REMEDY

MAGAZINE

SIMULATION-BASED EDUCATION

Training the Highly-Skilled Healthcare Leaders of Tomorrow

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Community Engaged Service Learning Program

THE WAY FORWARD

I3V in 2023 and Beyond

PLUS, LEARN MORE ABOUT THE 2023 MOLLY APPEAL CAMPAIGN

DALHOUSIE UNIVERSITY | FACULTY OF MEDICINE

molly appeal FOR HEALTH RESEARCH

REMEDY

MAGAZINE

FALL/WINTER 2023

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

We recognize that African Nova Scotians are a distinct people whose histories, legacies and contributions have enriched that part of Mi'kma'ki known as Nova Scotia for over 400 years.

DALHOUSIE UNIVERSITY | FACULTY OF MEDICINE

PLEASE SEND NEWS, STORY IDEAS, COMMENTS, AND/OR ADDRESS CHANGES TO:

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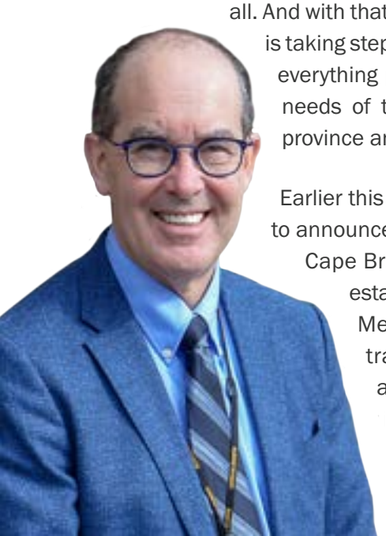
FEATURES & STORIES

MESSAGE FROM DEAN DAVID ANDERSON

Another academic year is well underway here at Dalhousie. In the Faculty of Medicine, though the energy and excitement of those first few weeks may have subsided, our enthusiasm for celebrating the incredible strides being made in medicine, through education and research, has not. As donors, your unwavering support contributes to the foundation upon which we build the future of healthcare.

Dalhousie Medical School has been a leading force in improving the quality and outcomes of patient care through educating physicians and scientists and conducting groundbreaking research. Our renewed strategic plan, Realizing Our Ambition, released earlier this year and reflective of our collective ambition to bring the Faculty of Medicine into a new era, would not be possible without the collaborative and collective efforts of faculty, researchers, staff, learners, and perhaps most notably, the donors who selflessly give to the Faculty of Medicine year after year.

We all know we are in a very challenging period for healthcare in our region and in our country. With this challenge comes the opportunity to redefine systems, institutions, and mindsets, fostering a healthcare system that is more sustainable, and equitable for all. And with that, the Faculty of Medicine is taking steps to ensure we are doing everything possible to address the needs of the communities in this province and beyond.



Earlier this year, we were thrilled to announce our partnership with Cape Breton University to establish the Cape Breton Medical Campus, set to train 30 new doctors annually beginning in 2025, enriching medical education and research in Cape Breton. And our Master of Physician Assistant Studies (MPAS) program, announced in August will help alleviate physician burden by offering exceptional training and recruitment of physician assistants in Nova Scotia. We are also committed to fostering inclusivity through initiatives like the Indigenous Admissions Pathway, which has already welcomed its first students, and the upcoming Black Learners Admissions Pathway, currently accepting applicants for the 2023/2024 admissions cycle.

While these promising new endeavors aim to address the healthcare needs of the region, we must also recognize the existing programs, made possible through generous donor giving, that prepare students to become our medical and research leaders of tomorrow.

Donor contributions make it possible for us to offer students at Dalhousie access to programs and initiatives such as the Research in Medicine (RIM) program, the Centre for Collaborative Clinical Learning and Research (C3LR) simulation facilities, and the Community-Engaged Service Learning Program. It is our priority to pave the way for aspiring medical and graduate students, equipping them with the knowledge, skills, and resources they need to become the healthcare leaders of tomorrow. Thanks to the generous support of donors, transformative programs like these are made available to students, creating lasting impressions for their future careers.

In this inaugural issue of REMEDY, you'll see some of the ways Dalhousie is addressing the broader healthcare challenges facing our region. Your generosity is instrumental in advancing our mission to drive excellence in health and health care through world-class medical education and research, and our commitment to social accountability. From research breakthroughs to community outreach programs, your support is the driving force behind our vision of healthier communities.

Sincerely,

David R Anderson

Dr. David Anderson
Dean of Medicine

MESSAGE FROM DR. EILEEN DENOVAN-WRIGHT

Dear friends and valued donors,

With autumn in the air and a new school year recently begun, I am reminded of my time as a graduate student, also known as a research trainee, at Dalhousie University. The days were long, and the work was hard, but the importance of the research I was doing with my colleagues, supervisors, and partners was at the forefront of my mind, and kept me motivated to continue despite the challenges.

Today, I am a Professor and the Associate Dean of Research at Dal. Seeing the amazing work of all the trainees involved in medical research, I am continually impressed with the depth of knowledge research trainees bring to the table—and to the lab—and by the dedication they have for their work.

This inaugural issue of REMEDY Magazine is shining a light on the next generation of healthcare professionals, including research trainees—something I am incredibly passionate about. The quality of our healthcare system is reliant on the discoveries and solutions that these individuals and their supervisors explore through their research; and the positive impacts are immeasurable. From expanding and mobilizing our knowledge of children's pain management with Solutions for Kids in Pain (SKIP), to finding new ways to diagnose and treat disease in the Infection, Immunity, Inflammation, and Vaccinology (I3V) labs, to building clinical research into medical school curriculum through the Research in Medicine (RIM) program, medical research at Dalhousie plays an integral role in improving the health and well-being of Nova Scotians, and those around the world.

Not only does the research ecosystem work to improve overall healthcare, its impacts on the economy in Nova Scotia are also significant. Building the biotechnology and biomedical research industries and bringing new jobs for skilled workers to the province are the tip of the iceberg when it comes to the benefits of making Dalhousie an attractive place for researchers to work and grow their families.

I hope you will enjoy reading the stories of the exciting research and education excellence Dalhousie's Faculty of Medicine has become so highly regarded for. I know that the future of medicine is in great hands here at Dalhousie, thanks in no small part to the loyalty and generosity of donors like you. Thank you for your many contributions, your passion for medical research, and your support of our quest for better health for all.

Sincerely,

E Denovan-Wright

Eileen Denovan-Wright
Associate Dean Research, Faculty of Medicine
Professor, Department of Pharmacology
Dalhousie University

BUILDING ENGAGING PARTNERSHIPS FOR GREATER IMPACT, TOGETHER.

NEW HEIGHTS FOR PHILANTHROPY IN MEDICINE

REALIZING A SHARED VISION

Achieving ambitious goals in medical education and research requires a team effort. From the talented faculty and researchers to the many donors and community stakeholders, everyone is critical to improving health outcomes for the people of our region. In 2022 the Faculty of Medicine and the Dalhousie Medical Research Foundation decided to join together to better support the community of generous donors and strategic partners who believe in the power of medical research and education and who supporting this innovative and important work through philanthropy. The new, united Medicine Advancement team is focused on helping donors achieve their desire to have an impact by advancing the game-changing endeavours carried out at the Faculty of Medicine.

This enthusiastic and capable team will help carry forward the Faculty of Medicine's mission of creating healthier communities. The role of the team is to build relationships—both inside and outside the University—with partners, alumni, students, donors, researchers, faculty, and other key players. The Advancement team will celebrate the achievements of the faculty, share stories of the exciting medical research breakthroughs and training innovations, and work collaboratively to support the faculty's experts with the vital funding they need to continue their critical efforts.

