The **Faculty of Medicine** of Memorial University is the only medical school in the province of Newfoundland and Labrador and one of two in the Atlantic region. The Faculty of Medicine is the academic core of health research in the province.

Memorial’s Faculty of Medicine includes the medical school, postgraduate residency training programs, and graduate programs leading to a master’s, doctoral or MD-PhD degree, or to diplomas in community health, clinical epidemiology and post-secondary studies (health professional education).

The Faculty of Medicine is accredited by the Committee on Accreditation of Canadian Medical Schools and the Liaison Committee on Medical Education.

The doctor of medicine curriculum places particular emphasis on community and rural medicine learning environments, and patient contact starts early in a medical student’s training. The Faculty of Medicine excels in clinical teaching and has research expertise in specific areas of clinical specialties, community health and humanities, epidemiology, applied health and services research and basic medical science including neurosciences, immunology, cardiovascular and renal physiology and genetic research.
TABLE OF CONTENTS

Dean’s Message 1

Strategic Plan 2
  Destination Excellence 2
  Improving Lives 4
  Excellence in All We Do 6
  Empowered People 7
  Enduring Legacy 8

Education 10

Research and Education Collaboration 12

Funding, Awards and Key Fellowships 17

Canada Research Chairs 25

Building a Healthy Tomorrow 26

Administrative Overview 2017-2018 28

Faculty of Medicine’s 50th Anniversary 31
DEAN’S MESSAGE

Memorial University’s Faculty of Medicine stands at a crossroads as we reflect upon our past and look to what future opportunities lie ahead.

We celebrated the medical school’s 50th anniversary in 2017. Throughout the year and into 2018, celebrations were held across the country. During this year of reflection, it was noted that we continue to prioritize the needs of the communities we serve.

At the end of this special year, we were able to celebrate an important fundraising milestone. The Building a Healthy Tomorrow fundraising campaign was launched in 2014 and in December 2017, we announced that we surpassed our $5 million fundraising goal.

Health-related research in our faculty had exceptional growth over the last year including a new partnership with Janssen Inc. that will help translate research into patient management strategies; novel discoveries that could lead to new treatment for hepatitis C; genetic discoveries in conditions that lead to blindness in some Newfoundland families; and studies relevant to improving the health of Indigenous populations.

In January 2018, the Faculty of Medicine’s five-year strategic plan, Destination Excellence, was launched. You will read more about the plan within this annual report as well as the four pillars of the plan – enduring legacy, empowered people, excellence in all we do and improving lives.

Our future looks bright as we build upon our strengths and leverage new opportunities. Thank you for being on this journey with us as we continue to advance health through medical education and research.

Margaret Steele, MD, FRCPC, MEd, DFCPA, CCPE
Dean
Professor, Discipline of Psychiatry
Faculty of Medicine, Memorial University of Newfoundland
In January 2018, the Faculty of Medicine’s five year strategic plan, *Destination Excellence*, was launched. The full plan, which includes four pillars: improving lives; excellence in all we do; empowered people; and enduring legacy, can be viewed on the [Faculty of Medicine website](#).
“We are community inspired. Our ultimate goal is to meet the unique health needs of our rural, remote and urban communities; and advocate for health, equity, Indigenous health and healthy populations. That’s what we’re aspiring to do with this plan; whether it’s through our research, our education or our social accountability, that’s our goal.”

~ Dean Margaret Steele
IMPROVING LIVES

Breakthrough for decade’s long study
In 1983, a 28-year-old man from rural Newfoundland was diagnosed with a hereditary eye condition called Retinitis Pigmentosa (RP), and so began a decade’s long genetics study that had a major breakthrough this past year.

A genealogical analysis linked three families together through a common ancestor, which led to researchers discovering a large deletion in a gene called MERTK; a finding that could help provide a genetic diagnosis for other unsolved RP families, help with treatments and help others who are found to carry this mutation. To read the full story, click here.

“While working on this project, I had the unique opportunity to integrate laboratory, or bench science, with real-world clinical experience. It’s one of the main reasons I enjoy genetics actually. It’s really rewarding when you can see the positive impact the research has on patients and families.”

~ Daniel Evans, MD-PhD student in the Discipline of Genetics, who worked on the molecular genetics aspects of the RP study
The point of care
Dr. Diku Mandavia, MD ’89, is senior vice president, chief medical officer of FUJIFILM SonoSite and a clinical associate professor of emergency medicine at the University of Southern California in Los Angeles.

The Grand Falls-Windsor native knew he wanted to specialize in an urban setting with a lot of trauma. He was accepted into the emergency medicine program at Los Angeles County (USC) Medical Center, the biggest trauma centre in the United States. It was the early 1990s, at the height of gang violence.

“It was like a M*A*S*H unit. It was not like a hospital. It was more like an urban battlefield. I was looking after a lot of knife and gun injuries, a lot of motor vehicle accidents, a lot of heart attacks and strokes. The training was incredible. One thing I was quite frustrated with was trying to take care of patients that would die in front of us with undetected internal bleeding. One day I got introduced to ultrasound. It was very large, bulky, weighed a few hundred pounds but I thought maybe there’s a way here of improving trauma care using this technology,” said Dr. Mandavia.

At USC, he founded and directed one of the largest training programs for point of care ultrasound (POCUS). It was the first program in the country to mandate that every emergency physician be trained in ultrasound. Since then, Dr. Mandavia has taught thousands of physicians worldwide and has lectured at over 150 national and international conferences and has over 90 publications.

