# BUILDING ON PROGRESS FOR THE FUTURE

CELEBRATING 25 YEARS OF RESEARCH EXCELLENCE AT THE POPULATION HEALTH RESEARCH INSTITUTE



#### Population Health Research Institute

IEALTH THROUGH KNOWLEDGE



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### Salim Yusuf

PHRI Founding and Emeritus Executive Director

As we celebrate 25 years of the Population Health Research Institute, I reflect on our early days. It all started with a small group in Hamilton in 1992, working together to lay the foundations of PHRI, which was officially established in 1999. Today, PHRI has grown into an institution with a global impact, comprising around 400 individuals, including our dedicated scientists. To sustain excellence and productivity, we continue to train and mentor new generations of researchers.

Our research has evolved from focusing on cardiovascular disease and diabetes, to include brain health, perioperative medicine and surgery, stroke, thrombosis, renal diseases, obesity, infectious diseases, nutrition, population genetics, health systems, virtual care with remote automated monitoring technology, and more. With the expansion of our research areas, PHRI tackles complex problems that span social, biological and genetic influences of diseases. PHRI has become a world leader in large clinical trials, population health studies, and epidemiology. Today we concurrently conduct about 50 international studies with tens of thousands of participants.

Together, we have made important discoveries that further our vision of improving health outcomes for people around the world and challenged conventional thinking in several areas. This has been possible through identifying and addressing the gaps in current knowledge and science or at times questioning established dogma. With this mindset and by creating an environment that encourages our researchers to collaborate across disciplines and take on major health challenges, we have influenced health guidelines and practice worldwide.

While we have many successes to celebrate, just as importantly, we have withstood threats that could have undermined our future successes. We are indebted to those at McMaster University and Hamilton Health Sciences who have supported us, but most importantly for the selfless leadership of the individuals who have served on our Executive Committee. I am grateful for their enormous contributions.

We should be proud of what we have accomplished together over the past three decades, and I am optimistic that PHRI will preserve its culture, continue to tackle current and emerging health challenges and advance health globally.

## Hertzel Gerstein

**PHRI Interim Executive Director** 

Today, PHRI stands as a world-class research institute, bringing together top health practitioners and researchers from across Canada and around the globe, with one shared mission: to improve health outcomes worldwide.

At PHRI, we take pride in our work, the diverse research areas we cover, and our committed people. Together, these have made Canada a place where knowledge is generated and where evidence-based care is implemented. Over the years, our research programs have expanded to address both common and emerging health issues, many of which have not been studied before. This was made possible through the strong research infrastructure that we built, which has facilitated our ability to keep growing and continue exploring new areas.

What truly defines PHRI is our dedicated individuals and our culture of sharing resources to ensure that all our research studies can reliably answer the questions they are asking. We also value the partnerships we've built over the years, supporting a collaborative environment through the national and international networks we've been part of. We will continue to build on our achievements and discoveries that have shaped healthcare practices and guidelines. Our focus remains on asking the right questions and generating knowledge that benefits people both in Canada and globally.

### Paul O'Byrne

Dean and Vice-President, Faculty of Health Sciences, McMaster University



The Population Health Research Institute (PHRI) has had an extraordinary local, national, and global impact on health care research and practices. Since its 1999 formation out of Dr. Salim Yusuf's cardiology research group, PHRI's research areas have expanded to include brain health, stroke, thrombosis, the environment and health, obesity, health systems, and beyond.

For 25 years, this joint institute of McMaster University and Hamilton Health Sciences has addressed global health challenges with landmark trials and epidemiological studies. With thousands of papers, research in more than 100 countries around the globe and 1.5 million study participants, PHRI's impact is significant.

I am delighted to celebrate the 25th anniversary of PHRI, a world leader in large clinical trials, population health studies, and epidemiology expertise. I look forward to what lies ahead for this globally renowned institute.

