



# Annual Report

2023 - 2024

**LIBIN**  
CARDIOVASCULAR  
INSTITUTE

# Connecting cardiovascular research, patient care and education in Southern Alberta.



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# Executive Summary

**T**he Libin Cardiovascular Institute (LCI) is a joint entity of Alberta Health Services and the University of Calgary that connects world-class cardiovascular research, patient care and education in southern Alberta, Saskatchewan, and eastern British Columbia, serving a population of about two million. Our members include physicians, clinicians and other health professionals, researchers and trainees from four large University of Calgary faculties, 10 faculty of medicine departments, four Alberta Health Services (AHS) clinical departments and five AHS hospitals. Together, our members and facilities represent an exciting opportunity to address the changing cardiovascular health needs within our communities.

The year 2023-2024 was characterized by sustainability and the achievement of much-anticipated Institute goals. Our members continued to push the boundaries of research and medicine. The Institute continued to focus on four main initiatives: the Libin Precision Medicine Initiative (LPMI), the Women's Cardiovascular Initiative (WCHI), the Person to Population Initiative (P2), and the Clinical Innovation Initiative (CII).

LPMI continued work to enhance cardiovascular data access to all stakeholders and strategic partners to catalyse research and innovation in data-driven care. This year, the Institute also welcomed Dr. Roopinder

Sandhu as the successful recipient of the Martha Brauer Chair in Women's Cardiovascular Health Research and the director of the WCHI. With her support and leadership, we anticipate there will be significant upcoming growth in the WCHI program.

Clinical and scientific research and education remain cornerstones of the Institute's mission. Despite continued economic challenges and significant governance changes to AHS, the LCI membership published 987 unique publications in the past year, which received 5,980 global citations.

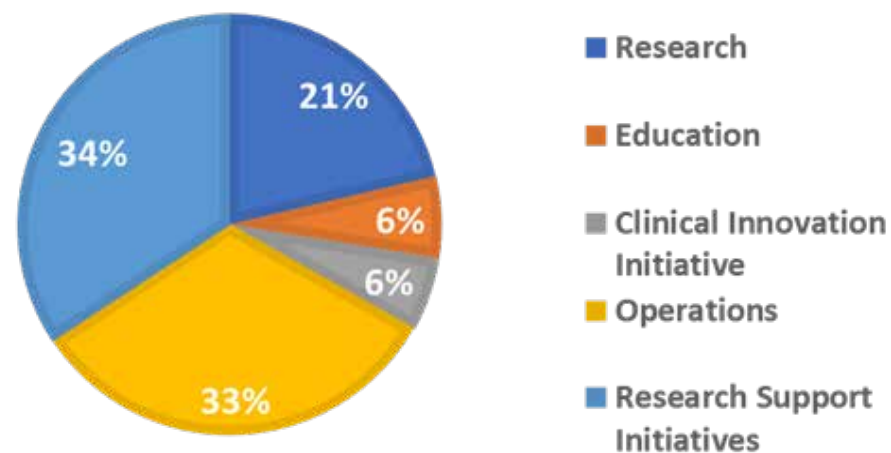
Our trainees also saw substantial success. For the 2023-2024 period, more than 50 scholarships were granted. That includes 15 travel awards, which enabled our trainees to present their research and insights at various prestigious conferences. We increased scholarship amounts to help ease the burden of cost-of-living increases. We look forward to continuing our increased support of Libin trainees.

# Financial Summary

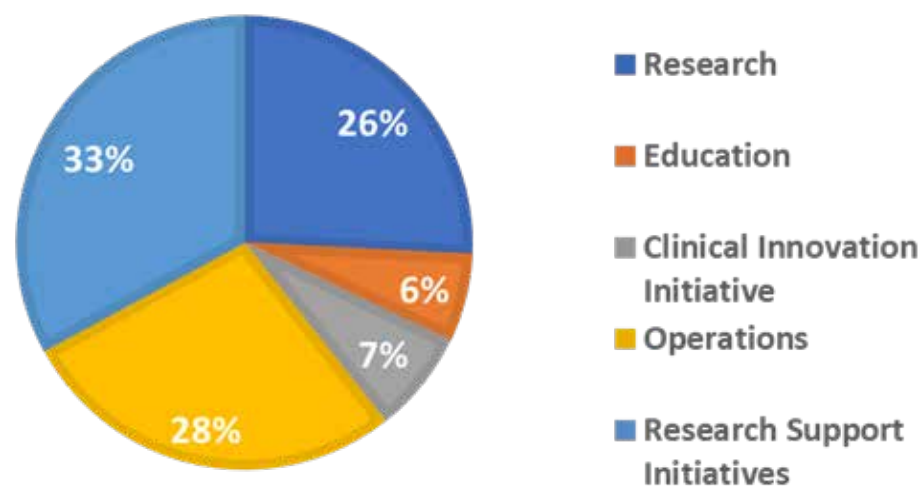
## OVERVIEW

The financial planning and goals of the institute for the 2023-2024 year were very successful. LCI actuals were within 1.2% of our anticipated budget of \$3.7M, which includes our expenses for research support, education and scholarships, our keystone initiatives and our operational expenses.

