy.
All we are and all we'll be:
Hair, nails, bones and teeth.

Biomedical Sciences student Marissa Townsend explored a "haunting" of the Vestibulocochlear nerve **(CN VIII)** in her creative reflection:

"…all at once, it goes quiet.
Silence, imbalance, collapse—then sound returns, hushed and changed.
A sudden loss of hearing and gravity? How haunting."

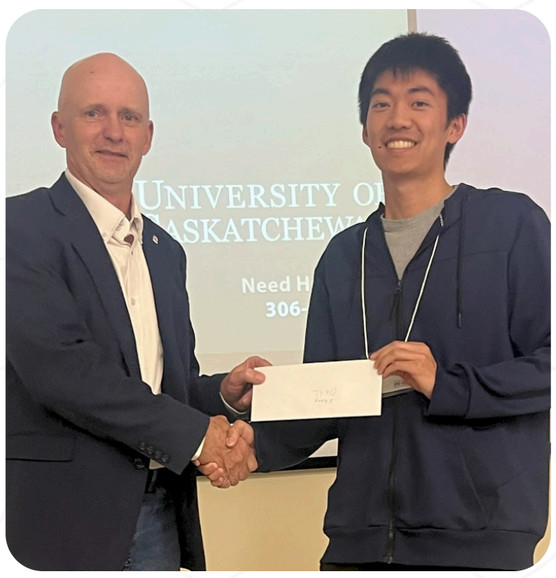
These reflections show how students are engaging with anatomy in imaginative and meaningful ways.

Student Awards & Achievements

Undergraduate & Graduate Highlights

APP faculty continue to provide high-quality instruction across undergraduate and graduate programs. Graduate students have contributed to peer-reviewed publications, conference presentations, and interdisciplinary collaborations, while undergraduate students have participated in summer research projects, the SURE program, and course-based research initiatives.

Katherine Chang, an undergraduate summer student (Botterill Lab), received the **2025 SURE Symposium "OVPR Promising Future Scholar Award"** for her project *"TRAPing hippocampal-dependent fear memories."*



Steve Zheng, a summer undergraduate student in **Dr. Asmahan AbuArish's lab**, earned **1st place for Best Student Oral Presentation** at the **PSFaM Symposium** in June 2025.

Congratulations to **Thora Reynolds** (Verge Lab), who received first place for her poster presentation, and to Jay Patel (Krishnan Lab), who earned third place, at the **College of Medicine 2025 Undergraduate Research Showcase**.

Jay Patel (Krishnan Lab) – **2nd place, Undergraduate Student Category, Life and Health Sciences Research Expo 2025**
Title: *Exploring the role of autonomic neurotransmitters in androgen-deprivation-induced neuroendocrine prostate cancer*

Undergraduate Summer Research Awards (USRA)

USRA students play an important role in advancing summer research across APP's labs. These competitive awards support hands-on training, experimental skill development, and early research experiences that prepare undergraduates for graduate studies and future careers in health sciences. This year's recipients contributed to a wide range of projects in neuroscience, physiology, cell biology, and molecular research.

APP USRA Recipients (2025):

Jennie Gao (AbuArish), Ronin Sawitsky (Howland), Keisha Singh (Boughner), Jay Patel (Krishnan), Aaron Su (Widenmaier), Caleb White (Howland), Steve Zheng (AbuArish), Uday Sandhu (Xiao), Blake Morrow (Chamberlain), Rene Thompson (MacPhee), Katherine Chang (Botterill)

CoMGrad Scholarships

Ten graduate students from APP received College of Medicine Graduate Scholarships this year!
Alina Trofimova (Botterill), Jimy Mejia Delgadillo (Krishnan), Aiden Glass (Howland), Miranda Messmer (Levin & Popescu), Bisrat Bekele (AbuArish), Muskan Sharma (Szabo-Rogers), Andy Kim (Collins), Sarah Ha (Ianowski), Oseb Ibukun (Widenmaier)