Tracey MacArthur President and CEO, Hamilton Health Sciences

As an academic health sciences institution, research has been a cornerstone in our pursuit of care excellence for decades. Now, as we think about the future of Hamilton Health Sciences, our research enterprise will continue to be a focal point in advancing our stature as one of Canada's leading hospitals.

The Population Health and Research Institute (PHRI) has been and remains integral to making this a reality. PHRI has led significant advancements to improve care in heart disease, stroke, thrombosis, diabetes and surgery both in Canada and around the world. The commitment, imagination and outstanding contributions of everyone within this institute continually raise the bar and bring immense value to our health system.

The high-impact discovery that happens at PHRI will ensure that Hamilton Health Sciences remains ready to address the healthcare needs of all patients today and in the future.

Congratulations!



## PHRI: 25 Years of Impact and Vision

The Population Health Research Institute (PHRI) leads evidence-based research that addresses a wide range of health challenges in Canada and around the world. PHRI brings together bright and driven researchers to conduct large high-impact studies that aim to improve global health outcomes and inform healthcare guidelines and practices for common and neglected conditions.

Mission To conduct research that improves major health outcomes for people around the world.

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#### Vision

To transform health outcomes through pioneering research, operational excellence, and collaborative partnerships.

105 COUNTRIES 23,000 SITES 1.33 million Participants in PHRI studies **403 Researchers and Staff 224 COMPLETED STUDIES** 60+ Ongoing Studies **11 GLOBAL REGULATORY APPROVALS** (5(0)(0)(0)+2Publications

## A Global Research Network

Today, PHRI's reach spans 105 countries, where we conduct global studies using various methodologies including clinical trials, large observational studies, and digital health technologies.

This established network is essential to PHRI's success. In these countries, our sites are led by scientific experts who collaborate closely with health organizations, governments, and industry and oversee research activities to ensure the highest quality of our research.

#### **AFRICA**

Botswana, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, Sierra Leone, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe, Benin Republic, Namibia, Seychelles

#### ASIA

Afghanistan, Bangladesh, China, Hong Kong, India, Indonesia, Iran, Israel, Japan, Kazakhstan, Republic of Korea, Kuwait, Kyrgyzstan, Lebanon, Malaysia, Nepal, Pakistan, Palestinian Territory, Philippines, Qatar, Saudi Arabia, Singapore, Sri Lanka, Taiwan, Thailand, United Arab Emirates, Bahrain, Oman, Yemen

#### EUROPE

Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Macedonia, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Belarus, Croatia, Slovenia

#### **OCEANIA**

Australia, New Zealand

#### NORTH AMERICA

Canada, El Salvador, Guatemala, Mexico, United States, Bermuda, Cuba, Jamaica

#### SOUTH AMERICA

Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela





## Shaping Global Health Policy and Clinical Practices

Over the past quarter century, the range of studies led by PHRI has expanded from cardiovascular disease and diabetes, to include brain health, perioperative medicine and surgery, stroke, thrombosis, renal diseases, obesity, infectious diseases, nutrition, population genetics, health systems, virtual care with remote automated monitoring technology, and more.

Through large clinical trials and observational studies, fostering an interdisciplinary collaboration environment and establishing international partnerships, PHRI generates high-impact research that has contributed to major changes in international guidelines and clinical practices. The findings of our research over the past decades have advanced our understanding of the diseases in question and transformed the prevention and treatment of some of the world's most pressing health challenges.

In patients with STEMI and multi-vessel coronary artery disease, a strategy of complete revascularization with multi-vessel percutaneous coronary intervention (PCI) was superior to a strategy of culprit lesion-only with PCI in reducing the composite of cardiovascular death or new myocardial infarction over a median follow-up of 3 years (COMPLETE). As a result, complete revascularization received Class 1A recommendations in both the American College of Cardiology/American Heart Association (ACC/ AHA) and the European Society of Cardiology (ESC) revascularization guidelines.