His pioneering work in POCUS led him to partner with SonoSite (now owned by FUJIFILM) which developed the first handheld ultrasound for the United States Military. These devices are now used around the world to improve patient care in emergency rooms, intensive care units, operating rooms, offices, ambulances and within global health.

Dr. Mandavia still works at LA County Hospital in the emergency room. You can watch part of his story here.
EXCELLENCE ALL WE DO

On June 21, 2017, National Aboriginal Day, the Faculty of Medicine hosted its first Aboriginal Health Symposium. The half-day symposium showcased Aboriginal education and research taking place at Memorial University. It featured keynote speaker Dr. Michael Dan, former neurosurgeon and one of Ontario’s most generous philanthropists, with a presentation entitled The impact of colonization on the health of Indigenous people in Canada.

The symposium also featured oral and poster presentations of research related to Aboriginal health from across the university.

Expanding our global health reach

This year, the Faculty of Medicine joined the global organization Canadian Partnership for Women and Children’s Health (CanWaCH). CanWaCH catalyzes Canadian collaboration among its partners who are improving women’s and children’s health in 1,000 communities. Memorial is one of 100 partners.

“Collaborating in larger networks facilitates opportunities to be part of a movement and strengthens our contributions to global health equity. CanWaCH provides opportunities for partners in the global north to hear from low-income countries and develop approaches that are driven by the needs of the people who have experience in the context.”

“As a smaller global health program, we have a lot to gain by working in partnership with larger groups. This collaboration fits very well with the Faculty of Medicine’s Global Health program which emphasizes partnerships, equity, social accountability and advocacy.”

~Dr. Jill Allison, Global Health coordinator, Division of Community Health and Humanities

To read the full story, click here.
Barbara Morrissey received the 2017 President’s Award for Exemplary Service

According to her citation, Ms. Morrissey has been an integral part of the Discipline of Family Medicine since 2005. As the clinical operations manager, her knowledge of the discipline enables her to provide direction and support to faculty, staff and students. For students and residents who rotate through the faculty’s teaching sites, Ms. Morrissey is the key contact. She ensures they have a productive learning experience and prepares them for their next role as doctors in Newfoundland and Labrador, and the world. To read the full story, click here.

Dr. Pauline Duke was named a human rights champion by the Newfoundland and Labrador Human Rights Commission

Dr. Duke, a Memorial alumnae and family medicine professor, is an award-winning physician, educator and advocate for refugee health care, as well as a co-founder and a lead physician at the Refugee Health Intake Clinic. Since 1989, and before she retired earlier this year, Dr. Duke had been practicing family medicine at the Family Practice Unit, Health Sciences Centre, in St. John’s. Her comprehensive clinical practice included house calls, home palliative care, geriatrics, prenatal care and women’s health. To read the full story, click here.

Dr. Kathy Hodgkinson wins the Marilyn Harvey Award to recognize the importance of research ethics

The associate professor and program coordinator of clinical epidemiology/genetics focuses on genetics and inherited causes of sudden cardiac death, in particular, arrhythmogenic right ventricular cardiomyopathy (ARVC). Dr. Hodgkinson is part of the team that discovered the ARVC sudden cardiac death gene in Newfoundland and Labrador families, which has led to international research collaborations to explore the genetic connections to sudden cardiac death worldwide. To read the full story, click here.

New mentoring project team

In order to formalize a mentorship program in the Faculty of Medicine, a mentorship working group was established in the fall of 2017. The group will build upon existing mentorship opportunities in the faculty to create formal mentorship programs for faculty and learners through the use of best practices. With Dr. Cathy Vardy, vice dean, as the chair, the working group is comprised of faculty, learners, and staff that represent programs within the Faculty of Medicine.
ENDURING LEGACY

The **Office of Professional Development** (OPD) received an eight-year accreditation from the **Committee on Accreditation of Continuing Medical Education (CACME)**. The **Association of Faculties of Medicine of Canada’s CACME** provides a periodic accreditation process to ensure that university continuing medical education and professional development (CME/CPD) offices exhibit high standards of performance through a standards-based external review.

The report highlighted a number of key strengths including a dedicated senior leadership team, providing innovative online and webinar learning opportunities, supporting research and strong partnerships.

“As the only university-accredited provider of CME/CPD in the province, we have a strong accountability to physicians and other health professionals. The Office of Professional Development strives to ensure we are offering an accessible level of programming that is responsive to the lifelong learning needs of our healthcare practitioners.”

~ Dr. Vernon Curran, associate dean, educational development, Office of Professional Development

To read the full story, click [here](#).

Reducing harm

A group of MD students presented a naloxone and opioid overdose awareness session to Memorial University students in March 2017. They helped students recognize the signs of an overdose, how to respond and provided information on Campus Enforcement and Patrol’s non-punitive approach to overdosing. So far, their audience has been a group of 70 residence advisors with a plan for more this year.

“I love how this project empowers students to recognize and appropriately respond to an opioid overdose. In essence, it was amazing to go beyond classroom learning about harm reduction, and apply these principles on addressing a pressing issue in our community.” ~ Liban Mohamed, class of 2020, presented with fellow students Erin Marshall, Madison Lewis and Matthew Downer

“As a medical student, we rarely get an opportunity to engage in these population-based initiatives, so it was great having this opportunity.”