Medicine Advancement will celebrate and honour the spirit of DMRF and the achievements of this mighty organization over the years by continuing special well-known activities such as the Molly Appeal—the annual campaign established over forty years ago to inspire people to give what they can to have a big impact together—as well as introduce you to new opportunities to engage. The team wants to connect people with the causes they care about and is excited to be advancing the Faculty of Medicine to reach new heights on this front.

PROGRESS REPORT

Bringing together two donor centred operations can be challenging and certainly requires patience and a high attention to detail. With 40 years of generous and loyal support, the Dalhousie Medical Research Foundation (DMRF) had over 25,000 donors and over 150 donor directed funds to be reviewed and carefully integrated.

We are pleased to report that many of these donors continued to support medical research through our first integrated Molly Appeal which raised over $230,000 to support state of the art cancer research lab equipment. We are also pleased to report that all DMRF funding commitments to our researchers were disbursed for 2022-23 and the Faculty has mapped those commitments extending over the next five years.

In addition, researchers were able to apply to a number of impactful funding programs traditionally offered by DMRF. These included the Capital Equipment Grant and the Graduate Student Scholarships, which were able to fund more students than in previous years.

To receive a complete report to the community on integration progress in November 2023 please call **902-494-3502** or email **medadvancement@dal.ca**.

HOW MEDICINE ADVANCEMENT CAN WORK WITH DONORS

The Medicine Advancement team works closely with the community and Dalhousie alumni to better understand what matters most to them and what impact they want to have through their engagement and philanthropy. This allows the team to introduce donors to opportunities that align their interests most closely with the faculty's medical research initiatives and educational priorities. "It's important to us that we help our donors and alumni stay connected to the health research projects and student learners they care about" says Cathrine Yuill, Executive Director of Advancement for Medicine.

"There are many ways donors can support world-class medical research and education at Dalhousie. Whether it's volunteer time, offering their expertise, or a philanthropic gift—including a one-time gift, a monthly gift, a future gift in their will, or a larger, multi-year investment—our team members are experts in ensuring donations are securely and soundly managed, with transparency and care."

MEDICINE ADVANCEMENT AND THE FACULTY OF MEDICINE

The incredible outcomes at the Faculty of Medicine require the time, training, expertise, and dedication of Dalhousie's researchers and educators and the Medicine Advancement team is proud to support those efforts by encouraging engagement and investment from the community and other stakeholders.

Working closely with the Dean, the Medical Research Development Office and other faculty leaders, the Medicine Advancement team builds and strengthens internal relationships with researchers, educators, and other key players within the faculty to better understand the work happening in and out of the labs and classrooms. The Medicine Advancement team can collaborate with faculty and researchers to share their work with the broader community in a compelling way.

The more we learn about the exciting advances taking place right here at Dal, the more we can share with our donor community and find opportunities for aligned interests to make greater impact, together.

MEET THE TEAM

01 CATHRINE YUILL
Executive Director,
Faculty of Medicine Advancement

02 CAROL MURRAY
Associate Director,
Legacy and Annual Giving

03 DAYNA PARK
Manager, Communications

04 ELIZABETH CONRAD (mat leave)
Emma Lindala (acting)
Manager, Alumni Engagement
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BETTER HEALTH OUTCOMES TOMORROW ARE THE RESULT OF TODAY'S RESEARCH EXCELLENCE

MOBILIZING OUR RESEARCH POTENTIAL

A COMMITMENT TO SOLVING HEALTH CHALLENGES

Dalhousie medical researchers are committed to solving the most serious health challenges impacting people here in the Maritimes, and beyond. What we do would not be possible without the collaborative and collective efforts of our research teams and support staff, strong infrastructure, and the operational supports provided by the Faculty of Medicine community, research funding bodies, and most importantly, donors like you.

At the Faculty of Medicine, we understand that better health outcomes tomorrow depend on the research excellence of today. When you support medical research at the Faculty of Medicine, you can be confident that 100 per cent of your donation will reach the area of research you have identified. Your gift will influence breakthrough discoveries that improve diagnoses, create better treatments, and even uncover the cures of the future. In the following pages, we introduce seven areas of research strength at the Faculty of Medicine that we thought you might find interesting and even exciting.

CANCER

Is personalized medicine the future of cancer treatment? How can we improve a doctor's understanding of what treatment will work the best with which patient regardless of whether their practice is in rural Nova Scotia or an urban centre?

Dalhousie's cancer research team is tackling these and other questions as a highly collaborative community. Team members are working with collaborators across Canada and around the world to conduct cutting-edge research. They are considering the impacts of lifestyle, genetics, and environmental exposures on the likelihood of developing cancer or responding to therapies and treatments.

In one example of this, a team of researchers is collecting the gene sequences of patients with pancreatic cancer for the first time ever in Atlantic Canada. This is important, because by understanding the genetics of the tumor, they can develop and use treatments that are more targeted and individualized for specific patients, which results in designing new, individualized treatment plans.

FINDING ANSWERS TO THE BIGGEST QUESTIONS

In an effort to explore every facet of cancer control, researchers are investigating:

How cancer starts and spreads

How to detect and diagnose cancer more quickly

How to treat cancer with novel treatments that are more effective, for example, harnessing the cancer-killing power of measles and reovirus which contain cancer-fighting peptides

How to prevent cancer, which is the ultimate cancer cure, by exploring Atlantic Canadians' hereditary, environmental and lifestyle risk factors through long-term studies that will inform future prevention efforts.

INFECTION, IMMUNITY, INFLAMMATION, AND VACCINOLOGY (I3V)

Imagine being able to harness the power of your immune system to defeat cancer without the painful side-effects of traditional treatments like chemotherapy.

Over the past few decades Dalhousie University, in partnership with partner healthcare facilities, governments, industry, and community, have worked together to establish world-leading programs of research that aim to improve the diagnosis, treatment, and prevention of a breadth of diseases that negatively impact people, communities, and health systems globally.

The team of over 50 researchers who make up the I3V Team, along with over 100 research trainees, and 80 long-term staff, are all working together to find synergies and reach common goals, faster. Team members have garnered international reputations as leaders in their fields and have made significant impacts on the prevention and treatment of multiple diseases including arthritis, Multiple Sclerosis, IBD, asthma/allergies, and immunotherapies for cancer.

The I3V Team is active with the Canadian Center for Vaccinology (CCfV), located at the IWK Health Centre and a global leader in the development and testing of vaccines. The CCfV team are pioneers in examining maternal immunity and are playing a leadership role in national influenza studies. The team is supporting the development of vaccines against hepatitis C virus, influenza viruses, West Nile virus, Ebola virus, respiratory syncytial virus (RSV) and chlamydia. They also play a key role in the safety monitoring and improvement of equitable delivery of vaccines.

"This research addresses infectious diseases, chronic inflammation, and cancer, all of which have devastating impacts on human health. Expanding our research activities will bring us closer to a new reality, where we can prevent and treat these conditions to improve health around the world."

Dr. Roy Duncan, Research Team Leader & Professor, Department of Microbiology & Immunology, Dalhousie University

INNOVATION IS GOOD. ACTIVATION IS BETTER.

Looking to the future, the I3V team is eager to build on the expansive foundational research programs which will fuel the growth of an Atlantic ecosystem in biomedical technologies and life sciences.

The growth of the I3V research team and their reputation as a national leaders has led to several big partnership opportunities on the horizon but it also highlights that we have a significant gap in our research infrastructure. Atlantic Canada does not have a small scale, first in human biomedical lab and similar spaces are in short supply across Canada. In order to unleash the powerful research strength of this team, a significant investment in this specialized space is essential. The addition of new specialized labs will ensure that graduating students are truly industry ready.

HEALTHY AGING AND FRAILTY

Population aging is dominating conversations about healthcare in Canada, and all over the world. As the demand for services increase, healthcare systems around the world need to adapt. This means discovering new ways to deploy resources efficiently and identifying the most effective options for care and treatment, to support healthy aging.