The first randomized trial to demonstrate that reducing bleeding prevents death in patients with ACS treated with anticoagulants, the **OASIS V** trial, found that fondaparinux was as effective as enoxaparin at reducing thrombotic events, but it halved the rate of major bleeding, leading to lower long-term mortality. As a result, fondaparinux became a Class 1 indication in ACC/AHA guidelines for treatment of patients with ACS.



Muscle strength is an under-recognized marker of prognosis, highlighting its potential importance in assessing long-term health outcomes (**PURE**).

Cancer is likely to become the largest cause of death internationally within a generation (**PURE**).



Analyses of the CURE and ACTIVE trials showed pharmacogenetics are not predictive of outcomes in chronic clopidogrel therapy. On the other hand, analysis of the RE-LY trial data identified a novel pharmacogenetics association with safety in patients treated with dabigatran.

Higher concentrations of plasma ACE2 were associated with an increased risk of mortality and major cardiovascular events such as heart failure, stroke, and myocardial infarction (**PURE**).

The polygenic risk for coronary artery disease is more prevalent and of greater magnitude than the Mendelian genetic risk. This was listed among AHA Top 10 advances of 2018.



Most cryptogenic strokes are embolic and do not benefit from anticoagulation, as demonstrated by the **NAVIGATE** trial. Several secondary trials have been initiated to address this new stroke subtype, known as Embolic Stroke of Unknown Source.

Anticoagulating survivors of intracranial hemorrhage with atrial fibrillation results in greater harm than benefit, as shown by the **ENRICH-AF** trial, leading to widespread changes in practice.

FXIa inhibitors are safe and potentially effective for stroke prevention. (AXIOMATIC-SSP and PACIFIC-STROKE).

In the treatment of acute coronary syndrome (ACS), adding a P2Y12 inhibitor (clopidogrel) to aspirin reduced the composite of death from cardiovascular causes, nonfatal myocardial infarction, or stroke when started early and continued for up to one year (**CURE**). As a result, ACC/AHA and ESC guidelines gave a Class 1A recommendation for clopidogrel to be added to aspirin as standard therapy for patients ACS.





Long-acting insulin safely lowers glucose levels in high-risk individuals with type 2 diabetes, with a neutral effect on death, cardiovascular, and other serious health outcomes (**ORIGIN**)

Dulaglutide reduces heart attacks and strokes in middle-aged individuals with type 2 diabetes, reduces glucose, blood pressure, and weight, and may reduce cognitive decline and erectile dysfunction (**REWIND**). This trial led to regulatory approvals for use in patients without cardiovascular disease and for stroke prevention.



Nine simple, easily measurable and modifiable risk factors are associated with more than 90 per cent of the risk of myocardial infarction globally in all regions (52 countries) and major ethnic groups of the world (INTERHEART). Ten simple risk factors are associated with about 90% of the risk of stroke globally (33 countries) and in all ethnic groups (INTERSTROKE). These findings were incorporated into World Health Organization (WHO) and other guidelines.



Ramipril reduces cardiovascular outcomes in high-risk individuals with and without diabetes (HOPE and MICROHOPE). This led to regulatory approvals in more than 40 countries and updates to guidelines for cardiovascular prevention.



Dabigatran reduces the risk of stroke compared to warfarin in patients with atrial fibrillation (RE-LY). Combination of clopidogrel and aspirin is superior to aspirin in reducing strokes in patients with atrial fibrillation (ACTIVE). In patients with atrial fibrillation who are unable to tolerate warfarin, apixaban prevents strokes (AVERROES).

The **ASSERT** trial demonstrated a 2.5-fold increase in stroke risk among patients with implanted pacemakers and defibrillators who had shortlasting, asymptomatic, subclinical atrial fibrillation. The **ARTESIA** trial demonstrated that treatment with oral anticoagulant apixaban could reduce this risk.