~ Liban Mohamed, class of 2020

Two-eyed seeing

In March 2017, students from the Faculty of Medicine, Nursing, Pharmacy, Social Work, and Human Kinetics and Recreation visited Sheshatshiu, Labrador. They created and delivered simulation activities highlighting health careers to children from grades six to 12 for a new program called Seeing Beyond Good Medicines. As part of the Aboriginal Health Initiative, the visiting students worked in inter-professional teams in the spirit of ‘two-eyed seeing,’ where Innu elders and healers, along with Innu youth, shared their knowledge of healing practices. To read the full story, click [here](#).

“I believe this opened the doors for Innu students to think about medicine and healing strategies in our community.” - Kanani Davis, educator and Innu consultant, Sheshatshiu Innu First Nation Health Department
“The Innu made good use of their surroundings and found unique and multipurpose medicines. It was neat to learn that not only do the Innu make use of Western medicine, but they continue to use it in conjunction with their own traditional medicines.”

~ Burton Ward, MD student
Leading the charge for competency-based medical education in Canada

Competency-based medical education (CBME) is an outcomes-based approach to medical education that focuses on the abilities of health professionals to combine knowledge, skills, values, and attitudes in a professional and clinical context. It relies on four foundations:

• Focusing education on patient outcomes
• Emphasizing learner abilities
• De-emphasizing time-based learning
• Increasing individualized trainee plans for the learner

Building on this competency framework, Entrustable Professional Activities (EPAs) provide a conceptual approach to assessment in CBME.

In 2015, Memorial University became the first in Canada to introduce EPAs into an undergraduate clerkship curriculum, and it is now being adopted by the Disciplines of Emergency Medicine, Internal Medicine, Obstetrics and Gynecology, Pediatrics, Psychiatry, Rural Family Medicine, Surgery and Anesthesia.

The Discipline of Anesthesia, eHealth Research Unit, and Health Sciences Information and Media Services has also worked to develop an assessment app for EPAs, called MUNCAT (Memorial University of Newfoundland Competency Assessment Tool). The app is used to grade resident’s EPA performance through observation and, with the slide of a finger, the observation can be graded. There is also a section to be filled out by the resident, which can include the feedback, formal or informal, from the instructor.

“Using EPAs as a teaching opportunity, and then as an assessment tool, takes the job of passing or failing away from the instructor and gives it to a competence committee. The preceptor’s job now is primarily as the coach, then teacher, to make the learner better. I have found my colleagues more comfortable with deciding how much help they had to give a resident compared to decisions of whether he or she met expectations. Is the system perfect? No. However, we are getting there,” said Dr. Michael Bautista, associate professor, Discipline of Anesthesia.

The EPA is primarily a teaching opportunity to build competence, rather than to just assess and verify its completion. Residents are encouraged to look for opportunities, or to make opportunities, to do several EPAs for the purpose of getting feedback, even for one case.
A case where an elderly lady has a fractured hip, the EPAs to complete can include:

- the patient assessment and the anesthetic plan
- the arterial line, the spinal
- the fascia iliaca block
- the conduct of the anesthetic
- the care and treatment of complications in the recovery room

“Competency based medical education requires residents to be independent and accountable learners. By using Entrustable Professional Activities evaluations, we can reflect on day-to-day experiences in order to find opportunities to fill gaps in our clinical knowledge and skills.”

~ Alex Ng, first year anesthesiology resident

“A residents retreat two years ago brought about changes in the daily in-training evaluations that made for more feedback, and less assessment. The arrival of competency based medical education made those changes even greater.

~ Dr. Michael Bautista, associate professor, Discipline of Anesthesia
RESEARCH AND EDUCATION COLLABORATION

THE FACULTY OF MEDICINE HAS A RICH HISTORY OF COLLABORATING WITH LOCAL AND NATIONAL ORGANIZATIONS ON GROUND-BREAKING RESEARCH INITIATIVES.

The new Centre for Bioethics is a university-wide initiative, serving as a focal point for research and education in bioethics. Initiated by the Bioethics Group in the Division of Community Health and Humanities, the centre was approved by the Board of Regents in December 2017 and by January 2019 organizers expect to have an established membership.

“The centre will augment and support the research capacity of its members; but beyond that, it will be a forum to attract local, national, and international researchers and educators from a variety of disciplines. The centre will enable and foster new relationships and generate cross-disciplinary innovation in bioethics theory, research, education and practice.” ~ Excerpt from the proposal to establish the Centre for Bioethics

New research partnership focuses on managing complex diseases
The Faculty of Medicine is partnering with Janssen Inc. to translate research into disease management strategies to help patients.

The collaboration, called Janssen and Newfoundland and Labrador Health Innovation Partnership (JANL-HIP), is identifying priorities and undertaking real-world research projects in complex diseases that are highly prevalent in Newfoundland and Labrador.

“I believe Memorial University is an ideal epicentre for research into these very debilitating conditions.”
~ Stephen Duffy, diagnosed with psoriatic arthritis at age 35, is very thankful for the personalized management of his disease
JANL-HIP is a collaboration which also includes representation from the Government of Newfoundland and Labrador, Eastern Health and the Newfoundland and Labrador Centre for Health Information. To read the full story, click here.