### BUDGET 2023-2024



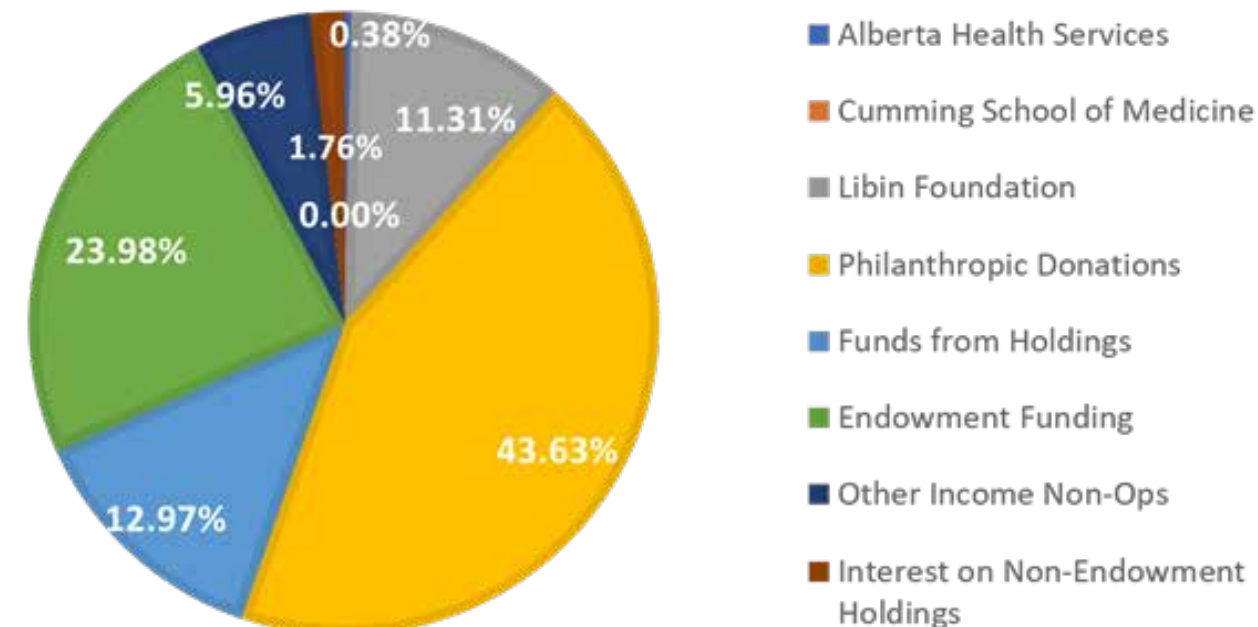
### ACTUALS 2023-2024

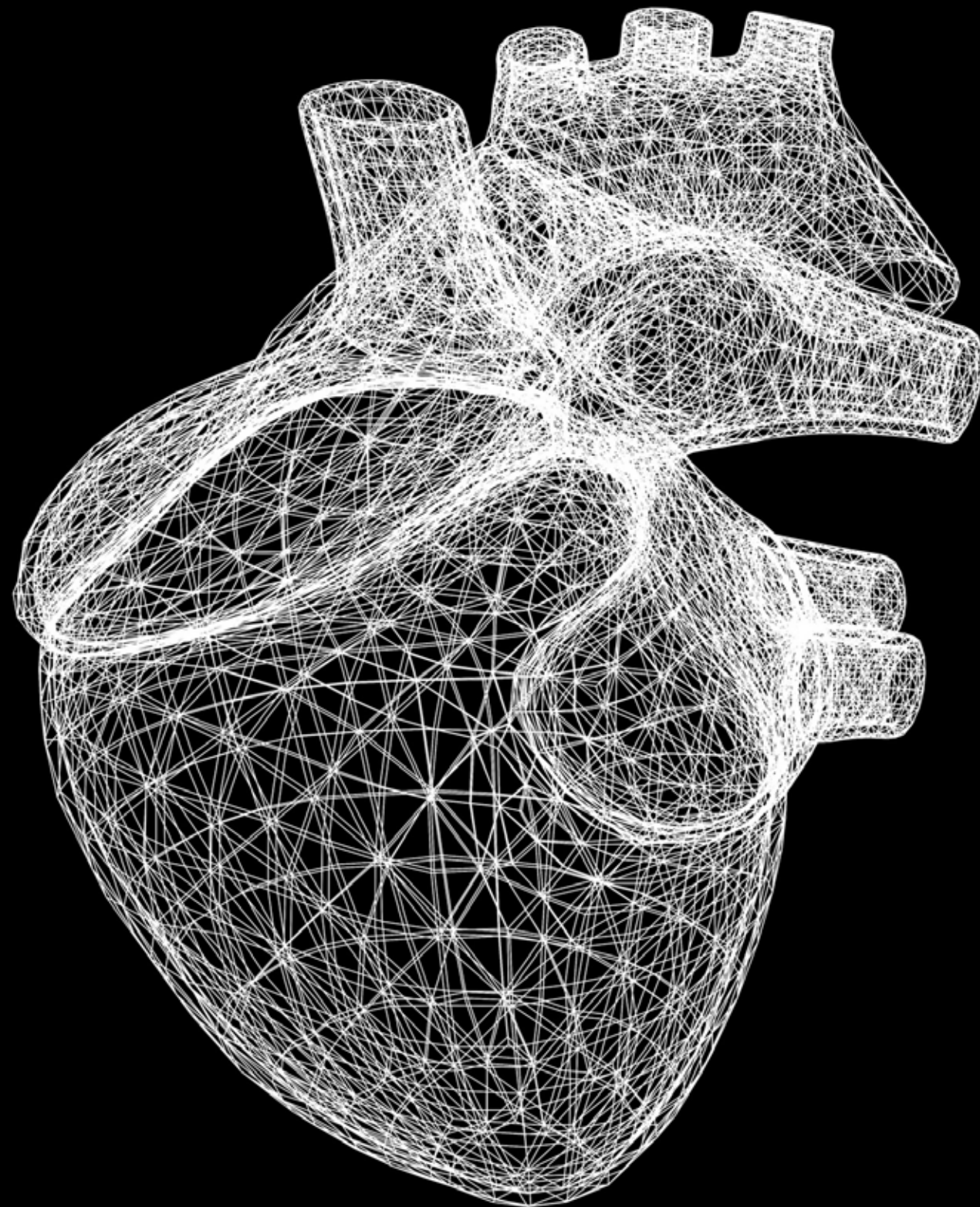


## FUNDING SOURCES

The LCI receives the majority of its annual funds through philanthropic donations. These funds go towards supporting our four initiatives, our research and education support, and our operational expenses. We are extremely grateful to our community for the contributions they make towards furthering cardiovascular research and education.

### REVENUE OVERVIEW 2023-2024 (OPERATIONAL AND NON-OPERATIONAL)





# Membership

## OVERVIEW

**A**s of April 2023, the Libin Cardiovascular Institute had 174 active research members who held University of Calgary academic appointments across various research and clinical disciplines, as well as an additional 51 clinical members. Together, these groups represent our core membership who provide support to 317 trainees in research and clinical departments.

## RETIREMENTS & RECRUITMENTS

**Congratulations to the following members who retired in the year 2023-2024:**

- Dr. Francios Charbonneau
- Dr. Lorne Brent Mitchell
- Dr. Richard Novick
- Dr. Teresa Kieser

**Over the last year, the LCI has had the pleasure of welcoming the following recruits to its membership:**

- Dr. Liane Arcinas
- Dr. Brennan Ballantyne
- Dr. Jonathan Blankenstein
- Dr. Xiao Cai
- Dr. Matthew Cheung
- Dr. Arshi Rajesh
- Dr. Jessica Patzer
- Dr. Juan Russo
- Dr. Roopinder Sandhu
- Dr. Nishant Sharma
- Dr. Yuan Zhangarch



# Research & Education

## OVERVIEW

Cardiovascular research and education are the primary drivers of the Libin Cardiovascular Institute. Our members are continuously working to drive innovation, further cardiovascular care, and train the next generation of cardiovascular researchers.

In 2023-24, LCI members were featured in 986 publications, with 126 of these listing an LCI member as the first author. LCI members also secured \$31.69 million in research funding through donations and external grants.

|  |                  |
|--|------------------|
| <b>Number of Projects Funded</b>                       | <b>322</b>       |
| <b>Research Funds Received</b>                         | <b>\$31.69 M</b> |
| <b>Tri-Council (CIHR, NSERC, SSHRC) Funds Received</b> | <b>\$11.83 M</b> |
| <b>Number of Publications</b>                          | <b>987</b>       |
| <b>Number of Citations</b>                             | <b>5,980</b>     |
| Source: Faculty Analytics, Libin Annual Report 2024    |                  |

## HIGHLIGHTS

### Equipment Competition

In November 2023, the LCI launched its annual Research Equipment Competition. The LCI was able to fund six out of seven requests for new research equipment as well as provide support for equipment maintenance. This funding is critical for supporting and enhancing the research programs of LCI members.