Rates of cardiovascular disease and death are higher in poorer countries and rural communities (despite lower prevalence of risk factors), possibly due to lower education levels and limited access to proven treatments. Low-fat diets are neutral or even harmful, while salt intakes that are too low or too high have adverse effects. Diets with a high glycemic index are also harmful. Both indoor and outdoor air pollution are major risk factors (**PURE**). These findings are influencing global prevention guidelines.

The low-cost polypill reduces cardiovascular events and mortality by one third (**TIPS 3** and **HOPE 3**). Polypill included in WHO list of essential medicines. STROKE OR SYSTEMIC EMBOLISM







Omega 3 fatty acids (ORIGIN) and vitamin E (HOPE) have neutral effects on serious health outcomes.

Low dose rivaroxaban plus aspirin - a new antithrombotic strategy - reduces the composite of myocardial infarction, stroke, amputation and death in patients with coronary artery disease or peripheral arterial disease compared to aspirin alone (**COMPASS**). Widespread regulatory approvals for low-dose rivaroxaban.



Perioperative betablockers while reducing myocardial infarction increase risk of stroke and death in those undergoing non cardiac surgery (POISE I) - thereby reversing practice guidelines which were based on small studies. Research demonstrated dramatic change in practice after the presentation of the results. Among patients undergoing noncardiac surgery, tranexamic acid reduces the risk of the composite of lifethreatening, major, and critical organ bleeding (POISE III)

Radial access is superior to femoral access for coronary intervention for vascular complications (**RIVAL**). Thrombus aspiration routinely in STEMI increases stroke without reduction in mortality, changing guidelines (**TOTAL**). Finally, despite earlier data, colchicine did not improve outcomes but had side effects post MI (**CLEAR SYNERGY**).





Among patients undergoing noncardiac surgery, peak postoperative troponin during the first 3 days after surgery is associated with 30day mortality (VISION). All major societies recommend postoperative screening with troponins. After cardiac surgery, troponin levels associated with an increased risk of death within 30 days are exponentially higher than levels previously recommended to define clinically important periprocedural myocardial injury (VISION Cardiac Surgery).



In patients with atrial fibrillation, concomitant left atrial appendage occlusion at the time of cardiac surgery for another indication reduces the risk of stroke (LAAOS program). Class 1 indication in the American College of Cardiology (ACC) and American Heart Association (AHA) guidelines.



## Quality, High-Impact Research

At PHRI, we conduct research using established methods that ensure reliable and reproducible results. Our work meets the highest standards for evidence-based clinicians and regulators worldwide.

Since 1999, our researchers have published over 6,000 studies, with more than 1,300 in leading journals like The Lancet, New England Journal of Medicine, Circulation, and JAMA. This reflects the high quality and global impact of our research.

#### A list of PHRI Publications is available at www.phri.ca/publications





## Collaborations Spanning Canada and Beyond

Collaboration is at the heart of our work. Through working closely with national and international academic institutions, healthcare organizations, and research networks, PHRI has played a key role in global research efforts. Here are just a few examples of the many collaborative initiatives at PHRI.

#### **Advancing Clinical Trials across Cananda**

#### **Accelerating Clinical Trials (ACT)**

ACT Canada Consortium was established in 2023 with the Canadian Institutes of Health Research (CIHR) funding and pan-Canadian participants to facilitate, optimize, and accelerate the conduct, implementation, and result translation from high quality, high-impact randomized controlled trials to improve health in Canada and globally. Co-chaired by PHRI Deputy Director and Senior Scientist PJ Devereaux and Guy Rouleau from McGill University, ACT has established a network of 34 research networks, 11 clinical trial units, and 20 community hospitals, facilitating collaboration across Canada.

As the coordinating centre for ACT and one of the clinical trial units, PHRI has been an integral part of this initiative.

"PHRI is proud to be the parent organization of this nationwide CIHR-funded initiative. ACT epitomizes the principles and values that have sustained PHRI for the past 25 years."