Memorial, Eastern Health combine expertise to improve thrombosis care
Dr. Rufaro Chitsike, assistant professor of hematology, has partnered with Dr. Stephanie Young, School of Pharmacy, to set up a thrombosis clinic. They are also collaborating with Eastern Health on the initiative that’s providing thrombosis care efficiently for both patients and the health-care system.

“I came to Newfoundland and Labrador in January of 2012, and the first meeting of the Eastern Health anticoagulation committee met a couple of months after that. Stephanie was chairing that committee and afterwards, I thought, ‘Where have you been all my life?’”

~ Dr. Rufaro Chitsike, assistant professor of hematology

The service includes an emergency thrombosis clinic for care after a blood clot diagnosis, several types of follow up clinics depending on the type of medication the patient is receiving and the needs of the patient, and a clinic to develop a management plan for anticoagulation medication, if surgery or a procedure is required. To read the full story, click here.
Multidisciplinary collaboration
Dr. Robert Gendron from the Division of BioMedical Sciences has teamed up with Dr. William Driedzic, Department of Ocean Sciences, to study dietary vitamins in the vision health of lumpfish. The research will provide new knowledge on the role of dietary vitamin A in the fitness of the lumpfish and will have direct impacts on the success of the aquaculture industry by providing a better understanding of how to optimize aquaculture diets. It will also provide insight into dietary effects on vision.

The infrastructure for the project by Drs. Gendron and Hélène Paradis, professor of vascular molecular biology/pediatric cancers, is funded through the Canada Foundation for Innovation and Memorial University’s Vitamin Research Fund, which links to the Ocean Frontier Institute. To read the full story, click here.

“Since vitamin A metabolism is central to a range of human retinal diseases, understanding how lumpfish might manage vitamin A metabolism in the face of stress could teach us a thing or two not only about basic lumpfish biology, but also about how to better understand how the human retina handles vitamin A during stress and disease.”

~Dr. Robert Gendron, professor, Division of BioMedical Sciences
Working with health authorities
The Discipline of Family Medicine’s distributed streams approach to medical education in the province and New Brunswick benefits greatly from collaboration with regional health authorities (RHAs) in Newfoundland and Labrador, and Horizon Health in New Brunswick.

RHAs recognize the importance of having learners and have provided funding for travel for additional faculty and residents to interview potential candidates for residency positions. Early statistics show a positive impact on recruitment and retention with residents signing contracts with the RHAs they have trained in, following graduation.” ~ Dr. Katherine Stringer, chair, Discipline of Family Medicine

The Faculty of Medicine’s profile in New Brunswick (NB) was strengthened this past year when the New Brunswick team welcomed Dr. Gary Duguay as Memorial site director in Moncton and a targeted recruitment project succeeded in increasing faculty appointments by 18.5 per cent.

Dr. Duguay and some of these new faculty members are preparing for the first Memorial Longitudinal Integrated Clerkship launch in Moncton for the 2018-19 academic year, with development plans for Fredericton in the coming year. NB also expanded Progression to Postgrad training opportunities, offering this rotation in all of the five main teaching sites.

In addition to the many family medicine residents trained in NB, Moncton now houses a core obstetrics rotation and has been involved in teaching anatomical pathology.

“The goal of the Memorial NB team continues to be providing excellent training opportunities for Memorial learners in NB; this year we will do so with Destination Excellence in mind and look at ways to integrate those strategies into our daily work and development ideas.” ~ Dr. Tom Laughlin, assistant dean, New Brunswick
The Newfoundland and Labrador Centre for Health Information (NLCHI) works to improve the health of all Newfoundlanders and Labradorians by providing quality health information to health professionals, the public, researchers and decision-makers. During 2017-18:

- NLCHI collaborated with the Faculty of Medicine to provide access to a demonstration environment of the provincial electronic health record, HEALTHe NL, as part of the second year curriculum.
- NLCHI’s electronic medical record program, eDOCSNL, began work with the OPD to create a continuing medical education credit program to support implementation of the electronic medical record program in Newfoundland and Labrador.
- In August 2017, Dr. Kris Aubrey-Bassler, associate professor and director of the Primary Healthcare Research Unit, was appointed as chairperson on NLCHI’s Board of Directors.
- In August 2017, Dean Margaret Steele was appointed to NLCHI’s Board of Directors.
- NLCHI is an important partner for Quality of Care NL/Choosing Wisely NL in its role as health data management for the province. The Choosing Wisely team interpret data on health care utilization provided by NLCHI and suggest/evaluate interventions that may improve quality of care, allowing them to provide unbiased advice based on evidence to providers, such as doctors, nurses, health care authorities or the Department of Health.

Opening of new centre opens new research opportunities

In October 2017, Eastern Health with representatives from the Provincial Government and Memorial University announced the official opening of its Nuclear and Molecular Medicine facility, which houses Newfoundland and Labrador’s first positron emission tomography/computerized tomography (PET/CT) scanner. A significant investment into Eastern Health’s Nuclear and Molecular Medicine Program, the PET/CT scanner is leading-edge medical equipment that will offer improved assessment, diagnosis and treatment of certain types of cancer, cardiac disease and some neurological disorders.

“Eastern Health’s state-of-the-art Nuclear and Molecular Medicine Program will open up a wealth of interesting research opportunities that may lead to life-changing discoveries. Having access to the latest technology will enable Memorial and Eastern Health to partner in ground-breaking research that will better inform audiences about more targeted and personalized therapy for patients.”