More than chronological age, research shows that a person's level of frailty must be considered in healthcare delivery and planning, given that no two people age the same way. Defined as a poor state of health that arises from multiple, interacting medical and social problems, frailty increases a person's vulnerability to serious health declines. Around the world, higher frailty is linked to a number of challenges, including increased visits to hospital and a higher reliance on long-term care.

Dalhousie researchers are world leaders in defining and exploring the concept of frailty. At home and across the globe, they are actively working to provide better models to measure levels of frailty in individual patients and to inform care appropriately. Using unique mathematical models, including those that led to the development of the world's first Frailty Index, the goal is to improve quality of life for individuals, their families, and their caregivers, while reducing the burden of frailty on global health care systems.

Pioneered by Dalhousie researchers Drs. Arnold Mitnitski and Kenneth Rockwood, the Frailty Index is now used around the world to help measure a person's health, taking into account how multiple health problems can interact to produce varying degrees of frailty. Given that frail individuals may not respond to certain treatments in the same way that healthier adults do, and that certain standardized treatments can pose a risk of harm to frail patients, the Frailty Index helps physicians, patients and their families make informed health care decisions using patient specific scores. These scores also quantify how health care systems can provide more effective treatments for patients, at less risk.

EXPLORING THE LINK BETWEEN FRAILTY & ALZHEIMER'S DISEASE

Dr. Kenneth Rockwood is a Geriatrician at Halifax's QEII Health Sciences Centre, a professor of geriatric medicine and neurology and the Dalhousie Clinical Research Professor of Frailty & Aging. A globally leading authority on frailty, Dr. Rockwood conducted a study looking at the impact of frailty in the aging brain, and made news around the world for his groundbreaking discovery that frailty is a better predictor of Alzheimer's disease than amyloid plaques and tangles in the brain. The findings of this study are hopeful given that there are a number of ways that we can fight off frailty, including increasing physical activity and social interaction.

"These findings point us in a new direction when it comes to fighting Alzheimer's disease. Where current drugs targeting plaques and tangles have not been effective, our study suggests that targeting frailty can have a greater impact. This is good news, as there is a lot one can do to prevent frailty." – Dr. Kenneth Rockwood, Dalhousie Clinical Research Professor of Frailty & Aging.

Beyond meeting increased demands for health care with a global aging population, finding ways to thoroughly diagnose and treat the whole person is critical if we are to maintain societal health and well-being. With Dalhousie being a global leader in frailty research, an investment in this work allows us to uphold our competitive standing, while impacting critical, life-changing research for individuals and their loved ones here in Atlantic Canada and around the world.

GENETICS & GENOMICS IN MEDICINE

Dalhousie's Genomics in Medicine team applies the tools of genome science to the most pressing challenges in biomedical research. With more than 100 researchers and clinicians within and beyond the Faculty of Medicine, areas of research impact include cancer, inherited genetic diseases, including Parkinson's, FEVR, and Crohn's, as well as depression and mental health, and the role of the microbiome in human health and disease.

The group is working to not only pinpoint the genes that cause diseases, but also develop genetic tests to screen for these diseases at the earliest stages, and to come up with new, and more effective treatments.

Genomics is collaborative and interdisciplinary by nature. Team members explore transformative, technology-driven approaches to research questions at the interface of molecular biology and computer science. The group's work spans genetic disease diagnosis, drug development and trials, and ethics and policy.

GENE THERAPIES FOR INHERITED ORPHAN DISEASES

While inherited orphan diseases are rare, and include diseases such as cystic fibrosis, Lou Gehrig's disease, and Fabry disease, when taken together, they affect a total of three million Canadians. 95 per cent of these orphan diseases have no treatment, and one third of affected children will die before their fifth birthday.

Using cutting edge genomics technologies, the Genomics in Medicine team is working to uncover new genes that cause orphan diseases, and to develop novel ways of treating them, including recent clinical trials with enzyme replacement and gene transfer therapies. Continued funding in this area can help orphan disease patients manage and mitigate their symptoms and deliver a better quality of life for patients and their families.

"Genome science is becoming increasingly central to the study and treatment of human diseases, and there is an urgent need for young scientists who are trained in both the computational and biological aspects of genomics." Dr. John Archibald, Director, Centre for Comparative Genomics & Evolutionary Bioinformatics, Department of Biochemistry & Molecular Biology, Dalhousie University

Genetics and Genomics in Medicine research is transforming patient health by enabling early and precise diagnoses and improving access to novel and personalized treatments in all areas of medicine, with direct health and economic benefits to Maritime families and communities.

CARDIOVASCULAR RESEARCH

The Maritimes are home to the highest rates of heart disease in Canada, as well as the highest rates of such important risk factors as older age, frailty, obesity, and diabetes. Dalhousie's growing team of heart researchers is investigating how these factors contribute to heart disease—including a poorly understood form of heart failure known as diastolic heart failure that affects more women than men.

The Dalhousie Cardiac Research Excellence Wave (DalCREW) is a multidisciplinary group of Dalhousie-affiliated clinical and basic science researchers who study cardiovascular biology, cardiovascular disease, and health issues. The team brings together internationally recognized Dalhousie cardiovascular researchers from Nova Scotia and New Brunswick, including discovery scientists, cardiologists, cardiovascular surgeons, biomedical engineers, and kinesiologists. Their mission is to uncover new knowledge for preventing and treating cardiovascular diseases.

Our researchers are investigating heart disease from many different angles—such as the effect of sex hormones, exercise, age, frailty, and metabolic disorders on the development of heart disease. They are even studying how the heart adapts to the demands of pregnancy, to see if any of these mechanisms could be harnessed as a treatment for heart failure. Together, their heartfelt desire is to save and improve the lives of the thousands of Maritimers.

VULNERABLE POPULATIONS AND HEART DISEASE

While heart disease can affect people from all walks of life, recent studies have shown that specific populations, including women, pregnant women, Indigenous women, babies, older obese and diabetic adults, are more vulnerable. For example:

- Close to 25,000 women die each year from heart disease, and it is the leading cause of premature death for women in Canada. Women are five times more likely to die from heart disease than breast cancer.
- Coronary heart disease is responsible for a 53 percent higher death rate in Indigenous women compared to non-Indigenous women. Heart health in indigenous communities is influenced by access to health care, education, and affordable food and water.
- Congenital heart disease (CHD) is the world's leading birth defect. About 1 in 80-100 Canadian children are born with CHD. Improvements in health care mean 90 percent of children will live with CHD into adulthood – resulting in a growing population of young adults who require life-long cardiac care.

The Cardiovascular Diseases in Vulnerable Populations group brings together research groups in Nova Scotia and New Brunswick consisting of life science discovery scientists, biomedical engineers, kinesiologists, nutritionists, cardiologists, and cardiovascular surgeons. Focusing efforts on the most vulnerable heart patients of all, including pregnant women, babies, older adults, and those with obesity and diabetes, the group is collaboratively working to uncover new knowledge for the prevention and advancing treatment of cardiovascular disease and heart failure, in the vulnerable populations.

NEUROSCIENCE, MENTAL HEALTH, AND THE BRAIN REPAIR CENTRE

From internationally acclaimed research in preventing and treating severe mental illness to a nationally recognized Brain Repair Centre, Dalhousie's neuroscience and mental health research is making progressive strides in matters related to brain health.

Dalhousie is home to international experts in child and adolescent mental health who are in the midst of a longitudinal study that is among the best in the world. Prevention, faster diagnosis and better, more personalized treatments have become the focus of our leading researchers in predicting and treating inherited mental health conditions, particularly severe mood illnesses like bipolar disorder and depression.