### Michael & Terry Wilson Cardiovascular Research Innovation Fund

The LCI received a generous donation from Michael and Terry Wilson to support multi-investigator teams proposing collaborative, innovative, translational projects in the areas of cardiovascular health and disease and/or projects focused on emerging priority areas within the LCI up to \$250,000 per project. The inaugural competition received 10 applications and the LCI funded two proposals:

- Dr. Satish Raj, “To characterize and quantify changes in the full plasma proteome to define proteins involved in disorder of LBP and its endotypes.” - \$190,000
- Dr. Vaibhav Patel, “Role of epicardial adipose tissue in cardiovascular disease.” - \$250,000

We look forward to seeing the exciting outcomes of these research focuses.

### Tine Haworth Cardiovascular Research Day

The LCI hosted the annual Tine Haworth Cardiovascular Research Day on Monday, April 24, 2023. The day included outstanding research presentations (talks and posters) by faculty as well as basic/translational and clinical trainees. The E.R. Smith Lectureship featured Dr. Paul Armstrong, OC, MD, a distinguished university professor and renowned specialist in acute coronary disease with the Department of Medicine (Cardiology) at the University of Alberta. Dr. Armstrong presented “Travels with ST Elevation Myocardial Infarction: Lessons Learned from a Clinical Investigator” and “Reflections on Career Development from a Clinical Investigator,” offering valuable insights for LCI trainees.

## Scholarships & Awards

The Libin Cardiovascular Institute remains dedicated to the educational advancement of our trainees. For the 2023-2024 period, more than 50 scholarships and prizes were awarded. That included 15 travel awards, which enabled our trainees to present their research and insights at various prestigious conferences. Our trainees showcased their work at events such as the 34th International Symposium on the Autonomic Nervous System, the American College of Cardiology Annual Conference, the American Society of Nephrology’s Kidney Week 2023, the CEEHRC 9th Annual Canadian Conference on Epigenetics, CMR 2024, the Organization for the Study of Sex Differences Annual Meeting, Obesity Week, and the Latin American Association of Pediatric Nephrology’s XIII ALANEPE Congress, where they received several competitive awards.

## Libin Cardiovascular Institute Trainee Organization (LCITO)

Established in 2022, the Libin Cardiovascular Institute Trainee Organization (LCITO), under the leadership of Chantel Rytz, a doctoral candidate in Medical Sciences, enhanced and supported the training experience of postdoctoral scholars and graduate students at the LCI. The LCITO fostered greater peer engagement and was instrumental in providing educational, networking, and career development opportunities. This year, to facilitate better networking, the LCITO (in collaboration with the LCI) hosted a Trainee Meet and Greet event at the Banquet Bar, offering a more informal setting for new graduate students to learn about the organization and network with supervisors and institute members.

The LCITO has also excelled in offering leadership opportunities, creating a structured committee with various positions for trainees to enhance their professional skills and CVs. We anticipate further growth and success for the LCITO in the upcoming year.

# Research & Publications

## ADVANCING CARDIOVASCULAR KNOWLEDGE

In 2023-24, Libin Cardiovascular Institute (LCI) members contributed significantly to cardiovascular research, publishing 964 peer-reviewed publications, with 358 as first, last, or single-author publications. These works continue to shape the field and advance our understanding of cardiovascular health.

## NOTABLE PUBLICATIONS

LCI researchers published in leading high-impact journals, addressing critical topics in cardiovascular health. Below are some highlights:

### Dr. David Campbell & Dr. Bradon Manns

*European Heart Journal*

[“Incorporating principles from commercial advertising into cardiovascular health promotion efforts”](#)

### Dr. Derek Chew

*Circulation*

[“Cost-Effectiveness of Vericiguat in Patients With Heart Failure With Reduced Ejection Fraction: The VICTORIA Randomized Clinical Trial.”](#)

### Dr. Wayne Chen

*Circulation Research*

[“Increased Ca<sup>2+</sup> Transient Underlies RyR2-Related Left Ventricular Noncompaction.”](#)

### Dr. Aaron Phillips

*Science*

[“Paralysis under pressure.”](#)

### Dr. Paul Fedak & Dr. Robert Rose

*Circulation: Arrhythmia and Electrophysiology*

[“Natriuretic Peptide Receptor B Protects Against Atrial Fibrillation by Controlling Atrial cAMP Via Phosphodiesterase 2.”](#)

### Dr. Sandra Dumanski & Dr. Sofia Ahmed

*Journal of the American Heart Association*

[“Sex- and Gender-Based Reporting in Antihypertensive Medication Literature Informing Hypertension Guidelines.”](#)

### Dr. Robert Rose

*Circulation: Arrhythmia and Electrophysiology*

[“Natriuretic Peptide Receptor B Protects Against Atrial Fibrillation by Controlling Atrial cAMP via Phosphodiesterase 2”](#)

### Dr. Sofia Ahmed & Dr. Shafeena Premji

*Hypertension*

[“Association Between the Route of Administration and Formulation of Estrogen Therapy and Hypertension Risk in Postmenopausal Women: A Prospective Population-Based Study”](#)



# Major Awards & Recognitions

Our members continue to earn prestigious national and international accolades for their contributions to cardiovascular research and clinical excellence.

## Early-Career & Senior Investigator Awards

- **Dr. Sandra Dumanski** – Canadian Women’s Heart Health Alliance Early-Career Investigator Award
- **Dr. Satish Raj** – Canadian Women’s Heart Health Alliance Senior Investigator Award

## Fellowships & Scholarships

- **Dr. Lockhart Jamieson (Supervisor: Dr. Robert Rose)** – CIHR Postdoctoral Fellowship
- **Julien Rimok (Supervisor: Dr. Aaron Phillips)** – Vanier Scholarship
- **Dr. Guosong Wu (Supervisors: Dr. Tyler Williamson & Dr. Yuan (Shawn) Xu)** – CIHR Postdoctoral Scholarship

## Research & Innovation Awards

- **Dr. Omid Haji-Ghassemi** – Canada Foundation for Innovation John R. Evans Leaders Fund Award, Heart and Stroke Early Investigator Award
- **Dr. Marcello Tonelli** – 2023 Clarivate Highly Cited Researcher in Clinical Medicine

## Career Achievement & Leadership Awards

- **Dr. Mouhieddin (Dean) Traboulsi** – Canadian Association of Interventional Cardiologists (CAIC) Outstanding Achievement Award (October 2023)
- **Dr. Maria Santana** – International Society of Quality of Life Research President’s Award