Student Awards & Achievements

Welcome to the New APP Grad Students 2025

McKenna Bolger – MSc (Botterill)
Evan Chayer – MSc (AbuArish)
Christopher Chivers – PhD (Collins)
Emma Eger – MSc (Collins)
Aiden Glass – MSc (Howland)
Royce Hermanson – MSc (Botterill)
Oseb Ibukun – PhD (Widenmaier)
Marissa Jones – MSc (Ianowski)
Amber Jurke – MSc (Marks)
Siqi Li – MSc (Szabo-Rogers)
Yun Hei Issac Lo – MSc (Chun)
Ximena Mejia Delgadillo – MSc (Krishnan)
Wrynan Munabirul – MSc (Gauvrit)
Yolanda Plaza – MSc (Marks)
Anu Sakharkar – MSc (Taghibiglou)
Muskan Sharma – MSc (Szabo-Rogers)
Kenny (Khanh) Ta – MSc (Howland)
Maya Wilson – MSc (Verge)
Kaylen Young – MSc (Howland)
Fatma Younis – MSc (Cooper)
Joanne Zachariah – MSc (Szabo-Rogers)

Congratulations to the Successful Defences of 2025

Rekha Wittaker – MSc (Ianowski)
Nataliya Tokarska – PhD (Verge)
Helya Mortazavi – PhD (Papagerakis)
Dan McElroy – PhD (Howland)
Ilne Haan – PhD (Howland)
Michael Dada – MSc (Campanucci)
Sarah Shaban – MSc (Botterill)
Carlie Klatt – MSc (AbuArish)
Minh Vu – MSc (Campanucci)

Congratulations to **Alina Trofimova** (Botterill) for receiving the **2025 Dean's Doctoral Scholarship for International Students**.

APP trainees earned several devolved funding awards this year. Although this newsletter can spotlight only a portion of our many successes, we proudly celebrate all recipients and the outstanding achievements across our trainee community.

Tri-Council Scholarships

Aiden Glass (Howland) – **NSERC CGS-M**
Andy Kim (Collins) – **CIHR CGS-M**

Conference Awards

Andy Kim (Collins) – **1st place, CMGSS Innovations in Health Sciences Conference**
Title: *PITX2C Regulation of Cardiac Rhythm in the Neonatal Rat Heart*
Authors: **Andy Kim**, Jared Stevenson, Sébastien Gauvrit, Michelle M. Collins

Bhadrapriya Sivakumar (Krishnan) – **2nd place, Graduate Student Category, Life and Health Sciences Research Expo 2025**
Title: *SC-MANF – a potential therapy for peripheral nerve regeneration*
Authors: **Bhadrapriya Sivakumar**, Valeria Martinez, Anil Kumar, Anand Krishnan

Saskatchewan Cancer Research Conference – Poster Awards

Ximena Mejia Delgadillo (Krishnan) – **1st place (<1 year MSc Category)**
Nickson Joseph (Krishnan Lab) – **3rd place (PhD Category)**

Trainee Presentation Award

Farnoosh Tabatabaeian (Xiao) – **Awarded at the 3rd Scientific Meeting of the Academy of Cardiovascular Research Excellence (ACRE) Canada & 9th China-Canada Symposium in Atherosclerosis, Thrombosis and Cardiovascular Disease**

Department Events

Annual Department Retreat

On May 28, 2025, APP faculty and staff gathered at The Crossmount for the annual department retreat on a warm and sunny day. Dr. Fisher opened the morning with brief remarks, followed by Dr. Howland leading a discussion on future plans for a department strategic plan, now that the College of Medicine is undertaking its own.

Our guest facilitator, Aditi Garg from the Gwenna Moss Centre for Teaching and Learning, led group exercises exploring themes such as alignment with learning outcomes, inclusivity and transparency, opportunities for practice and feedback, and fostering self-directed learning.

After a catered lunch—enjoyed both indoors and outdoors—updates from Graduate Chair and Co-Chair, Dr. Scott Widenmaier and Dr. Veronica Campanucci, highlighted the unanimous approval of a new graduate student seminar structure, as well as discussions on future funding and other graduate program updates.

APP–Surgery Networking Mixer

On April 17, 2025, faculty from the Departments of Anatomy, Physiology & Pharmacology and Surgery gathered at the newly reopened Faculty Club for an evening of conversation and connection. The goal of this event was to strengthen relationships between the two departments and spark potential future research collaborations.