THE BRAIN REPAIR CENTRE

The Brain Repair Centre (BRC) is a world-class research centre of excellence dedicated to reversing the epidemic of illness and injuries to the brain and nervous system. The Centre is focused on research, innovation, and education. "We're not just a neuroscience institute engaged in the study of neuroscience – many universities have these. Our aim is really to make discoveries in the lab and take them out into the community to improve health – to change clinical care, educate the public on preventative measures, and improve quality of life for patients around the world." Dr. Victor Rafuse Director, Brain Repair Centre; Professor, Department of Medical Neuroscience, Dalhousie University.

Dalhousie's Medical Neuroscience team is dedicated to their mission of supporting molecular and cellular neuroscientific research, with an emphasis on projects that aim to identify, treat, and cure diseases of the nervous system. They are currently working on a number of timely research projects that investigate topics such as motor control, vision, sleep, Alzheimer's disease, and epilepsy.

HEALTHY POPULATIONS INSTITUTE

Dalhousie's Healthy Populations Institute (HPI) is a leading multi-faculty research institute that creates knowledge and mobilizes evidence to improve health and health equity in Atlantic Canada and beyond. As a health equity, inclusion, diversity, and accessibility hub, HPI focuses on the social, structural, and ecological determinants of health and well-being.

Their impact is clear and compelling. They work with communities, engage society, and directly respond to provincial, national, and international government priorities.

HPI is also focused on increasing the number of graduate, PhD, and post-doctoral students at Dalhousie from diverse backgrounds, being a leader in climate action, and promoting health equity and social justice. As one of only a small cluster of national institutes dedicated to improving the population health of Canadians, they lead so others can follow.

UPLIFTING THE FUTURE

The Uplift Partnership is a flagship initiative of HPI that empowers children and youth to take the lead in creating school communities that are healthy, vibrant, caring, and connected. "Our goal is to change the trajectory of health for children and youth in this province and allow them to reach their full potential as healthy, productive members of society," said Dr. Sara Kirk, scientific director of the Healthy Populations Institute and professor in the School of Health and Human Performance, Faculty of Health. Led by Dr. Kirk and Senior Research Scholar Dr. Camille Hancock Friesen, UpLift empowers grade school students to be leaders and take actions that will contribute to healthy, vibrant, connected, and safe school communities.

Prevention through healthier living and identifying and addressing the specific needs of vulnerable populations are crucial aspects of the research initiatives happening in labs and classrooms across our campus.

LEARN MORE

If you would like to know more about how you can support one of these exciting areas of research, contact Cathrine Yuill, Executive Director of Advancement, Medicine. Donor's can explore how they want their support directed which can include:

Specialized research spaces | Specialized equipment funds
Research trainee funds | Research seed funding program

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SUPPORTING THE NEXT GENERATION OF INNOVATORS, DISCOVERERS, AND CHANGE-MAKERS SOLVING THE WORLD'S MOST DIFFICULT HEALTH CHALLENGES.

molly appeal
FOR HEALTH RESEARCH

2023: INVESTING IN RESEARCH TRAINEE SUCCESS

THE ENGINES DRIVING MEDICAL RESEARCH

Behind every innovative, world-leading researcher, lies a dedicated team of research trainees. The best research trainees are critical thinkers and problem solvers. They are creative, dedicated, and passionate about their respective disciplines. A breadth and depth of knowledge in their field of study, the ability to analyze problems, ask the right questions, and apply their skills to finding the answers is second nature to them. They are at the forefront of tackling the world's most intense health challenges—from health equity to treating and curing cancer, to pandemic preparedness and prevention.

This Fall's Molly Appeal Campaign is focused on raising funds to invest in research trainees at the Faculty of Medicine. Graduate studies in the faculty are intensive, hands-on specialty programs in which students are developing and facilitating ground-breaking medical research day-in and day-out. Guided by our world-leading research supervisors and highly skilled research teams, research trainees are critical to the work at the research bench and are the true driving force behind medical breakthroughs made at Dalhousie University.

"When you fund a research trainee, you fund the next generation of medical researchers and empower them to do great things," says Dr. Paola Marcato, professor and researcher in the departments of Pathology, Microbiology and Immunology at Dalhousie University. Dr. Marcato is a world-renowned breast cancer researcher, and was recently appointed the Canadian Breast Cancer Foundation (CBCF)-Atlantic Region Endowed Chair in Breast Cancer Research. One of the trainees working in Dr. Marcato's lab, Marie-Claire Wasson, is focused on investigating a relatively unexplored group of molecules and their potential application in cancer therapy. "The initial findings and identification of a new molecule are extremely encouraging," says Wasson. "We are now onto next steps to push this discovery closer to the clinical use."

Without their vital contributions, and the guidance they receive from some of our most brilliant research minds, medical research at the Faculty of Medicine—and within the larger ecosystem of medical research in Canada—simply wouldn't move forward, and medical advancements would be fewer and farther between.

When we support research trainees, we are investing in the future of health care and building the next generation of researchers in the Maritimes, in Canada, and around the world.

SUPPORTING GRADUATE STUDENTSHIPS

Labs at Dalhousie's Faculty of Medicine are made up of diverse, creative, brilliant research trainees. They are the ones in the lab coats, running experiments, and finding solutions to health challenges—big and small. There is a critical need for more graduate trainees, students who are at the apprenticeship stage of their careers and need financial support to allow them to be dedicated to their work in the lab.

> **"The Faculty of Medicine is embarking on a new era, one defined by our commitment to impact and building healthier communities. We cannot achieve impact without prioritizing the critical need of attracting and retaining the next generation of the best and brightest students—and to attract and retain, we must support them."**
>
> Dr. David Anderson, Dean of Medicine

From neuroscience to cancer research, to drug development, and innovative research programs like the Canadian Centre for Vaccinology and the Brain Repair Centre, Dalhousie research trainees are leading in their fields in Canada, and around the world.

"Graduate students in Dalhousie's Faculty of Medicine hold a pivotal position within the research team, making substantial contributions to scientific endeavors that pave the way for improved health outcomes," says Wasson. "The support we receive through donors is imperative as it allows us to channel our energy and focus wholeheartedly into the pursuit of discoveries."

Molly Moore

Whether you're passionate about cancer research, improving access to care, protecting against infectious diseases, or other health challenges Dalhousie researchers are tackling, supporting research trainees means solving the health problems that you care about most.

THE IMPACT

BETTER, MORE IMPACTFUL RESEARCH

We have the opportunity to attract high-quality students to Dalhousie and Atlantic Canada who are committed to achieving research excellence in the Faculty of Medicine. To do that, the faculty needs a sustainable way to fund these students, so it can foster a competitive atmosphere that attracts top talent.

Vibrant laboratories attract the best and brightest grad students to Dal, where they contribute to the knowledge economy we are building here in the Maritimes.

ECONOMIC BENEFITS

Working with industry partners, our researchers are developing commercially viable drugs, vaccines, and biomedical devices that will change lives and benefit our Maritime community.

Right now, some top graduate students are choosing other universities and provinces for their studies, limiting the growth of both the research ecosystem and the larger biomedical economy in Atlantic Canada. Not choosing to study here means some of our best and brightest are not able to consider continuing their studies here, working here, living here, or starting a family here. Without this expansion, how will we attract physicians or grow the technology and biomedical sectors in the region?

BRINGING NEW PERSPECTIVES

The cost of graduate studies is also a barrier to diversity at Dalhousie. Many students from underrepresented communities, lower socioeconomic, and rural backgrounds simply can't afford to delay receiving steady paycheques to further their educations. This results in a lack of diversity of thought and lived experience in labs—perpetuating biased research that is not representative of the communities it serves. Students from varied socio-economic and cultural backgrounds bring unique and varied perspectives to the research conducted at the Faculty of Medicine, making it better and stronger.