# Research Grants & Funding

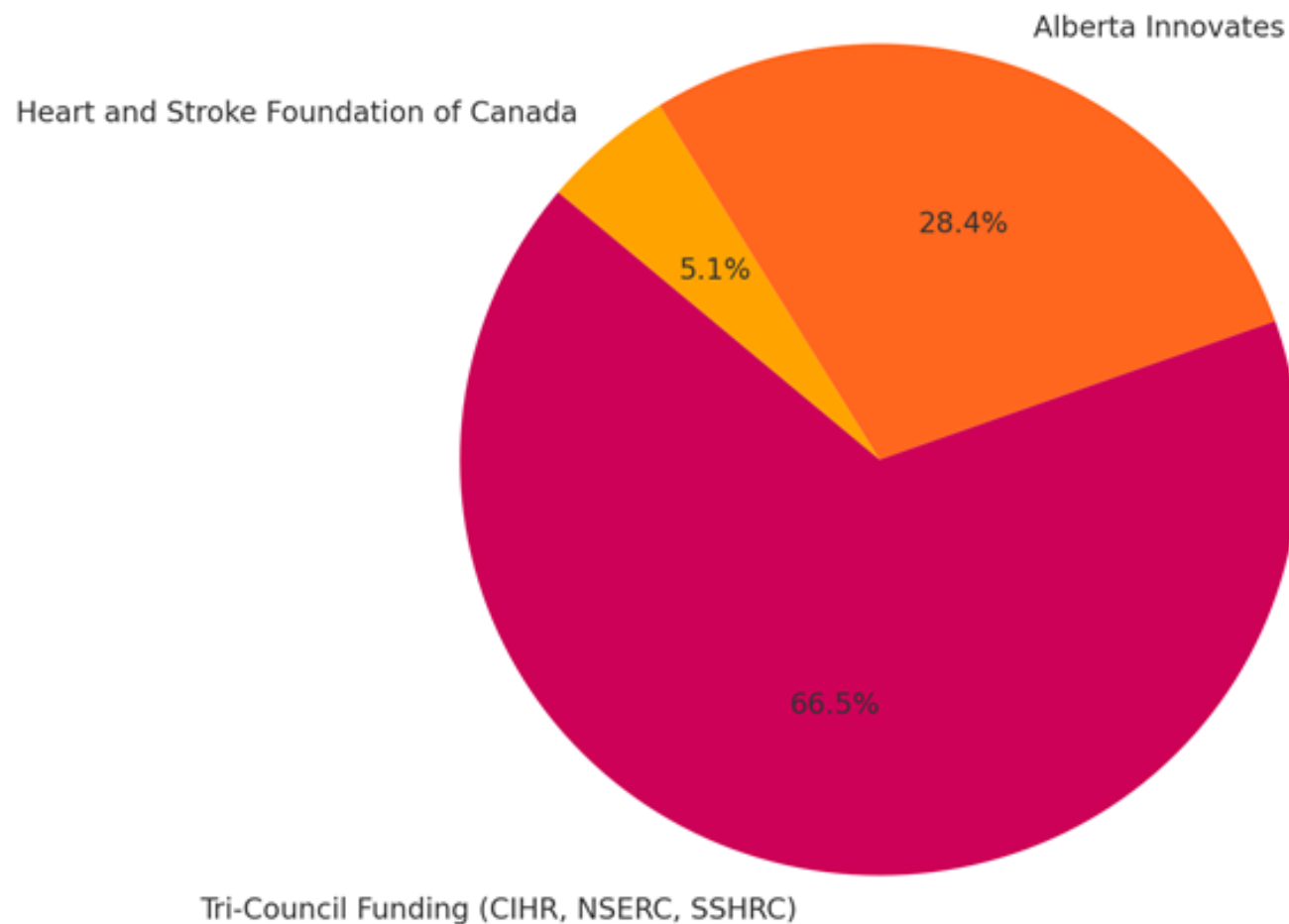
## FUNDING OVERVIEW

In 2023-24, members of the Libin Cardiovascular Institute secured a total of \$31.36 million in research funding to advance cardiovascular science and innovation.

## BREAKDOWN OF RESEARCH FUNDING

- **\$10.62M** – Tri-Council Funding (CIHR, NSERC, SSHRC)
- **\$4.53M** – Alberta Innovates
- **\$815.48K** – Heart and Stroke Foundation of Canada

LCI Research Funding Breakdown (2023-24)



## HIGHLIGHTED RESEARCH GRANTS

### NSERC Discovery Grants

**Dr. Marc Poulin** – *Mechanisms to Optimize Sleep and Daytime Function with Prolonged and Repeated High Altitude Exposure*

**Dr. Jennifer Thompson** – *Exploring the Role of Reactive Oxygen Species as Adipocyte-Derived Signals for Differentiation of the Progenitor Pool*

### CIHR Project Grant Awardees

**Dr. Andrew Braun** – *Restoration of Vascular Endothelial Cell Function as a Novel Strategy to Mitigate T2D-Associated Cardiovascular Disease*

**Dr. Justin Deniset & Dr. Paul Fedak** – *Defining Protective Pericardial Immune Mechanisms in Cardiac Remodeling Following Myocardial Infarction*

**Dr. Lin Yang (Co-investigator alongside Dr. Christine Friedenreich)** – *Alberta Moving Beyond Breast Cancer (AMBER) Cohort Study: Understanding How Physical Activity, Sedentary Behaviour, and Health-Related Fitness are Related to Breast Cancer Survival*

**Dr. Na Li** – [Developing Federated Learning Strategies for Disease Surveillance Using Cross-Jurisdiction Electronic Medical Records Without Data Sharing: Applications to Acute Myocardial Infarction, Hypertension, and Sepsis Detection](#)

**Dr. Tolu Sajobi** – [Characterizing Patient Preferences and Personalizing Risk Information for Optimal Patient-Centered Management of Coronary Artery Disease](#)

**Dr. Sonia Butalia** – [Aiming for Something Sweeter: Supporting Youth with Type 1 Diabetes During Transition from Pediatric to Adult Diabetes Care](#)





# Initiatives

## Precision Medicine Initiative

### OVERVIEW

The Libin Precision Medicine Initiative (LPMI) is a priority initiative of the Libin Cardiovascular Institute aimed at delivering value from large-scale, curated patient health data resources for personalized cardiovascular care delivery. The LPMI team made significant progress in core areas of development in 2023 and has advanced several key priorities that will allow the team to provide support to researchers across the Institute.

### 2023 AT A GLANCE

#### New Approvals

The Director, Dr. James White, was approved for expanded data export into the research data environment from AHS resulting in a massive increase in data under a new waiver of consent. This data is now in development to be processed and linked with other relevant and approved health data to benefit the broader Libin research community.

#### New Staff

The LPMI team expanded to include a hybrid role for management of Collaborations and Strategic Partnerships that works across both the LPMI team and the Personalized Diagnostics Program (PDP) research team. This new role helps to align the interconnected aspects of structured (LPMI) and unstructured (PDP) data resources to provide consolidated data outputs for future research use while managing critical collaborations and external partnerships.

#### New Access

After many months of engaging with our partners at all levels of AHS, our Sr. Data Analyst was approved to add new data sources, increasing the critical infrastructure to our developing data pipeline.