APP attendees included Drs. Asmahan AbuArish, Heather Szabo-Rogers, Valerie Verge, Changiz Taghibiglou, Dean Chapman, Sebastien Gauvrit, and Bruna Bonavia-Fisher, along with Department Head Dr. Thomas Fisher. They were joined by an equal number of colleagues from Surgery, including their Department Head, Dr. Michael Kelly.

Attendees shared that they enjoyed the discussions and the chance to build interdisciplinary connections. The hope is that the relationships formed during the event will support new collaborative projects, with plans to explore similar mixers with Surgery and other clinical departments in the future.

Department Events

Canadian Lipid and Vascular Summit 2025 (CLVS2025)

The Canadian Lipid and Vascular Summit 2025 (CLVS2025)—a joint meeting between the Canadian Lipoprotein Conference (CLC) and the Canadian Society of Atherosclerosis, Thrombosis, and Vascular Biology (CSATVB)—was held September 25–28 at the Delta Hotels Bessborough in Saskatoon. The meeting welcomed nearly 100 attendees from across Canada, the United States, and South Korea and highlighted the latest research in lipid and lipoprotein metabolism, atherosclerosis, cardiovascular disease, and metabolic disease.

CLVS2025 featured several named lectures recognizing early-, mid-, and senior-career researchers, a joint symposium between CSATVB and the Korean Society of Lipid and Atherosclerosis (KSoLA), and many opportunities for trainees (PhD and MSc students and post-doctoral fellows) to present their work. The meeting was co-organized by **Drs. Changting Xiao**, **Scott Widenmaier**, and Scot Stone (BMI).

The conference was supported in part by the Altschul Fund, which helped make the meeting possible.

Café Scientifique Saskatoon (Café Sci-YXE)

Café Sci-YXE continues to offer engaging, public-focused science conversations that connect researchers with the broader community. Organized by Dr. Julia Boughner since 2013. Each session features an invited speaker and an open, accessible discussion aimed at anyone with an interest in science—no background required. Faculty, trainees, and staff are always encouraged to attend and bring along friends or family who may enjoy the event.

These events play an important role in strengthening science outreach across Saskatoon by creating an accessible space for the community to connect with research. These free monthly events happen Tuesday evening, downstairs, at Winston's Pub.

Upcoming dates and topics are shared through Café Sci-YXE's social platforms: Facebook (CafeSciSaskatoon), Instagram (@CafeSciYXE), and BlueSky (#CafeSciYXE). Those wishing to receive updates directly can join the mailing list by emailing CafeSciSaskatoon@gmail.com.

Commemorative Service & Body Bequeathal Program

The Body Bequeathal Program allows individuals to make an extraordinary final gift — the donation of their body to support medical education at the University of Saskatchewan.

These donors become teachers to students in Medicine, Dentistry, Physical Therapy, and other health sciences, offering invaluable opportunities to learn directly from the human body and deepen understanding that shapes future care

On May 24, 2025, family members, friends, students, and faculty gathered in Convocation Hall to pay tribute to the 32 individuals whose generous donations made this year's learning possible. The service provides an opportunity to reflect on the deep impact of these gifts and to express heartfelt gratitude to the donors and their loved ones.

The 2025 ceremony was led by student volunteers, with Kirk Haan (APP/Medicine) and Shawn Silver (Medicine) serving as Masters of Ceremony. Students from Medicine, Dentistry, and Physical Therapy took part in a touching candle-lighting tribute, and a reflection was shared by Chantel Richels, a Physical Therapy student. The event also featured moving musical performances by current and past students, including a performance by Matthew Ripley.

Kirk Haan (left) and Shawn Silver (right)

Matthew Ripley, former U of S student

Following the service, guests gathered for a reception with light refreshments — a time to connect, share memories, and reflect together.

Special thanks go to Donna Dodge for her exceptional leadership in coordinating the event, as well as to Michelle Burch and Stacey Schleicher for their support throughout the day. Their care and attention to detail helped ensure the service was meaningful and seamless for all in attendance.

Credits

Edited and compiled by Stacey Schleicher
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Special thanks to the faculty, staff, and students whose contributions and achievements made 2025 an exceptional year for the department.