Supporting research trainees through philanthropy means your gift will enable more highly skilled and educated individuals to begin careers, start families and plant roots in the Maritimes, supporting our goals for growth and development in the region.

THE FUTURE OF THE I3V TEAM IS BOLD AND EXCITING, BUT NONE OF IT WOULD BE POSSIBLE WITHOUT SUPPORT FROM DONORS.

THE WAY FORWARD

I3V IN 2023 AND BEYOND

A RESEARCH COLLECTIVE

Earlier this year, the Faculty of Medicine's Infection, Immunity, Inflammation, and Vaccinology (I3V) team held their Annual General Meeting (AGM) on the Dalhousie University campus. Made up of researchers from Dal and other affiliated health organizations, the I3V team's mission is to develop new approaches to preventing and treating infectious diseases, chronic inflammation, and cancer.

The I3V team is a large and diverse group of researchers and clinicians with a multitude of strengths. They serve to harness the power of the human immune system to combat some of the most detrimental diseases and disorders faced around the world and to better understand how it impacts our health.

Dr. Jean Marshall, Professor in the Department of Microbiology and Immunology at Dalhousie University, and executive member of I3V, calls the team a collective for scientific exchange. "The strength of our group is in our diversity, ability to be flexible, and work together to solve problems," she says. Having a team like I3V encourages collaboration and an exchange of ideas across the wide variety of interests that fall within the parameters of the group.

IN GOOD HANDS

The July 5th AGM featured 40 trainees presenting their work to an enthusiastic audience. "There was so much energy in the room," recalls Dr. Marshall, "I know the future of science is in good hands." Mentored by I3V team members, the research trainees presenting at the AGM all conduct research aligning with one or more of the four I3V streams. Ranging from cancer to autoimmune disorders, from social science and health equity to virology, they are passionate, engaged, and motivated in their work. "Supporting new investigators is the way forward," says Dr. Marshall.

The future of the I3V team is bold and exciting. With new areas of research that are taking a global health perspective in alignment with UN Development Goals, the momentum for I3V research at Dalhousie is strong. Although the financial ecosystem is rocky in today's economic climate, when it comes to research funding, researchers remain optimistic. With the easing of COVID-19 restrictions, the opportunity to collaborate face to face, work together to apply for larger operating funds, and exchange knowledge across international communities is on the horizon. But none of it would be possible without support from Dalhousie donors.

THE IMPACT OF PHILANTHROPY

"Simply put, the I3V team would not exist without donor funds," Dr. Marshall says. While operations funding is often found through other channels, the vital funding support for research trainees and post-doctoral fellows often rely on gifts from donors and is an area of great need. "When we're able to fund scientists and train future research leaders, we can attract the best people to Dalhousie—which leads to better healthcare."

Most families have someone who suffers from an immune-based disease or disorder—be it allergies, cancer, heart disease, or arthritis. "The potential for what we can do is enormous," says Dr. Marshall. "If we can fine-tune our understanding of the human immune system, it would have massive impact on patients with chronic diseases—it would allow for better overall healthcare, improved prevention, the development of vaccines, and more."

A passionate and eclectic group of scientists, the I3V team invites you to attend a seminar, tour a lab, or meet a researcher to learn more about their exciting endeavours, and how you can play a part. Connect with the Faculty of Medicine team to learn more.

WHERE ACADEMICS MEETS COMMUNITY SERVICE

MORE THAN MEDICINE

COMMUNITY ENGAGED SERVICE LEARNING PROGRAM

There is more to being a physician than the skills needed to diagnose and treat disease. Critical thinking, patient advocacy and communication, collaboration, and community building are competencies that cannot be fully taught in the classroom. At Dalhousie Medicine, medical students have the opportunity to build these integral abilities through the Community-Engaged Service Learning Program (CESL), offered during the first two years of their undergraduate education.

The program combines classroom-based learning with community experiences through service learning. Participating students are matched with organizations who work with underserved and equity-deserving communities and partner with them to develop impactful deliverables relevant to that population.

Part of the Faculty of Medicine's Office of Community Partnerships and Global Health, the CESL Program seeks to enhance student learning through testing classroom-learned skills and knowledge in a real-world setting. Students engage and collaborate with the organizations for a minimum of 20 hours to address real problems they are facing. In doing so, they contribute to social accountability in medicine and are inspired to become leaders in their communities.

For example, Dal Med students Victoria Taylor, Sarah Jennings, and Tyler Herod partnered with the Canadian National Institute for the Blind (CNIB) for their Service Learning Project, exploring health advocacy for patients with sight-loss in hospital settings. "With help from our community partners, we were able to brainstorm ways to reduce some of these barriers in local communities," say Taylor, Jennings, and Herod. They developed an understanding of the barriers people with vision loss face, specifically at healthcare facilities. The students held focus groups to determine the key challenges and made recommendations for improvements.

> **"Working with CNIB was an enlightening experience that grew our perspectives of some of the challenges faced by individuals with sight loss. Going forward, we will continue to advocate for change and amplify the voices of those with sight loss and other communities affected by accessibility barriers in healthcare facilities."**
>
> Victoria Taylor, Sarah Jennings, Tyler Herod

Launched in 2015, this unique program now partners with both local and national partners such as Special Olympics New Brunswick, 211 Nova Scotia, Immigrant Services Association of Nova Scotia (ISANS), and Chebucto Connections. "Through these relationships, students can connect what they are learning in the classroom and lab to community issues like social justice, social determinants of health, health advocacy, access to care, and more," says CESL program manager, Sarah Peddle.

There are currently 38 partner organizations (32 in Halifax and six in Saint John with Dalhousie Medicine New Brunswick) connected with the program, an increase of 10 from the previous year. They also had their highest enrollment last year, with 68 students participating, compared to 42 in 2021. "The goal is to continue to enhance the program so that as many students and community-based organizations as possible can benefit from this collective advocacy," says Ms. Peddle. However, to make that happen, the program needs additional funding. Right now, each student may request an operational budget of $300 to implement a program, initiative, or activity within their organization but because of a limited budget, and continued growth of the program, this amount cannot be guaranteed for everyone. Imagine the impact we could have if that budget was increased and made available to everyone?

Ariel Provo and Analyssa Cardenas, both entering their third year of medical school at Dalhousie, partnered with the Wije'winen Health Centre, a local health centre with the goal of providing holistic care for the urban Indigenous community. They worked with the staff to create a promotional campaign detailing the services offered at the clinic, including developing culturally relevant marketing materials. "This experience was a great opportunity for us to engage with our local community and we learned a lot from everyone we partnered with," say Provo and Cardenas. "We can't wait to see the Wije'winen Health Centre continue to grow!"

"These students are the future of our healthcare system," says Ms. Peddle. "There's more we can do to support them as they interact with and serve patients, develop a lens of advocacy, and rebuild broken trust in traditionally underrepresented priority communities." What happens when a young Indigenous person sees a future physician passionately working to solve healthcare challenges at their local community centre? The positive impacts are immeasurable.

The CESL Program helps develop empathetic, service-driven, and well-rounded people who will become compassionate, patient-centric physicians. Physicians that will hopefully practice right here in the Maritimes, compounding the positive impact they have in their communities.

GIVING VOICE TO WOMEN WITH ENDOMETRIOSIS AND PELVIC PAIN

A NEW NORMAL

DONOR FEATURE: MICHAEL HERRICK

Lynda Rae Campbell was a positive, hard-working woman who loved animals, traveling, and her family and friends. A Dalhousie University alum, she spent decades working as a speech language pathologist with the Nova Scotia Speech and Hearing Clinic and as a manager in the Nova Scotia Department of Health and Wellness.

She also worked in health-related organizations in Cameroon, Botswana, Trinidad and Tobago, and in The Bahamas where she was the Pan-American Health Organization (WHO) Representative.