#### New Collaborations

LPMI has bridged the development of our system for structured data with the unstructured data research team of PDP. This alignment and consistency in the data infrastructure will create additional benefits for Libin researchers as we near the final phase of pipeline and ecosystem development. A strong collaboration between Dr. White and the Dept. of Computer Science has further bolstered these programs by incorporating advanced computing expertise into key aspects of the technical build.

#### New Funding Opportunities

LPMI received generous donations to support our pipeline infrastructure and the Clinic Project which will have a tremendous impact on our ability to grow in 2024. Our work has also developed to a level where it was possible to explore opportunities for grant funding to help bolster this program as it continues to move forward. We found great alignment with new funding opportunities and submitted strong applications demonstrating our current abilities and expertise while outlining our vision and potential for the future. We have catalyzed our growing partnerships with other Libin researchers as collaborators and co-PIs as we continue to work closely with many multi-disciplinary experts.

#### New Student Opportunities

The LPMI team supported two undergraduate computer science students in Summer 2023 who worked closely with our Data Engineer to develop substantial code and data infrastructure supports for the data pipeline. We

also began a relationship with the Masters Precision Health program and took a student intern from Nov 2023-June 2024. These student roles are great opportunities to develop capacity in young professionals and provide mentorship in skills related to precision medicine, while also advancing the work of LPMI. We look forward to reporting on the outcome of the inaugural master's program intern and have already been approached to take another student intern for the following year's cohort.

### KEY PROJECT UPDATES

#### AHS Cardiovascular Schema

The schema is an internal data structure in the AHS data environment that was created to harness the vast amounts of data that currently exist in many separate data sources. Our dedicated AHS Senior Analyst continues to work closely with all AHS stakeholders and the LPMI team to add approved cardiac data sources into this expanding schema that allows us to organize and de-identify data for export to a research environment. New data sources and additional research approvals allowed for continued expansion of this internal schema in 2023, including additional echocardiogram and electrocardiogram data. New code was developed to improve processes for de-identification of patient data prior to export for research use. Migration of the Cardiovascular Imaging Registry of Calgary (CIROC) to the internal Libin schema was also completed in 2023, substantially expanding the LPMI data ecosystem, establishing a framework for all future data acquired, and merging these two key programs into a singular data resource for Libin.

#### Libin Cardiac Data Research Infrastructure

During 2023, the LPMI Data Engineer developed a data pipeline with all core functionality needed to expand the CIROC model for broader, Libin-wide use. The pipeline functionality was tested end-to-end with great success. The pipeline and data lakes framework was also tested through a prototype to explore the possibilities for cloud implementation and initial steps were taken with our partners at AHS to explore the requirements and permissions to move towards cloud options in the future, which will allow greater management and use of this data for research and advanced computing options.

#### The PULSE Clinic Project

This flagship project continues to move forward, navigating complex developments in alignment with AHS, University of Calgary IT, and Research Computing Services, and working closely with the selected vendor to operationalize this work. During 2023, we obtained legal approval from UCalgary, UCIT approval for the backend data flow from vendor source to our research data environment, as well as updated Research Ethics Board, Health Systems Access, and Data Disclosure Agreement approvals. Many iterations of the core patient survey were circulated and refined with input from experts in patient engagement, women's health, and all clinicians and practitioners at the initial site for implementation.



### Mozell Family Analysis Core

The Mozell team of dedicated biostatisticians and data analysts continue to provide value to the research projects of Libin members. In 2023 the Mozell team supported a variety of research projects, supported grant applications, and contributed to scientific publications and presentations. The team also implemented a new project request system with an integrated internal tracking workflow to better allow us to monitor and assess researcher needs, balance Mozell workload, and identify potential areas of biostatistical skills and data analysis techniques to continue to build the team capacity to support the diverse needs of cardiac researchers across the Institute.

### Looking Forward

The LPMI team is moving towards an exciting final phase of data pipeline and infrastructure development. As we move from a build phase towards testing, piloting, and launch, we will be implementing a new strategy to engage key stakeholders and advisors to ensure that we are identifying and designing our next phase of deliverables to meet the broad needs of Libin members and to ensure we have the internal structure and resources required to provide optimal support. We are also working closely with AHS colleagues and leadership to obtain approvals for cloud infrastructure for our

approved data that will allow us to optimize the use and security of de-identified health data, both for research and for developing prediction models and clinical decision-support tools that have the potential to benefit cardiac patients across the Calgary Zone and beyond.

We will also continue investing in ongoing partnerships and collaborations with cardiac stakeholders at all levels, institutions, and across the province while continuing to mobilize multi-disciplinary relationships and catalyze new connections that will enhance the work of LPMI. As we continue the final stages of creating a functioning system that can meet the requests of Libin members, we are excited to realize the continued goal of supporting the research and clinical program goals of the LCI and its members.



# Women's Cardiovascular Health Initiative

## OVERVIEW

The Libin Cardiovascular Institute Women's Health Initiative (WCHI) was established in 2019, following an anonymous donation. Since its inception, 47 researchers and 65 trainees at the University of Calgary have joined the initiative. Dr. Sofia Ahmed served as the Initiative Lead from 2019 to 2023. In winter 2023, after an extensive recruitment process, Dr. Roopinder Sandhu took on the roles of Director of the Women's Cardiovascular Health Initiative, Medical Director of the Women's Cardiovascular Health Clinic, and the Martha Brauer Chair in Women's Cardiovascular Health.

The WCHI is a collaborative and transdisciplinary group focused on transforming cardiovascular health and the healthcare system for women. The initiative aims to address critical knowledge and care-delivery gaps through a comprehensive approach to women's cardiovascular care throughout their lifespan. Under Dr. Sandhu's leadership, the vision is to be a globally recognized center of excellence in women's cardiovascular health care delivery, research, education, and knowledge translation. The mission is to save women's lives by preventing and treating cardiovascular disease in a more personalized and precise way.

## EDUCATION

The goal of the education portfolio of the WI is to raise awareness of the importance of sex and gender considerations in cardiovascular research disease prevention and progression. To encourage more researchers and trainees to incorporate sex and gender considerations in their research, the WCHI supports the academic work of four trainees through a series of annual scholarships and fellowships. These awards are

open to all trainees who are working with a mentor who is a member of the LCI.

Currently, the commitment to training future researchers in women's cardiovascular health costs just under \$100,000 per year. However, we anticipate it will be necessary to increase this in 2024-2025 to meet rising cost of living and CSM mandates.

The WCHI also sponsored smaller awards to recognize women's cardiovascular disease research excellence. These include sponsoring a quarterly trainee travel award, first-author publication awards, and a research day poster award. If funding allows, WCHI would like to include an undergraduate summer stipend award and create a Women's Cardiovascular Clinical Fellowship to parallel the development of the new Women's Cardiovascular Clinic.