~ Dean Margaret Steele
The Office of Research and Graduate Studies supports and advances the Faculty of Medicine research activities. Five core staff members assist faculty researchers in crafting competitive grant applications, identifying funding opportunities and ensuring adherence to institutional and tri-council policies and procedures. The office also assumes administrative responsibility for graduate programs in the faculty through facilitating the graduate program admission process, arranging graduate student funding and coordinating comprehensive examinations and thesis submissions.

Canadian Institutes of Health Research (CIHR)

Dr. Bruno Stuyvers, professor of cardiac and renal physiology, Division of BioMedical Sciences, received a Bridge Grant of $100,000. His research will focus on the intracellular control of cardiac electric activity in normal and diseased hearts. To read the full story, click [here](#).

Katie Wadden, who does research with Dr. Michelle Ploughman, was awarded a Postdoctoral CIHR fellowship for her project, *Neuroprotective effects of upper extremity skilled learning in people with MS.*

Funding recipients

Dr. Craig Moore, Canada Research Chair in Neuroscience and Brain Repair, Division of BioMedical Sciences, received $600,525. Using this funding, Dr. Moore and his team will develop new strategies to protect the brain from Multiple Sclerosis (MS), an autoimmune disease of the central nervous system for which there is no cure.

Dr. Dake Qi, assistant professor, Division of BioMedical Sciences, received $650,250 to study how to limit the side effects of drugs to treat schizophrenia and bipolar disorder.
Dr. Kensuke Hirasawa, professor of immunology, Division of BioMedical Sciences, was awarded $573,750 for a project on cancer therapy and antiviruses. His study focuses on molecular mechanisms of viral oncolysis - viruses that infect and destroy cancer cells. This research will improve efficacy and safety in treating cancer.

Dr. Michiru Hirasawa, professor of neurosciences, Division of BioMedical Sciences, received $531,675 to study obesity. Her goal is to discover novel therapeutic targets for obesity and determine why high fat diets-induced inflammation of the hypothalamus can lead to obesity.

Dr. Thomas Michalak, University Research Professor and professor of molecular virology and medicine (hepatology), also from BioMedical Sciences, received $761,175 to further advance his research on Hepatitis B virus. This allows him to reactivate occult infection in woodchucks by commonly used drugs to predict if reactivation may occur and what to do to prevent it.

Dr. Guangju Zhai, professor in the Discipline of Genetics, was awarded $791,775 to study osteoarthritis, a common form of arthritis which affects about 10 per cent of the world’s population aged 60 or older. He wants to better understand if novel genetic and metabolic markers for osteoarthritis can be used to predict disease risk.

Dr. Stephen Bornstein, professor in the Division of Community Health and Humanities and the Faculty of Humanities and Social Sciences, received a Bridge Grant of $100,000 towards an inter-provincial partnership examining ways to improve health systems in rural Canadian communities, including those with Francophone, First Nations, Métis, Innu, and Inuit populations. To read the full story, click here.

**Alzheimer Society Research Program (ASRP)**

Dr. Matthew Parsons, assistant professor, Division of BioMedical Sciences, received $225,000 in funding from ASRP to shed new light on the debilitating cognitive impairments (i.e. memory) in Alzheimer’s disease and identify new strategies to improve it. His research focuses on a toxic protein that accumulates in the brains of patients and how it affects the way our brain cells communicate with one another. To read the full story, click [here](#).

“**In order to find more effective treatments for Alzheimer’s disease, we need to understand the disease at so many levels; from the behaviour of cells in a dish all the way up to clinical trials in Alzheimer’s disease patients, and everywhere in between.”**

~ Dr. Matthew Parsons, assistant professor, Division of BioMedical Sciences
This year, Dr. Diana De Carvalho, assistant professor of medicine and the Canadian Chiropractic Research Foundation Professor in Spine Biomechanics, and Dr. Michelle Ploughman, Canada Research Chair in Neuroplasticity, Neurorehabilitation and Brain Recovery, created a new Comprehensive Biomechanics Laboratory. The project received $126,101 from the CFI's John R. Evans Leaders Fund.

Dr. De Carvalho’s research studies the biomechanical and neuromuscular responses to prolonged sitting to help prevent occupational related low back pain.

Dr. Ploughman’s program focuses on developing innovative intensive rehabilitation models to affect neuroplasticity and promote recovery in stroke and multiple sclerosis.

“The equipment in this new lab is able to precisely track whole-body motion in three dimensions, quantify muscle activity, and model internal joint forces. With these highly sophisticated outcome measures, we will be able to objectively characterize disease and injury states, and accurately test the effect of novel intervention strategies. Combining Dr. Ploughman’s research on stroke and multiple sclerosis with my research on low back pain, will have far-reaching impacts on the health and well-being of almost every person in Canada.”

~Dr. Diana De Carvalho, assistant professor, Discipline of Medicine

Dr. De Carvalho also received funding from the Natural Sciences and Engineering Research Council of Canada’s Discovery Research Program for the study. To read the full story, click here.
The Faculty of Medicine’s Office of Professional Development (OPD) and Medical Education Scholarship Centre (MESC) support our faculty, health professionals, and learners through professional development and medical education scholarship across the continuum of learning. Services include accredited professional development programs via traditional and distance delivery methods, scholarly research, assessment, and evaluation. With a commitment to lifelong learning and education development, OPD/MESC used funding received over the past year for various projects including:

- $16,749 from the Newfoundland and Labrador Centre for Health Information for a project on electronic medical records (EMR). Collaborating with the Newfoundland and Labrador Medical Association and eDOCSNL, the needs assessment documents physicians’ perceptions and experiences using an EMR specifically, the provincial EMR (Med Access), to help inform a continuing professional development strategy.