Most of the time, you'd never know Lynda was living with chronic abdominal pain, but there were times over the years that she could be found curled up on the floor in acute agony. In October of 2021, at the age of 70, Lynda passed away from liver cancer, connected to her decades-long battle with endometriosis and abdominal pain.

Endometriosis is a medical condition in which cells similar to the lining of the uterus grow outside the uterus, most commonly on the ovaries, fallopian tubes, and surrounding tissues. Approximately 15 per cent of women of reproductive age suffer from chronic pelvic pain, severely impacting their quality of life.

Numerous trips to doctors and hospital stays in Lynda's lifetime in an effort to solve her pain led to medications, misdiagnoses, surgery, and even a dismissal of her symptoms. Years were spent attempting to find out the cause of her pain and now, her husband, also a Dalhousie alum, Dr. Michael Herrick, is passionate about educating people about endometriosis and chronic pelvic pain, leading to better outcomes for those who experience it. "I would like to give a voice to women like my wife," says Dr. Herrick. "I hope to change the perception of endometriosis and pelvic pain. Excruciating pain is not normal, although many women are told it is normal."

Globally, there isn't enough research about pelvic pain and endometriosis. To improve our understanding of these health issues, including how to better diagnose, treat, and develop improved outcomes for those suffering, more data and research are needed. And now, through Dr. Herrick's generosity, philanthropy is making it possible for us to better understand this under-researched area. "I could never alleviate that pain," he says, "but I want to be part of the solution."

"Endometriosis and chronic pelvic pain are associated with significant health care costs due to physician and emergency department visits, medications, surgeries, and hospital admissions," says Dr. Elizabeth Randle. Along with Dr. Allana Munroe, Dr. Randle is the medical co-lead for the Endometriosis and Chronic Pelvic Pain (CPP) Clinic at the IWK Health Centre—the first multidisciplinary endometriosis and chronic pelvic pain clinic in Atlantic Canada. It has been estimated that CPP is responsible for $1.8 billion in total annual costs in Canada, not to mention the personal costs to those suffering.

Along with their team, Drs. Munroe and Randle are ready to take on this challenge. Their goal is to develop a robust database of this patient population that will drive research and create best practices in symptom management, risk factor identification, and treatment options. The data will educate physicians, like general practitioners, to better diagnose and refer patients with chronic pelvic pain and endometriosis to get the right treatments.

D r. Herrick is inspired by Dr. Randle's team and the work they are doing. "I'm very impressed by their capacity to solve this issue," he says. "But they need funding, so that's how I can contribute." Dr. Herrick is committed to having impact in this area through funding the research that will inevitably help researchers and physicians provide women who are suffering with endometriosis and pelvic pain, with the relief and treatment they deserve. This philanthropic investment will both improve clinical care for women in pain today and establish the rich data set required for future research and discovery.

"We were married for 34 years," says Dr. Herrick, "and we had a great life together. But we could've had longer, and she could've suffered less if we had known more about this affliction that so many women endure."

CHANGE THE FUTURE OF MEDICAL RESEARCH AND EDUCATION

MAKE YOUR MARK

LEAVE A GIFT AS PART OF YOUR LEGACY

By leaving a gift in your will, you can have an incredible and far-reaching impact on the health of our community and the world.

A gift in your will is a special chance to set in motion a ripple effect that will last beyond your own lifetime. Your bequest can help us educate the medical professionals your children and grandchildren will rely upon. It will allow some of the most talented researchers to push the boundaries of innovation and find new and exciting ways to treat—and even cure—diseases that affect each of us, like cancer, heart disease, dementia, and so much more.

THE POSSIBLE IMPACTS OF YOUR LEGACY GIFT ARE ENDLESS.

Advances in medical care and treatments take time and require continual, long-lasting support. Legacy gifts provide a meaningful way for you to contribute to future health care and medical discoveries and breakthroughs that will change lives.

FOR MORE INFORMATION:

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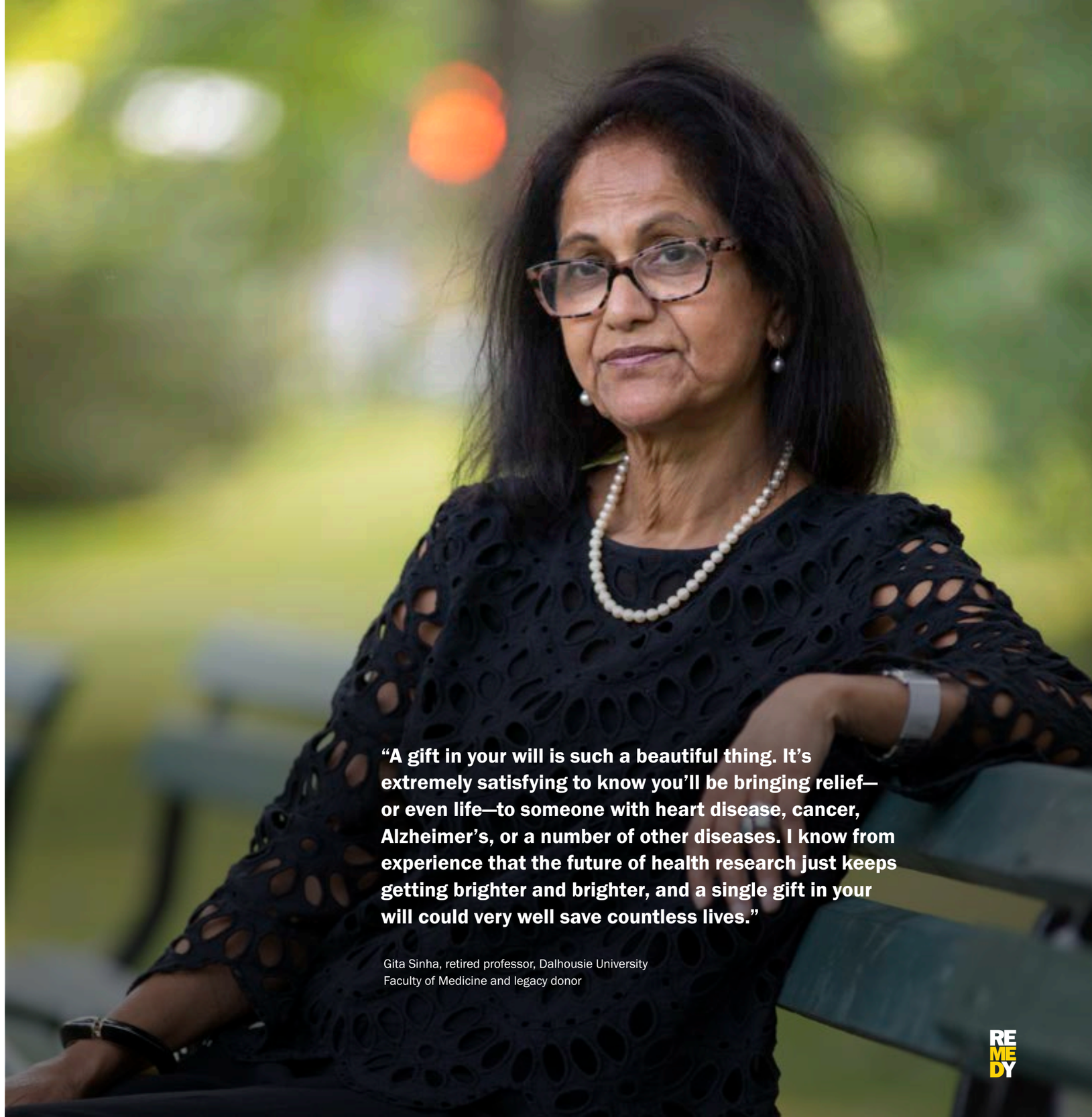

"A gift in your will is such a beautiful thing. It's extremely satisfying to know you'll be bringing relief—or even life—to someone with heart disease, cancer, Alzheimer's, or a number of other diseases. I know from experience that the future of health research just keeps getting brighter and brighter, and a single gift in your will could very well save countless lives."