## RESEARCH

The goal of the research portfolio is to develop interdisciplinary translational cardiovascular research initiatives to address prevention, diagnosis, and treatment across a woman's life span. Dr. Sofia Ahmed was successful in obtaining CIHR funding through the Planning and Dissemination Grant opportunity in the Spring 2022 [15K]. This award, with in-kind support through the Women's Cardiovascular Initiative [10K], allowed the initiative to host a modified Delphi Process to identify the top 10 research priorities within the areas of women's health. In September 2023, following the results of the Modified Delphi Process, the WCHI announced a catalyst grant competition (25K) to support projects which align with the identified research priorities. It was awarded to Leslie Skeith.

## WOMEN'S SEMINAR SERIES

To support women's health research across the university, the WCHI developed and supports a monthly seminar series to highlight University of Calgary researchers. The series is a hybrid lecture series with a consistent audience base. To increase awareness and foster cross-disciplinary collaboration, this series focuses on Women's Health Research underway at the University of Calgary.

## COMMUNITY ENGAGEMENT

The goal of the community engagement portfolio has been to close the gap between our understanding of cardiovascular disease in women and our actions to address it.

In collaboration with LCI's 20th anniversary celebration, events were planned with a focus on women's cardiovascular health. These include booth presence at wedding fairs, and a women's walk/run. Community resources (pamphlets, bookmarks) with health promotion information were created for these events. We also plan to leverage existing engagement opportunities, like the LCI Anne Gilles Award, which will allow us to honour women in cardiovascular care and research through an award and keynote.

Annually, Dr. Sandi Dumanski coordinates Wear Red Canada activities for the Calgary area. This includes community activities like lighting the Calgary Tower red for a week in February, and local media spots. In the academic year 2023/24 a UCalgary student club was formed to help Dr. Dumanski with the planning efforts for the Wear Red campaign. This club is led by one of the trainee scholarship awardees within the WCHI, Nabilah Gulamhusein. In 2025, in addition to Dr. Dumanski's annual activities, we are planning an awareness-building event at the Foothills Campus for CSM members.

## CLINICAL CARE

The WCHI added a new clinical pillar. The goal is to develop and launch a Women's Cardiovascular Clinic. The clinic's aim is to address cardiovascular health that encompasses a focus on sex-specific cardiac risk factors, identification of unique clinical signs, symptoms, etiologies and presentations in women, access to specialized diagnostic procedures, assessment of mental health, and initiation of guideline-directed medical and device therapies.

In 2023/24, an environmental scan was conducted to provide an overview of the current infrastructure, stakeholders, facilitators, and barriers to establishing a pilot Women's Cardiovascular Health Clinic. We also collected existing strengths within clinical focus areas,

potential referral pathways, and basic working principles to provide a detailed landscape of Calgary's current workforce, clinical gaps, and network partners. Our goal was to identify the scope of the pilot clinic.

# Clinical Innovation Initiative

## OVERVIEW

The Clinical Innovation Initiative (CII) aims to enhance clinical practice by translating research into patient-centered care through collaboration among researchers, clinicians, and the community. It promotes transdisciplinary cooperation, addresses key clinical questions, and ensures excellence in cardiovascular care.

This year, CII offered tailored knowledge translation services, facilitated conferences and workshops, sourced educational materials, developed patient resources, and provided operational process support.

CII's named Libin Groups (Synergy Group, Pioneer Group, and Affinity Group), actively reinforce these objectives by collectively advancing knowledge, building capacity, informing decision-making, and enhancing health impact, aligning with our institutional pillars. The existing groups have benefited from CII's expertise in establishing and advancing program priorities. Some of these groups, having reached the three-year mark, have already transitioned, or are beginning the process of transitioning to self-sustaining models with CII's support in recruitment, digital automation, and sustainable strategies.

## CLINICAL EDUCATION

LCI supported the development and implementation of the Advanced Aortic Surgery and Amyloidosis Fellowship programs. This included the creation of terms of reference for fellowship funding for these

programs. An environmental scan of all fellowships programs across North America was also conducted in Women's Cardiovascular Health. A responsibility matrix (RACI) was created for a linear one-year project plan and curriculum development for this future fellowship program and others.

## CLINICAL CARE & RESEARCH

### SYNERGY GROUP: Calgary Aortic Program (CAP)

CAP established its program in 2019 with the aim of revolutionizing aortic disease management, breaking down siloed care models, and fostering collaborative decision-making and care practices across specialties to improve patient care. To date, the program has successfully developed the CAP Clinic for transdisciplinary decision-making for complex aortic disease management; published a Canadian experience with endo-arch technologies; recruited the first trainee for its Advanced Aortic Surgery Fellowship program (who graduated in June 2024); conducted regular Advanced Aortic Teaching Rounds; and established a CAP webpage with LCI. CAP has become the national leader in Endo-Arch Therapy.

With CII's support, the program has built a strong infrastructure and achieved clinical successes, paving the way for continued growth into phase two. Phase two will focus on developing research initiatives and establishing a Vascular Research Consortium under the CAP's umbrella. The program would like to start an aortic tissue biobank. This will evolve into formalizing coordination for tissue collection, patient consent processes, and ethical protocols. This effort aims to advance understanding of aortic conditions and drive improvements in patient care. **SEE TABLE 1.**

### SYNERGY GROUP: Amyloidosis Program of Calgary (APC)

The APC has made significant strides in advancing the understanding, diagnosis, and treatment of amyloidosis. It remains committed to driving progress, enhancing patient outcomes by establishing local, provincial, and national networks for research and clinical care. These efforts include standardizing clinical care, developing care

pathways, establishing a referral directory, integrating AI algorithm technology, expanding research program recruitment, and more. CII supported APC's annual Amyloid Day event. In addition, APC has successfully transitioned to a fully independent program with the help of CII. APC will continue providing an annual impact report to share progress with CII. **SEE TABLE 2.**

### PIONEER GROUP: Minimally Invasive Cardiac Surgery (MICS)

Building on the foundation of its previous years' successes, the MICS program has made remarkable progress in the past year. It has further established its reputation for innovation and excellence by hosting three groups of peer-to-peer training sessions: one from Victoria, BC, one from Kelowna, BC, and another from Saskatoon, SK. These groups went on to establish their own programs. Additionally, the program organized another successful national conference; produced eight medical publications; and performed the first transaxillary aortic valve replacement, MID-CAB procedure, and transaxillary double valve replacement via minimally invasive techniques in Alberta. MICS also introduced Calgary's first MitraClip program and created the MICS patient resource booklet.

With the support of the CII team, the program remains strong and is moving towards becoming a self-sustaining, independent initiative. The onboarding of a new full-time research assistant has played a crucial role in facilitating this transition. **SEE TABLE 3.**

### PIONEER GROUP: Heart Failure Program (HFP)

CII assisted in writing a briefing note to propose a dedicated right-heart catheterization procedure room at the Foothills Medical Centre. This would allow the heart therapy group to more quickly perform invasive and non-invasive procedures and diagnostic tests for the growing list of Southern Alberta advanced heart failure patients.