- $18,068 from the Government of Newfoundland and Labrador’s Department of Health and Community Services to develop, deliver and evaluate an online module focusing on safe prescribing of opioids, benzodiazepines and stimulants. The project is conducted in collaboration with the College of Physicians and Surgeons of Newfoundland and Labrador.

- $201,050 (between 2015-2018) from the Social Science and Humanities Research Council of Canada on a mixed method study to explore how adult learners are using digital and social media technologies for their continuing professional development.

- $20,000 from the Medical Research Fund to assess competency development in clerkship. The project explores clinic e-cards and Entrustable Professional Activities to determine best practices and help improve the learning outcomes of medical students.

- $10,000 from the Canadian Institutes for Health Research and $5,000 from the Memorial University Conference Fund to conduct the Digital Health Revolution: Implications for Health Research and Policy in Newfoundland and Labrador conference. Researchers, experts, government officials, and health care professionals will come together to discuss digital health within the province and foster future interdisciplinary and inter-sectoral research and development in the field.

- $29,553 from the Government of Newfoundland and Labrador’s Department of Health and Community Services to develop two online, accredited e-learning modules for Family Physicians and Specialists – Module # 1: Adverse Transfusion Reaction; Module #2: Intravenous Immunoglobulin.

- $158,175 from the Government of Newfoundland and Labrador’s Department of Health and Community Services for the Physician Management and Leadership Program to prepare participants for leadership roles in the province’s health care system.
Beatrice Hunter Cancer Research Institute
PhD student Kayla Holder and postdoctoral fellow Dr. Vipin Chelakkot both won a two-year graduate fellowship with the Cancer Research Training Program from the Beatrice Hunter Cancer Research Institute. It’s Dr. Chelakkot’s second fellowship and, as an additional honour, Ms. Holder was the top-ranked PhD candidate of the nine students in her competition.

Ms. Holder’s research could have big implications for cancer treatment. She investigates strategies to compel white blood cells (called natural killer cells) to target cancer cells, some of which have evolved to avoid the natural killers.

Dr. Chelakkot is part of a team that studies cancer cell death triggered by photodynamic therapy, a minimally invasive treatment that doesn’t harm healthy tissues. He’s hoping his research will increase the treatment efficacy in different types of cancers.

Funding for both awards was provided by the Terry Fox Research Institute with matching funds from the Canadian Cancer Society and Memorial University’s Medical Research Fund. To read the full story, click here.

Valerie Webber received $105,000 from the Social Sciences and Humanities Research Council’s Joseph–Armand Bombardier Canada Graduate Scholarships Program for her research project, Public privates: Measure B, pornographic sex, and the ethics of public health. Her goal is to advance the fields of public health ethics and pornographic studies by examining the ethical implications of conversations that frame pornography as a public health crisis, and how this shapes the lives of pornography professionals and sexual subjectivities in general. To read the full story, click here.

“Framing certain issues as matters of public health is a powerful way to push forward moral imperatives under the guise of health. That said, I do think that many of the people using this language are genuinely concerned about the place of sexuality in our culture, but targeting pornography as solely responsible for these concerns grossly oversimplifies sex, sexuality, and the relationships people have between sexual media and their own sexual beliefs and practices.”

~ Valerie Webber, graduate student, Community Health and Humanities
A grant from the International Grenfell Association allowed 21 students to experience health care careers first hand with the Healers of Tomorrow Gathering.

The $65,000 grant was awarded to the Aboriginal Health Initiative (AHI), which focuses on services and programs designed to recruit more Aboriginal students into the Faculty of Medicine. AHI also serves to heighten cultural sensitivity of both Aboriginal and non-Aboriginal students on issues of Aboriginal health and health care services.

The students, 20 of whom were from Newfoundland and Labrador and, for the first time, one from Nunavut, spent a week at Grenfell Campus.

“With education, you never know the end results and sometimes it takes years to find out. It can transform them. Young people are always worth the investment. A program like this gives them the opportunity to not only choose, but to give back to their community; to be productive community members, with the skills to contribute.”

~ Dr. Carolyn Sturge Sparkes, coordinator of the Aboriginal Health Initiative

With $450,000 from the International Grenfell Association, Drs. Shabnam Asghari, Cheri Bethune, and Wendy Graham, along with co-investigators Drs. Thomas Heeley, Jim Rourke, Marshall Godwin, and Kris Aubrey-Bassler, created Rural360, a new extension of their innovative 6for6 research training program for rural physicians. Rural360 helps 6for6 participants and alumni conduct, disseminate or otherwise catalyze unsupported community-based research in Northern Newfoundland and coastal Labrador. The team recently received proposals for the first Rural360 funding call, which included projects comparing surgical referral patterns in Labrador to the rest of the province and a knowledge translation initiative for aeromedical evacuations in Labrador.
Top honour for cancer researcher
Third-year undergraduate student Junbum (Kevin) Im, who works with Dr. Mani Larijani, received the top award in Atlantic Canada for cancer research from the Beatrice Hunter Cancer Research Institute Summer Studentship.