Gita Sinha, retired professor, Dalhousie University
Faculty of Medicine and legacy donor

COMMITTED TO FINDING SOLUTIONS FOR KID'S IN PAIN (SKIP)

MANAGING KID'S PAIN, MORE THAN EVER

THE NATIONAL PEDIATRIC PAIN MANAGEMENT STANDARD—ESTABLISHED AT DALHOUSIE

If you know kids, you know they are accident magnets; from falling off swings, to jumping to high and hitting their heads, all children will experience some form of pain. But, did you know that one in five Canadian children experience chronic pain before they reach adulthood?

These children are more prone to suffering from mental illnesses and substance abuse and often experience more socioeconomic disparities in their lifetime. Children's pain has been neglected for decades, including most hospitalized kids undergoing painful procedures without any pain management. Although Canada is a research leader in pediatric pain, the challenge is ensuring that the incredible knowledge that is gained is transferred to those who are treating kids on the front line, in hospitals and health care facilities across the country.

skip
solutions for kids in pain
pour la douleur chez les enfants

REAL SOLUTIONS FOR BIG CHALLENGES

That challenge is now being met with a real solution. On April 3rd, 2023, Dalhousie-based Solutions for Kids in Pain (SKIP) and the Health Standards Organization (HSO) announced the country's first national Pediatric Pain Management Standard—a set of guidelines for the delivery of pain management for children from birth to 19 years. The Standard delivers clear guidance to health care organizations across Canada on how to deliver quality pain management for children.

The first of its kind, the Pediatric Pain Management Standard outlines 34 recommendations on how to provide equitable, evidence-informed, and person-centered pain care and supports. It recognizes that children and families are equal members of the health care team and encourages active participation in decision-making about their pain care.

These best practices were developed by SKIP through a working group of experts and specialists in patient and family partnership, health policy, hospital administration, medicine, psychology, nursing, physical therapy, and child life from across the globe.

SKIP's vision is healthier Canadians through better pain management for children and Dr. Christine Chambers, SKIP's Scientific Director and Dalhousie Alum and Faculty member, has been interested in solving children's pain since she was a student. For her entire career, Dr. Chambers has had a goal of mobilizing best practices and putting practical pain management tools in place for children in hospital settings.

With the launch of the Pediatric Pain Management Standard, SKIP is closer than ever to navigating this obstacle. "For years, SKIP has been building partnerships, doing stakeholder outreach, developing regional hubs to grow and implement the research, and a critically important piece of the puzzle—working on attaining research funding," says Dr. Chambers. "We are so grateful to benefit from local philanthropy like Dalhousie's Molly Appeal that has helped us move toward practical impact."

In other exciting SKIP news, to ensure a sustainable future for the program and provide enhanced opportunities for collaboration and support, SKIP will be transitioning from a Network of Centres of Excellence Program (NCE) hosted by Dal, to a Dalhousie Research Centre effective on April 1, 2024. This move will enable SKIP to continue advancing its mission and making a positive impact on children's health across Canada and beyond. "This transition presents an exciting opportunity for us to evaluate SKIP's activities and priorities, deepen our impact, and chart an exciting path for the future," says Dr. Chambers.

In 2021, donors to the Spring Molly Appeal campaign contributed over $100,000 toward advancing equitable access to evidence-based pain management for children through SKIP. The continued generosity of donors is vital to allow the SKIP team to move forward towards inclusive, innovative, and unique ways that will change how children's pain is treated, as there is more work to be done before children no longer have to endure unnecessary pain.

The pediatric pain management framework is an incredibly significant achievement for Dr. Chambers and the SKIP team who are dedicated to ensuring all Canadian children have access to consistent pain care and supports.

SKIP CO-HOSTS INTERNATIONAL SYMPOSIUM ON PEDIATRIC PAIN

On October 1st to 4th, 2023, The International Symposium on Pediatric Pain was held in Halifax, Nova Scotia. As part of the symposium, Pain Education Day: Taking Evidence Outside of the Box, was a Patients Included event hosted on October 1st, by Solutions for Kids in Pain (SKIP) in partnership with the Centre for Pediatric Pain Research (CPPR) and the Pain in Child Health (PICH) training program.

Through special topics, Education Day provided a deep dive into knowledge mobilization for anyone interested in learning more about how to bridge the gaps between research, practice, and policy.

A DECADE OF LIFELONG LEARNERS AND INSPIRING CLINICAL RESEARCH

RESEARCH IN MEDICINE (RIM) PROGRAM CELEBRATES 10-YEARS

When Dr. Jeremy Slayter was in medical school, he thought he would have a career in neurology. But an innovative Dalhousie program soon changed his trajectory. The Research in Medicine program, now in its tenth year, is a longitudinal and self-directed course where students learn about research, and design and develop a research project over the course of their undergraduate studies. A requirement for graduation, the goal of RIM is to instill a high level of critical thinking and create a culture of inquiry among learners.

"It's really been a great addition to the excellent curriculum and education experience we have at Dalhousie," says Dr. David Anderson, Dean of the Faculty of Medicine. "We're very proud to see all that our students have achieved with it and excited to see what's next with the RIM projects of tomorrow." Dr. Slayter, who is a 2023 Dalhousie Medicine New Brunswick (DMNB) graduate, is now a first-year resident in the Department of Medicine's Division of Physical Medicine and Rehabilitation. His RIM project helped develop a passion and understanding that changed the course of his studies. "My RIM project really opened the door and got me a lot more exposure to what neurology and its associated specialties really look like," says Dr. Slayter. "That's really what led me to physical medicine and rehab."

A WORLD OF CURIOSITY

The first of its kind in Canada, RIM was originally conceptualized to ensure students met both accreditation requirements and Dalhousie Medicine's Educational Outcomes, which define competencies students would be expected to exhibit prior to graduation, by fulfilling the role of scholar and lifelong learner. Ideally, through participation in RIM, graduates will be inspired to continue their involvement in research throughout their professional careers.

Though the program has evolved over the years, what has been constant is the agency students have to pursue research in an area that they feel passionate about. "I think that one of the real strengths of RIM is that there's space for different ways of thinking, and different areas of interest," says Dr. Anna MacLeod, RIM Unit Head and Chair of the RIM Committee. "Over the years we have had everything from bench research that takes place in the lab, to people who have taken on social justice projects, and everything in between."

BUILDING LASTING RELATIONSHIPS

The RIM program requires an enormous level of support from faculty and staff at Dalhousie and is generously supported by many donors. For the last 10 years, many alumni and friends of the Faculty of Medicine have been inspired to invest in the RIM program by establishing an endowed fund to support one or more students each year. The RIM program provides $5,000 in funding to each student to offset the costs of research efforts. Donors enjoy learning about the student's research project and seeing their philanthropic investment in action.

Kirby Putnam (Dal BEng '89) endowed the Dr. Andrew Putnam RIM Studentship in Mental Health Research in 2019 in honour of his late brother, Dr. Andrew Putnam (MD '93). He is grateful to see the endowment fund inspiring and supporting aspiring medical professionals on their journey.

"Every year, as we eagerly anticipate the projects our RIM recipients choose to pursue, it reaffirms our commitment to expanding knowledge in the realm of mental health," says Kirby. "Through the impact of our philanthropy, we are making a meaningful difference."