Hertzel Gerstein, PHRI Interim Executive Director and Senior Scientist



"ACT was established three years ago to improve the ecosystem for conducting clinical trials in Canada. ACT has implemented a Data and Samples Sharing Agreement in over 45 Canadian centres, it has funded 20 Canadian community hospitals embedding study personnel in these hospitals to facilitate bring trials to these communities, held 5 research competitions to fund randomized clinical trials, initiated a competition to select a group to run a single national Research Ethics Board review and approval process with strict timelines, and many other initiatives. ACT has also invested in trails evaluating Canadian biotechnologies. Our goal is to advance healthcare in Canada and beyond, through funding high-impact clinical trials and supporting biotech solutions."

## CANadian Network and Centre for Trials INternationally (CANNeCTIN)

From 2008 and 2013, PHRI led the CANNeCTIN network, a partnership supported by CIHR and the Canadian Foundation for Innovation. This initiative brought together Canadian universities and hospitals to build a stronger foundation for clinical research.

With more than \$7.6 million in funding, CANNeCTIN supported 35 research projects, including large-scale clinical trials and cohort studies, resulting in significant scientific advancements. More than just research, the program focused on mentoring future leaders in cardiovascular and diabetes studies, providing training and support for students and early-career investigators.



#### Clinical Research Laboratory and Biobank (CRLB) – Genetic and Molecular Epidemiology Laboratory (GMEL)

Established in 2020 through the merger of two labs, CRLB-GMEL specializes in specimen reception, sample processing, biobanking, biochemical and biomarker analysis, and largescale population genetic studies. PHRI Senior Scientist Guillaume Paré, leads this state-of-theart facility, which stores four million aliquots of blood and tissue from 85 countries across six continents. The facility includes 8000 ft2 of cryostorage space with expansion capabilities, featuring 63 nitrogen vapor storage tanks (-165°C) and 51 mechanical fridges and freezers (-80°C to 4°C), equipped with temperature monitoring systems and generator backup.



## Transforming Recovery with Remote Care: The PROTECT Laboratory

The PROTECT Laboratory serves as a research and clinical operations command centre for advancing virtual care through remote automated monitoring (RAM). A collaboration between McMaster University, PHRI, and Hamilton Health Sciences, the lab facilitates seamless real-time monitoring of patient data, supports patient-clinician communication, and ensures the privacy of personal health information. Its primary focus is to help patients recover at home after hospital discharge, using cutting-edge RAM technology. A new expansion area for virtual care with RAM research is oncology, focused on patients living with advanced forms of lymphoma and breast cancer.



Photos courtesy of HHS

"This unique facility is designed to promote excellence in virtual care with RAM research and practice through a specialized, integrated audio-visual space, designed on command centre principles, that facilitates situational awareness of changes in patient status and timely clinician response"

Michael McGillion, PHRI Scientist





#### **Collaborating Across Borders**

#### **CANADA-HOPE CIHR Scholarship Program**

Launched in 2006 in collaboration with CIHR and Sanofi-Aventis Canada Inc., the program provided scholarships to young researchers from developing countries to study in Canada for two years before continuing their research back home. Facilitated by PHRI, the program aimed to enhance global health research and foster sustainable research programs. It highlighted Canada's commitment to international research collaboration and innovation in health sciences.

#### World Heart Federation (WHF) Salim Yusuf Emerging Leaders Programme

Developed by PHRI's Founding and Emeritus Executive Director Salim Yusuf in 2014, this program offers training and networking opportunities in cardiovascular health policy and implementation science for healthcare practitioners, researchers, and global health advocates. Over the past decade, with the goal of building a long-term cadre of experts dedicated to reducing premature mortality from cardiovascular disease worldwide, the program has trained more than 250 individuals from over 50 countries.





"I was in the third cohort of the WHF Salim Yusuf Emerging Leaders Programme, focused on hypertension, which marked a pivotal moment in my career. The program connected me with early-career scientists globally and broadened my research perspectives. We received seed

funding for two significant projects, enabling me to collaborate with colleagues on studies that addressed important clinical questions in hypertension. Meeting PHRI international fellows like Clara Chow and learning more about the practice-changing research conducted by Dr. Yusuf and other PHRI scientists on global population health reinforced my commitment to pursuing impactful cardiovascular research at PHRI. That was in 2015, and now, here I am—I literally manifested my current position."