**TABLE 1:**

| <b>Calgary Aortic Program (CAP)</b>   |   |  |  |
|---|---|--|--|
| <b>CLINICAL</b><br><i>Advancing Knowledge</i>   | <b>RESEARCH</b><br><i>Building Capacity</i>   | <b>TRAINING &amp; MENTORSHIP</b><br><i>Informing Decision-Making</i>                           | <b>COMMUNITY ENGAGEMENT</b><br><i>Health Impact</i>    |
| Established the CAP Clinic  | Published on the early Canadian experience with endo-arch technologies  | Leaders of a nationally recognized Clinical Practice Update                                    | Launched CAP website in June 2023                      |
| Conducted collaborative intraoperative treatments, with cardiac surgeons, vascular surgeons and interventional radiologists in the operating room and endovascular suites | Initiated a national registry for health technology assessment named The TEAMS registry                       | Successful Implemented of Advanced Aortic Fellowship for Cardiac and Vascular Surgery trainees | Held transdisciplinary Advanced Aortic teaching rounds |
|   | Fostered more collaboration across the clinical and basic science spheres for further research opportunities. | Plans developed to proctor a site for a new endovascular aortic arch device                    |  |

**TABLE 2:**

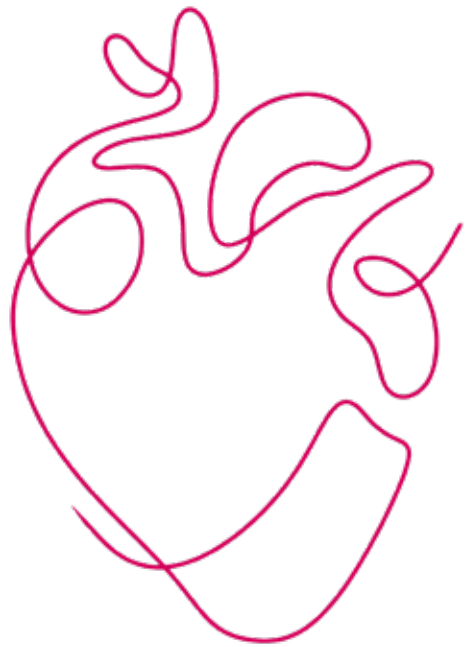
| <b>Amyloidosis Program of Calgary (APC)</b>  |  |   |  |
|--|--|---|--|
| <b>CLINICAL</b><br><i>Advancing Knowledge</i>  | <b>RESEARCH</b><br><i>Building Capacity</i>  | <b>TRAINING &amp; MENTORSHIP</b><br><i>Informing Decision-Making</i>  | <b>COMMUNITY ENGAGEMENT</b><br><i>Health Impact</i>  |
| Continued development of an amyloidosis provincial care pathway and related Connect Care order set (in progress)                 | Continued development of the Canadian Registry for Amyloidosis Research (CRAR) – ongoing onboarding of multiple Canadian sites and active recruitment nationally | Launched Amyloid Day in Calgary – annual educational event for amyloidosis health care professionals, patients and supports | Alberta Amyloidosis Working Group – provincial collaboration with multi-disciplinary amyloidosis health care professionals |
| Standardized clinical care across Alberta – current areas of focus include tissue pathology assessment, genetic testing, and PYP | Instituted an APC Summer Student Volunteer Research Program – mentorship program to engage students in active research within the APC in a volunteer capacity    | Established a Cardiac Amyloidosis Fellowship  | Canadian Amyloidosis Society – national collaboration with multi-disciplinary amyloidosis health care professionals        |
|  | Many ongoing phases II and III clinical trials – active participation by members of the APC  | Developed a national amyloidosis focused Journal Club   | Established a patient support group – early stages of development  |
|  | Adoption of the N2 SOP as the APC’s research SOP   | Created an Amyloidosis Patient Pamphlet   | Launched APC website in June 2023  |

**TABLE 3:**

| <b>Minimally Invasive Cardiac Surgery (MICS)</b>  |  |   |   |
|---|--|---|---|
| <b>CLINICAL</b><br><i>Advancing Knowledge</i>   | <b>RESEARCH</b><br><i>Building Capacity</i>  | <b>TRAINING &amp; MENTORSHIP</b><br><i>Informing Decision-Making</i>  | <b>COMMUNITY ENGAGEMENT</b><br><i>Health Impact</i>   |
| Established the first mitral transcatheter edge to edge repair program in Alberta with first cases performed on November 6, 2024  | Reported outcomes after MICS compared to the conventional sternotomy approach following ongoing prospective collection of patients | Conducted three Peer to Peer visits and mentored three centres from across Canada to establish a MICS program, providing on-site support to mentees initial cases at their centers  | Dr. William Kent presented at Libin Grand Rounds. Ongoing speaking engagements within the cardiac surgery community, thereby expanding the reputation of Libin and the Foothills Medical Centre as a leading institute for MICS |
| Drs. Adams and Kent certified in the techniques of minimally invasive beating heart mitral valve repair with the NeoChord device, recognized as the only independent implanters in Canada | Two publications were published and presented  | Drs. William Kent, Corey Adams, Daniel Holloway, Ken Parhar, Duc Ha, as well as the cardiac surgery OR team and CVICU trained staff travelled to Nicaragua to support the development of a cardiac surgery program in Managua | Launched a CAP website in 2023  |
| Dr. Holloway performed the first MID-CAB procedure in Alberta and established a MID-CAB program with colleagues, Drs. Shanmugam and Smith   | Ongoing analysis of the cost of reducing length of stay with a focus on the economics of minimally invasive cardiac surgery        | Created a MICS Patient booklet  |   |
| Dr. Holloway performed the first transaxillary aortic valve replacement in Alberta in March 2024  | Presented prospectively collected patient reported outcomes of minimally invasive aortic valve replacement versus conventional AVR | Created an Amyloidosis Patient Pamphlet   | Launched APC website in June 2023   |
| Drs. Adams and Kent performed the first transaxillary double valve replacement via minimally invasive techniques in Alberta in February 2024  | Recruited of a full-time research assistant to support research efforts for MICS   |   |   |
| Implemented a Rapid Recovery Protocol for MICS in 2022. Protocol outcomes were reviewed, showing a reduction in length of stay of 1.5 days  |  |   |   |

## DEPARTMENT OF CARDIAC SCIENCE SUPPORT

CII supported several Department of Cardiac Sciences activities, including the second Calgary Shock Symposium (CathSHOCK). Held in November 2023, the conference attracted more than 120 participants from across Canada and the US, fostered practical and applicable patient-centered presentations, and enabled the practicing of essential skills through interactive simulation activities. The Cardiac Implantable Electrical Device Clinic (CIED) identified a need for patient resources for ICD insertion, leading to the development of comprehensive patient booklets and digital resources. CII also supported educational sessions by Dr. Sam Sears and funded two nurse cardiac education workshops on 12 Lead Interpretation. The initiative secured new ZOLL Medical Adult Advanced Cardiac Life - AHA Guidelines Support posters for the Cardiac ICU team; partnered with the International Society for Magnetic Resonance in Medicine (ISMRM) to host a global workshop in Calgary in October 2024; and supported the request for proposal BID process to host the International Society for Autonomic Neuroscience (ISAN) in Calgary in 2026.