Mr. Im researches DNA-mutating enzymes that cause and exacerbate cancers including lymphomas, breast, ovarian, lung cancers and melanomas. These enzymes work by mutating the DNA of cancer cells which causes cancers to become drug-resistant, therefore much harder to treat and more aggressive.

Double honours
Gerissa Fowler, a first-year masters student in the Discipline of Genetics, is the recipient of two impressive scholarships.

Ms. Fowler was one of 13 outstanding First Nations, Inuit and Métis individuals selected for the Indspire’s, Building Brighter Futures: Bursaries, Scholarships, and Awards program.

The other scholarship she received was the Terra Nova Aboriginal Masters Student Scholarship, established with the generous support of Terra Nova to encourage Aboriginal students in the pursuit of graduate programs at Memorial University. To read the full story, click here.

Dr. John Thoms, associate professor of radiation oncology, received the 2017 Cox Award for his research on Micro-RNA-200b-3p as a novel regulator of prostate cancer radiation therapy resistance. The award is granted to the top-ranked grant application in support of research excellence.

Dr. Matthew Parsons is this year’s recipient of the Terra Nova Young Innovator Award, which recognizes and supports outstanding young faculty members whose research is particularly innovative and has real potential to make a significant impact on society. The award is supported through $50,000 in funding from Suncor Energy, on behalf of the partners in the Terra Nova oil field.

Dr. Parsons, an assistant professor of neurosciences, Division of BioMedical Sciences, is leading a pioneering research study aimed at understanding how a healthy brain works and what goes wrong in neurodegenerative diseases such as Alzheimer’s disease.

“Part of the Terra Nova Young Innovator Award will be used towards setting up new infrastructure in my lab. This new equipment will allow me to train more students to become experts in advanced imaging techniques in the neurosciences, and will help us to conduct fundamental research with high relevance to Alzheimer’s disease.” ~ Dr. Matthew Parsons, assistant professor, Division of BioMedical Sciences
Michael Bartellas hopes that what he is doing now will not only have a significant impact on health care in Newfoundland and Labrador, but will also add to global innovation. The third-year doctor of medicine student was recently awarded the Charles Tabachnick Canadian Medical Hall of Fame Award. He was inspired by Dr. Walter Mackenzie. To read the full story, click here.

"With each of his achievements, Dr. Mackenzie overcame huge hurdles, setbacks and opposition. He is a modern day titan, and in my future, I strive to carry myself as he did, and to simply put it, make a lasting difference."

~ Michael Bartellas, MD student

Dr. Michael Grant, professor of immunology and associate dean, Division of BioMedical Sciences, is the 2018 Hardy Cinader Award Recipient from the Canadian Society for Immunology.

Dr. Grant’s laboratory studies the immunology of chronic viral infection with a focus on human immunodeficiency virus, hepatitis C virus and cytomegalovirus. His research goal is to develop immune-based strategies that slow the onset of immune senescence and limit the need for antiviral drugs. Named in honour of Dr. Hardy Cinader, the award is presented to an immunologist working in Canada who is an exceptional researcher. To read full the full story, click here.

Former graduate student, Alison Sutherland received the 2017 Rothermere Fellowship. Ms. Sutherland is now at the University of Cambridge in the United Kingdom to begin her PhD where her research could result in more accurate predictions of disease development and drug response for Indigenous Canadians. While at Memorial she studied genetic markers for treatment response in patients with psoriatic arthritis.

"This award allows me to shift within the discipline from medical to evolutionary genetics, which will help me to gain a better-rounded knowledge base in genetics."

~Alison Sutherland, graduate student

To read the full story, click here.
Dr. Michelle Ploughman
Canada Research Chair (Tier II) in Rehabilitation, Neuroplasticity and Brain Recovery

Dr. Ploughman is developing novel methods to promote repair and restoration of function in stroke and multiple sclerosis (MS) with new rehabilitation techniques to reduce disability and improve quality of life.

Dr. Craig Moore
Canada Research Chair (Tier II)
Neuroscience and Brain Repair

Dr. Moore is researching a newly discovered method of cell-to-cell communication that may lead to new drug therapies for MS, and other brain diseases.

Dr. Ben Zendel
Canada Research Chair (Tier II) in Aging and Auditory Neuroscience

Dr. Zendel’s research interests include aging; hearing, auditory processing; music and speech perception; music training; cognitive neuroscience; and neuroimaging.

Dr. Diana De Carvalho
Canadian Chiropractic Research Foundation Chair in Spine Biomechanics

Dr. De Carvalho’s research focuses on the biomechanics of the human spine, especially in seated postures, in the context of injury mechanisms, treatment options and prevention strategies.

Dr. Thomas Belbin
GlaxoSmithKline (GSK) Chair in Oncology

Dr. Belbin researches apoptosis and cancer, bioinformatics, cancer diagnosis and detection, cell signaling and cancer, genomics, and head and neck cancer.
Every day Memorial University’s Faculty of Medicine is working on the health-care challenges that affect Newfoundland and Labrador’s communities and families. Through education and research we are finding solutions.

With the Building a Healthy Tomorrow Campaign, the faculty invited communities to join us in the pursuit of good health. Over the past three years, nearly 750 individuals, foundations or corporations contributed $5,105,666 to empower learners, enhance learning environments and enable new discoveries in health care.