Sandra Ofori, PHRI Investigator

## The Minds Behind Our Research

At PHRI, we're proud of our researchers who drive our mission for excellence in health research. Their commitment to positive change knows no borders and has made a significant impact on healthcare, from Hamilton to Canada and beyond.

Sonia Anand Senior Scientist

Shrikant Bangdiwala Senior Scientist

Emilie Belley-Cote Scientist

Vinai Bhagirath Investigator

Jackie Bosch Scientist

Luciana Catanese Investigator

Noel Chan Scientist

Michael Chong Investigator

David Conen Senior Scientist

P.J. Devereaux Senior Scientist

John Eikelboom Senior Scientist

Rachel Eikelboom Investigator Hertzel Gerstein Senior Scientist

Jeff Healey Senior Scientist

Sanjit Jolly Scientist

Philip Joseph Scientist

Raed Joundi Investigator

Flavia Kessler Borges Scientist

Aristeidis Katsanos Investigator

Maram Khaled Investigator

Andre Lamy Scientist

Matthew Lanktree Scientist

Eva Lonn Senior Scientist

Natalia McInnes Investigator Maura Marcucci Scientist

Michael McGillion Scientist

William McIntyre Scientist

Shamir Mehta Senior Scientist

Andrew Mente Scientist

Dominik Mertz Scientist

Madhu Natarajan Investigator

Julie My Van Nguyen Investigator

Sandra Ofori Investigator

Guillaume Pare Senior Scientist

Lily Park Investigator

Kanjana Perera Scientist Marie Pigeyre Scientist

Zubin Punthakee Scientist

Jason Roberts Scientist

Pavel Roshanov Investigator

J.D. Schwalm Scientist

Mike Sharma Scientist

Tej Sheth Scientist

Thomas Scheier Investigator

Ashkan Shoamanesh Senior Scientist

Jessica Spence Scientist

Koon Teo Emeritus Scientist

Emma van Reekum Investigator Harriette Van Spall Senior Scientist

Mike Walsh Senior Scientist

Michael Wang Investigator

Richard Whitlock Scientist

Jorge Wong Scientist

Salim Yusuf Senior Scientist











## **Nurturing Tomorrow's Researchers**

Mentorship and training are key to the longevity of PHRI's mission and success. We are committed to training and nurturing the next generation of health researchers, providing them with the tools and expert knowledge they need to succeed.

The training programs at PHRI have shaped the skills of around150 research fellows and students (60% Canadian and 40% International). Many of these researchers have become esteemed senior researchers, leading research programs that resonate globally.



#### Mitra Chitsazan

Mitra's main focus includes clinical trial methodology and implementation science. She is involved in the VICTORY-HF trial, a multi-center randomized controlled trial in heart failure.



#### **Marc-Andre d'Entremont**

Marc-Andre's research focuses on coronary artery disease therapeutics, intravascular imaging, and clinical trial methodology. He is involved in the CLEAR trial and the HD-PCI trial.



#### **Mohamed Jalloh**

Mohamed's research focuses on clinical trial methodology and implementation science. Currently, he is involved in the VICTORY-HF Trial



#### **Graham McClure**

Graham's research interests include medical optimization in peripheral vascular disease, antithrombotic therapy following peripheral revascularization, intravascular imaging strategies, and social determinants of health in vascular surgery. He is involved in the LEADER-PAD, CLARITY, LEAAPS, and DANCE trials.



#### **Lonnie Pyne**

Lonnies' research focuses on analyzing cardiovascular outcomes trials examining the effects of interventions on kidney function. Most recently this has involved the COMPASS trial.