# P2 Initiative

## OVERVIEW

The P2 (Person to Population) Cardiovascular Research Initiative focuses on advancing population cardiovascular health through member and community engagement in patient-oriented and health outcomes research and policy recommendations. The program fulfills its mission through three focus areas: research, education, and community engagement. P2 has 129 members (clinicians, researchers, staff, students/trainees, and patient partners).

## EDUCATION

P2 provides educational resources, seminars, and other opportunities for students, clinical trainees, and junior to mid-career faculty members. The LCI Master's Scholarship in Cardiovascular Health Promotion is a \$12,500 scholarship awarded annually through the Faculty of Graduate Studies' Graduate Award Competition (GAC). The 2023-24 scholarship was awarded to Kathleen Charlong (Supervisor: Dr. Amy Metcalfe) for her project, "Poor gestational diabetes follow up testing and the risk to female cardiometabolic health: A Canadian population based study of continuity in postpartum care."

The P2 Initiative held its annual spring retreat in June 2023. It featured a poster competition, and five prizes were awarded to students presenting projects related to improving cardiovascular health through research, awareness, and improved access to care.

## RESEARCH

P2 optimizes research collaboration between cardiovascular researchers to promote high quality, precision population cardiovascular research. Between

April 2023 and March 2024, P2 hosted three retreats. Each focused on improving different facets of precision population cardiovascular research.

### June 2023

P2 hosted its spring retreat in June 2023 with the goal of facilitating networking opportunities and opportunities for members to receive feedback on projects. The retreat was attended by faculty, staff, trainees and patient partners. The keynote speaker was Dr. Sam Liu from the University of Victoria. Dr. Liu presented on health promotion using digital technology. The retreat also featured presentations from Kirn Dhaliwal, winner of the 2021 Project Competition, and Hasti Masihay Akbar, the 2022 winner of the LCI Master's Scholarship in Cardiovascular Health Promotion. A grant workshop was held with project leaders presenting and receiving feedback. Dr. Kerry McBrien presented, "Partnering with Alberta's Primary Care and community-based organizations to provide integrated health and social care to the population." Dr. Maria Santana presented, "Patients Adopting their Electronic Personal Health Records: are we there yet?" Five students received prizes following a poster competition focused on improving cardiovascular health through research, awareness and improved access to care (see table above in the Education section for details).

### September 2023

In September 2023, the Alberta Innovative Trials Symposium was hosted in collaboration with the Alberta Health Services (AHS) Strategic Clinical Networks, APPROACH (Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease), ICDC (Interdisciplinary Chronic Disease Collaboration), and the P2 Initiative. This two-day symposium was held at the Calgary Central Library with the goal of sharing knowledge and experiences from innovative trials. Dr. PJ Devereux from McMaster University and Dr. Tor Biering-Sørensen from the University of Copenhagen were the keynote speakers for this event.

### January 2024

P2 hosted a Test Your Concept Retreat in January 2024, and faculty members were invited to present their project ideas and compete for seed funding support. Dr. David Nanchen, Academic Head, Department of Health Promotion and Preventions, Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Switzerland was the keynote speaker and presented, "Digital methods to improve family cascade screening in genetic diseases." Drs. Na Li, Roopinder Sandhu, and Robin Walker also presented. Dr. Na Li's project, "MEDETECT: Develop and Evaluate Automatic Medical Records Data Mining & Extraction Technologies" was the recipient of this year's \$10,000 seed fund prize.



# Communications & Marketing

## OVERVIEW

This section highlights the Libin Cardiovascular Institute's efforts in Advancement, encompassing communications, marketing, events, and digital engagement. Our target audiences include the public, faculty and clinical members, students, staff, donors, potential donors, and other stakeholders. Our communication objectives include bringing expert cardiovascular health information to the public; fostering digital engagement with the community; outlining the future direction of the Institute; highlighting member successes; and showcasing Libin platforms and initiatives.

## NEWSLETTER

The Libin Beat, our monthly newsletter, has a distribution of about 3,000 external and internal stakeholders. It's engagement rate is well above industry standard, reflecting the value of the content we create. Our weekly newsletter, targeted at internal subscribers, also saw fantastic engagement, and has proved an excellent resource for communicating events and important news with our members.

## WEBSITE

The past year saw continued development of the new Libin Cardiovascular Institute website. Our membership directory, which allows faculty, staff, and trainees to maintain their own profiles, was published and marked a huge success for our marketing team.

Our website metrics help identify areas of success and growth. The top visited pages reflect a diverse interest,

from general information about the Institute to specific research findings and team member profiles, which indicates a broad interest base and effective content distribution. The dominance of first-time visitors (99%) suggests successful outreach and indicates a potential for converting these visits into returning users. Most of our website traffic comes from Canada (75%), which aligns with our local engagement goals. However, notable international traffic (USA, India, Germany, China) indicates global interest.

## SOCIAL MEDIA

Engaging with our community through social media is a key priority for the Libin Institute. We continue to grow our social media following by developing content that falls into three main pillars: showcasing our members, raising awareness about the Institute, and promoting cardiovascular health. We actively produce content for four main social media platforms: Facebook, Instagram, X (formerly known as Twitter), and LinkedIn.

Facebook and Instagram are our most public-facing social channels, offering significant opportunities to educate the public about cardiovascular health. We are continuously developing new content strategies to better reach and engage with this audience.

## HEART OF INNOVATION: PRECISION MEDICINE CAMPAIGN

From February to May 2023, the Libin Cardiovascular Institute partnered with Postmedia and iEvolve Media



for a digital marketing campaign to raise awareness of our Precision Medicine Initiative. The campaign achieved significant success, garnering over 330,000 views through digital display ads, nearly 2 million views on LinkedIn, and over 141,000 views via Postmedia Sponsored Content, with engagement rates and click-through rates exceeding industry benchmarks. The campaign also leveraged print ads in The Calgary Herald to complement digital efforts. With positive audience feedback, the campaign effectively reached its target demographic, highlighting the Institute's leadership in innovation.

Landing page:

<https://libin.ucalgary.ca/heartofinnovation>

## NEXT STEPS

Moving forward, we aim to maintain and build upon the success of our organic growth strategies, particularly on social platforms such as Facebook and LinkedIn. We will increase the use of engaging content formats like videos and newsletters to further enhance audience interaction and retention. Additionally, we plan to leverage partnerships with the University of Calgary, Cumming School of Medicine, and local businesses to amplify our reach and support fundraising efforts. This comprehensive campaign has set a strong foundation for future digital engagement initiatives, helping to position the Libin Cardiovascular Institute as a leader in cardiovascular health and innovation.



[libin.ucalgary.ca](http://libin.ucalgary.ca)