Thank you to all who have helped to put the imagined within reach. The resolve of our future physicians and scientists has never been stronger and you are an integral part of this journey.

TOMORROW’S HEALTH-CARE LEADERS

$3,291,236 to inspire the next generation of exceptional physicians and medical scientists by supporting:

Awards for special achievements to encourage accomplishments and reward success.

Bursaries to remove barriers and support our learners.

Scholarships for academic excellence to ensure we have the best physicians and researchers possible.

“Every day we worry that my daughter just won’t wake up. Research happening at Memorial gives us hope that we may be able to find ways to help change her story.”

~ Patti Bryant, mother of a child with epilepsy
$906,966 to keep pace with current and future health-care challenges as part of our ongoing commitment to excellence in patient care and safety. Gifts in this area supported:

- Technology to advance teaching methods that will produce world-class physicians and medical scientists.
- Equipment to enable learners to hone their skills in a safe environment.

Enrichment activities build on strengths, putting community first and seeking answers through collaboration and knowledge sharing. Examples of supported initiatives in this area included:

- Professorships and faculty awards.
- Indigenous and global health programming.
- Public awareness, cultural and artistic activities expanding our awareness and appreciation for medical education in Newfoundland and Labrador.

$907,463 in research funding, driving the promise that behind every experiment, calculation and interaction – our work can save lives and create hope. Our donors enabled:

- Targeted funding for specific medical concerns that impact the communities that we serve and beyond.
- Equipment for medical research.
- Seed funding for early stage research.
In 2017-2018, the Faculty of Medicine had $74 million in operating revenue, as well as $16 million in research revenue. During the year, the faculty successfully implemented both position-based budgeting and zero-based budgeting. The faculty also celebrated a milestone for the Building a Healthy Tomorrow Campaign, which has raised more than $5 million for student support, simulation and educational technology, and research. In the coming year, the faculty will continue to be committed to delivering integrated excellence in education, research and evidence-informed care; meeting the unique health needs of our rural, remote and urban communities; and advocating for health, equity, Indigenous health and healthy populations.
### FACULTY

<table>
<thead>
<tr>
<th>DISCIPLINE/DEPARTMENT</th>
<th>FULLTIME</th>
<th>PARTTIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia</td>
<td>12</td>
<td>61</td>
</tr>
<tr>
<td>BioMedical Sciences</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>Community Health and Humanities</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>10</td>
<td>49</td>
</tr>
<tr>
<td>Family Medicine</td>
<td>30</td>
<td>359</td>
</tr>
<tr>
<td>Genetics</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Laboratory Medicine</td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td>Medicine</td>
<td>59</td>
<td>182</td>
</tr>
<tr>
<td>Obstetrics/Gynecology</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>Oncology</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>24</td>
<td>71</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>20</td>
<td>74</td>
</tr>
<tr>
<td>Radiology</td>
<td>4</td>
<td>55</td>
</tr>
<tr>
<td>Surgery</td>
<td>13</td>
<td>144</td>
</tr>
<tr>
<td>Health Sciences Library</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>DISCIPLINE/DEPARTMENT</td>
<td>CONTRACTUAL</td>
<td>PERMANENT</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Anesthesia</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>BioMedical Sciences</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Community Health and Humanities</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Family Medicine</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>Genetics</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Laboratory Medicine</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Medicine</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynecology</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Oncology</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Radiology</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Surgery</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Health Science Centre Library</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Student Services</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>Research</td>
<td>98</td>
<td>2</td>
</tr>
<tr>
<td>Multi-Disciplinary Laboratories</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Educational Development</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Administrative Services</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>Dean's Office</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Health Science Information and Media Service Office</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>Clinical Learning and Simulation Centre</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>
2017 marked a special milestone for Memorial University’s Faculty of Medicine. Established in 1967 to improve health care for the people of Newfoundland and Labrador, it has lived up to its mandate by improving the health of our people and communities through educating outstanding physicians and health-care researchers for over 50 years.

Anniversary celebrations included a public speaker series, a signature gala celebration and a very successful community open house. In addition, alumni held their own celebrations across the country.

**SINCE 1967:**
- 2,585 medical students
- 3,800 postgraduate students
- 925 graduate students

**Flower arrangement at the signature gala celebration, donated by Shirley Strong.**

**50th Anniversary Celebration Committee**

**Dr. Shakti Chandra at her Body Works exhibit during the 2017 open house.**
Memorial University of Newfoundland is a community of more than 18,000 students and about 5,000 faculty and staff. Founded in 1925, the institution is a living memorial to the Newfoundlanders and Labradorians who lost their lives in the First and Second World Wars.

Memorial provides excellent undergraduate, postgraduate, graduate and professional programs in a vast array of diverse disciplines. Outstanding research and scholarship, extraordinary teaching and a focus on community service are the university's hallmarks. Many teaching and research activities reflect our mid-North Atlantic locations; these unique settings and our cultural heritage have led to the creation of highly-regarded academic programs and specialized facilities in areas such as music, linguistics, folklore and human genetics, as well as earth sciences, cold-ocean engineering, rural health care and archaeology.

Providing a comprehensive range of undergraduate, graduate and certificate programs, the university delivers courses at four diverse campuses, complemented by extensive online offerings.