#### **Reema Shah**

Reema's current research focuses on diabetes and its complications. She is a co-investigator on a PURE substudy investigating the association between nailfold capillary changes and diabetes, along with related complications such as cardiovascular disease, retinopathy, nephropathy, and hypertension.



#### Kevin Um

Kevin is the principal investigator for the DYNAMIC pilot trial with supervision from Dr. Emilie Belley-Cote. In addition to performing statistical analyses for the LAAOS-III trial (secondary analyses) and DANCE cohort study, he is involved in the DANCE, LIMIT, and LeAAPS trials.



#### **Patrick Wanner**

Patrick's research focuses on optimizing perioperative and post-discharge hemodynamics to prevent postoperative complications.

## Operational Excellence Driving Impactful Research

#### **Program Management**

PHRI's Program Managers ensure the effective and efficient conduct of large-scale, international clinical trials and global health studies. Working closely with the study principal investigator(s), the Program Manager leads a study team in the selection, initiation, and management of the clinical research sites in addition to managing study drug logistics, reviewing the accruing data, and more.





#### **Contract Management**

The Contracts team supports PHRI's research and business needs. They negotiate with stakeholders including private and public funding sources, collaborators, investigative sites, national leaders' offices, and service providers. The team also focuses on improving efficiency in contract negotiation infrastructure at PHRI, including forecasting volumes, budget needs, staffing requirements, and customer service levels.

#### **Quality Assurance**

The Quality Assurance team develops and implements policies and procedures to maintain research quality at all stages through managing quality documents, conducting audits, and continuously improving quality. The team collaborates with the clinical research teams to ensure compliance with regulations across different countries and regions. Their audit function provides independent reviews to meet regulatory requirements.



#### **Biostatistics**

Biostatics develops strong statistical methods and ensures accurate study data. The team handles various types of studies including intervention studies, and epidemiologic studies. Their work includes study conduct, planning, and close-out, involving tasks such as study conduct reporting, statistical analysis plan development, and subsequent publication review.





Information and Communications Technology (ICT) The ICT Department supports study teams with essential infrastructure and skilled staff. Comprised of four specialized teams—operations and infrastructure, solutions and innovation, ICT projects, and clinical research data operations—the department ensures efficient IT support, innovative system development,

validated software delivery, and enhanced data quality

standards at PHRI.

## In Memory of Our Colleagues

We are grateful for the contributions of those who were a special part of our journey. Their commitment has shaped our path, and their legacies continue to inspire us in all that we do.



Heather Arthur 1965-2017



Stuart Connolly 1952-2024



Yannick Le Manach 1972-2020



Bogani Mayosi 1967-2018



Klas Malmberg 1946 -2018



Janice Pogue



Peter Sleight 1930-2020



Khalid Yusoff 1948-2021

## Looking Ahead

PHRI is committed to maintaining a culture of scientific rigour, curiosity, efficiency, and diversity. Our future success will be defined by our contributions to human welfare, the collaborations we have fostered, and the development of future generations of researchers, all while pushing new boundaries to stay ahead of new and emerging science and research.

We will continue to nurture world-class researchers and support an environment where ideas can flourish. PHRI is committed to being a hub of inquiry and original thought, leading practice-changing research, and advancing global health.

Our journey forward is marked by a commitment to excellence, collaboration, and a persistent pursuit of knowledge to benefit humanity.



## **Thank You!**

As PHRI marks 25 years of pioneering research and innovation, we are grateful for everyone who has contributed to our journey.

We are grateful to our researchers and staff, whose dedication and hard work have made PHRI a leader in our field. Your commitment is key to our success.

To our collaborators in Hamilton, across Canada, and around the world, thank you for your invaluable partnerships. Your support has helped make a significant impact on global healthcare.

We also appreciate the organizations whose funding has been crucial to our work. Your support enabled us to push the boundaries of research and improve health outcomes worldwide.



## Population Health Research Institute

HEALTH THROUGH KNOWLEDGE

Hamilton Health Sciences



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