Each RIM student is paired with a mentor who acts as their primary supervisor and guides them through the research process. They are also assigned a RIM Director, who assists in navigating the program and monitors and approves student progress. Dr. Beata Derfalvi is the Division Head of Pediatric Immunology and a RIM mentor. When she arrived at Dalhousie 10 years ago, she quickly recognized the value of RIM, and became involved as a mentor.

"It's an excellent addition to medical education," she says. "It's a very fruitful, mutual collaboration between the mentors and mentees, enriching research and research productivity within the Dalhousie community."

When student and mentor match and mesh, through support and encouragement, an incredibly meaningful relationship develops, and filters into many different aspects of the undergrad experience. According to Dr. MacLeod, it's a highlight of the program.

"A constant piece of feedback we receive is that the relationship people build with their mentor is one of the most meaningful outcomes of RIM.

LIFELONG LEARNERS

Dr. MacLeod, who has graduate training in education, and has been involved in RIM since its inception, says part of her work as Unit Head is to ensure that the program is grounded in solid educational principles.

"Everyone involved has an appreciation of research and why it matters, and how it can be integrated into a career," she says. "But we wanted to make sure that we were really building an educational program that gives learners what they need to succeed." And succeed they have. One hundred per cent of student projects have been presented, including some at national and international meetings. A significant number of these students also published their work.

In the span of a decade, the Research in Medicine program has made remarkable strides, garnering widespread recognition for its achievements and captivating the enthusiasm of both students and faculty. With a recent update to the undergraduate curriculum, RIM has been given more time in the student schedule. RIM's success is a testament to the dedicated individuals who pour their efforts into the program day after day, and their unwavering commitment is mirrored in the accomplishments of our students.

SIMULATION-BASED EDUCATION

TRAINING THE HIGHLY-SKILLED HEALTHCARE LEADERS OF TOMORROW

When you think of simulation you probably imagine a fighter pilot or astronaut sitting in a simulated cockpit practicing emergency landings. Simulation-Based Education (SBE) does get its origins from such flight-based training. This experiential teaching-learning methodology has rapidly become an essential component to training doctors and other healthcare providers to master technical life-saving skills, enhance their teamwork skills essential for today's collaborative healthcare settings, and even enrich their critical interpersonal skills which enhances the patient experience.

When it comes to medical education, you may have heard the adage, "see one, do one, teach one," referring to a physician watching a particular procedure once before performing it themselves. While there's something to be said for learning by doing, this old way of training healthcare professionals simply doesn't prepare future physicians for the high standard of care expected in today's healthcare system.

WHAT IS SIMULATION-BASED EDUCATION?

SBE is an essential training approach that allows learners to immerse themselves in a simulated clinical scenario that looks and feels real, making it more likely they will be able to fully engage in the life-like learning activity and experience the feelings of pressure and urgency they will encounter when in an actual healthcare setting. Using high-tech equipment, live patients and families, interactive mannequins, and cadavers, medical and healthcare trainees can challenge and improve their skills.

"The ability for learners to practice in a space that is both physically and psychologically safe is a game changer when it comes to providing health education experiences," says Associate Dean of Continuing Professional Development and Medical Education and the Director of Simulation for the Faculty of Medicine, Dr. Stephen Miller. "In order to prepare the next generation of physicians to provide highly -skilled patient care, we need to allow them to make mistakes, ask questions, get feedback, and incorporate new knowledge when they try again."

The training happens under the supervision of a healthcare professional and may even be recorded. This gives the opportunity for thorough evaluation and feedback to be provided to medical trainees. Although SBE is especially useful for novice medical trainees with limited clinical exposure, it is also beneficial for experienced medical professionals, as any medical situation can be replicated, and more experienced trainees can benefit from recreating complex, rare, and dangerous situations. No matter a trainee's level of experience, this type of training helps improve patient outcomes.

Dalhousie is Atlantic Canada's leader in training the highly skilled healthcare leaders. Clinical simulation is integral to the training of medical, nursing, physician assistant, and all other students across allied health professions. Simulation training facilities are housed in various locations across campus but are mainly concentrated in the Collaborative Health Education Building and is known as Dalhousie's Centre for Collaborative Clinical Learning and Research (C3LR).

DALHOUSIE'S C3LR

The C3LR is an interprofessional and comprehensive space where students and experts alike can practice and learn complex healthcare procedures in an environment that feels and acts like real life. That is the reality of Dalhousie's expanded C3LR. "The appreciation and understanding of simulation-based education as an educational pedagogy is growing—especially within the health professions," says Dr. Noel Pendergast, Director, Centre for Collaborative Clinical Learning and Research. "There are now evidence-informed, best practice standards in simulation-based education that inform our work at the C3LR."

Dr. Pendergast estimates hundreds of students use the existing C3LR every day, reaching over 500 students per week, from Medicine, Nursing, Nurse Practitioner, and other Faculty of Health departments like Physical and Occupational Therapy, Pharmacy, Social Work, Respiratory Therapy, Speech Language Pathology, and more. "The impact is significant as we are preparing students for applying their learning in real-life practice with our community members," he says.

This type of collaborative care is the future of our health care system, and the C3LR makes it possible for these interdisciplinary teams to practice working together, the way they will in clinical practice, hospital settings, and beyond. "During interprofessional simulations, when students from two or more professions learn about, from, and with each other, students learn how collaborate and communicate as team members in caring for patients and families," says Dr. Pendergast.

In addition to the vital simulation education, the C3LR is also used to perform important research and a number of research studies have been conducted on some of the simulations that occur at the C3LR, especially the interprofessional simulation activities that have taken place.

Key to all simulation learning is the ability for other students and faculty to monitor and record the exercise and then debrief to understand what worked and what could be improved. This monitoring capacity enables medical learners to practice their skills in a realistic but safe setting until they are confident they have achieved mastery.

DALHOUSIE'S SIMULATION FACILITIES UNABLE TO KEEP UP WITH GROWING DEMAND

With healthcare shortages on everyone's mind, all hands are on deck to train more new doctors, nurses, and other healthcare providers as fast as we can. "Nursing, Nurse Practitioner, and Medicine programs at Dal have all seen increased enrollment over the past 3-5 years putting additional pressure on an already stretched thin health system for clinical placements," says Dr. Pendergast. "For example, Nursing has recently seen a 20 to 30 per cent increase in simulation hours to help augment and support their clinical practice."

As a result of this increased demand, and of programs such as the recently announced Physician's Assistant program, a full 18,000-square-foot expansion of medical simulation facilities is needed. An expanded C3LR is vital to getting Atlantic Canadians the healthcare they need and deserve.

Located on Dalhousie's Halifax campus, in the Collaborative Health Education Building (CHEB), the expanded C3LR will be a state-of-the-art space that provides a full range of clinically focused learning opportunities to student doctors, nurses, and other health care professions, as well as practicing clinicians. The new space will include a 6000-square foot development of four high fidelity simulation suites which currently does not exist on campus.

CREATING SOLUTIONS FOR HEALTHCARE CHALLENGES

SBE is also key to unlocking access to the many international and out-of-region healthcare providers by providing facilities for skills assessment, training, and testing to ultimately speed up their licensing. This training facility expansion will be a key resource in changing the face of healthcare in our region and beyond, by supporting the attraction, training, and licensing of our critical, lifesaving talent.

DONORS INVESTING IN SOLUTIONS

Dalhousie's investment in this critical expansion of the C3LR has attracted the interest and support of healthcare partners such as the Province of Nova Scotia but our donors will be stepping up to help in a big way. The Faculty of Medicine Advancement team is actively engaging with our many loyal donors to discuss how they can support this important expansion that will help us produce the doctors and nurses that our region urgently needs.

LEARN MORE

If you would be interested in learning more about supporting the C3LR expansion, please contact Cathrine Yuill, Executive Director of Advancement, Medicine at **cathrine.yuill@dal.ca**.

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molly appeal FOR HEALTH RESEARCH