

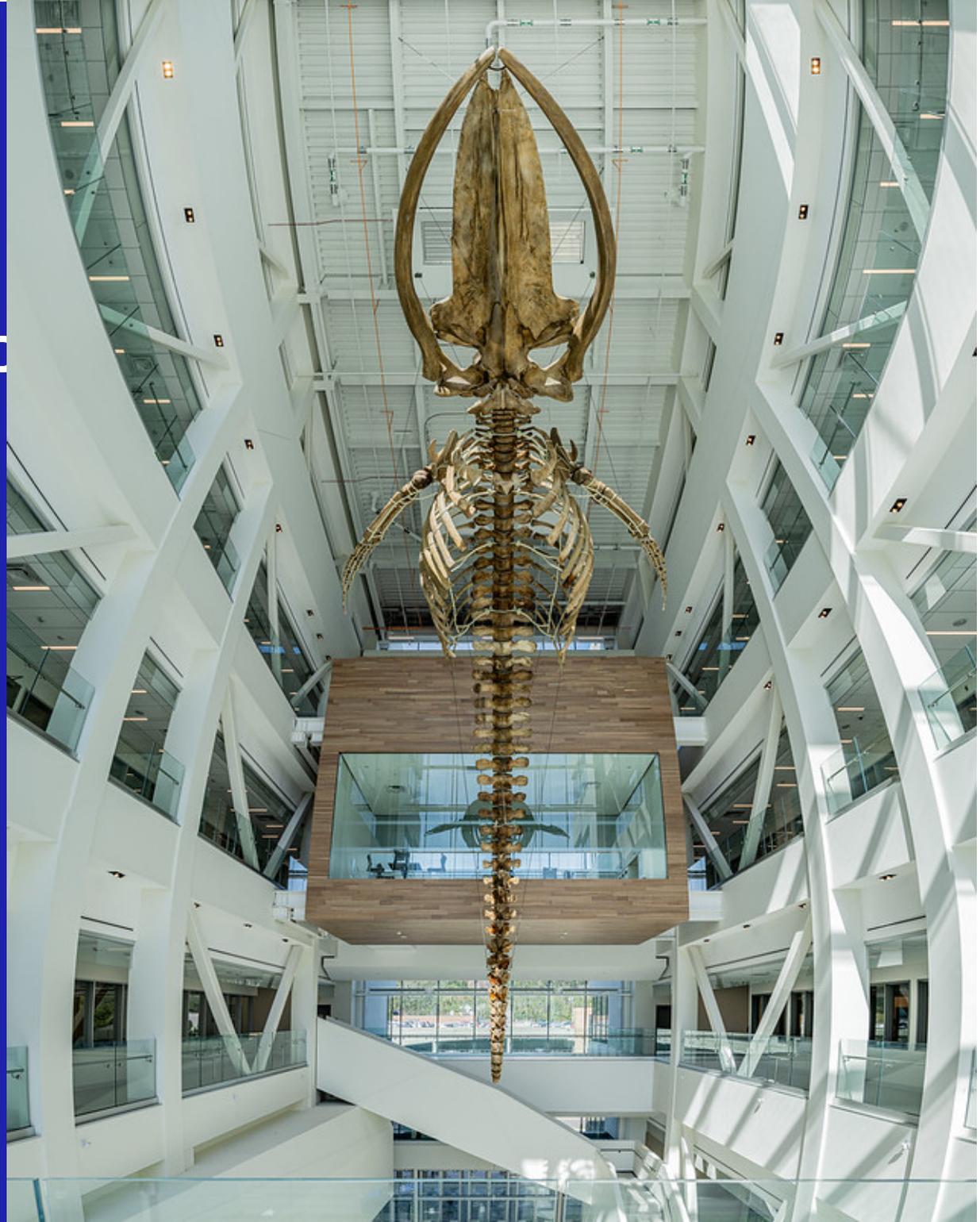
MEMORIAL
UNIVERSITY

**FACULTY OF
ENGINEERING & APPLIED
SCIENCE
AT MEMORIAL
UNIVERSITY**

<https://www.mun.ca/engineering>

**Octavia A. Dobre
Interim Dean & Professor**

<https://www.engr.mun.ca/~dobre/>





Newfoundland & Labrador

Memorial University

The largest university in Atlantic Canada

Fast Facts



300+
PROGRAM
OPTIONS



19,270
STUDENTS
from 118 countries



4,037
GRADUATE
STUDENTS



67% from
NEWFOUND-
LAND &
LABRADOR



14% from
REST OF
CANADA



19%
INTERNATIONAL
STUDENTS

Unique Programs



MBA IN SOCIAL
ENTERPRISE AND
ENTREPRENEURSHIP
unique in Canada



Co-op program in
OCEAN AND NAVAL
ARCHITECTURAL
ENGINEERING
unique in the world



Marine Institute's
ROV OPERATOR
PROGRAM
unique in Canada



Grenfell's
BACHELOR OF FINE ARTS
(THEATRE)
unique in Atlantic Canada

Memorial University

The largest university in Atlantic Canada

Research


\$176M+
TOTAL SPONSORED RESEARCH INCOME


40%
OCEAN-RELATED research

 one of the
TOP 20
RESEARCH UNIVERSITIES in Canada

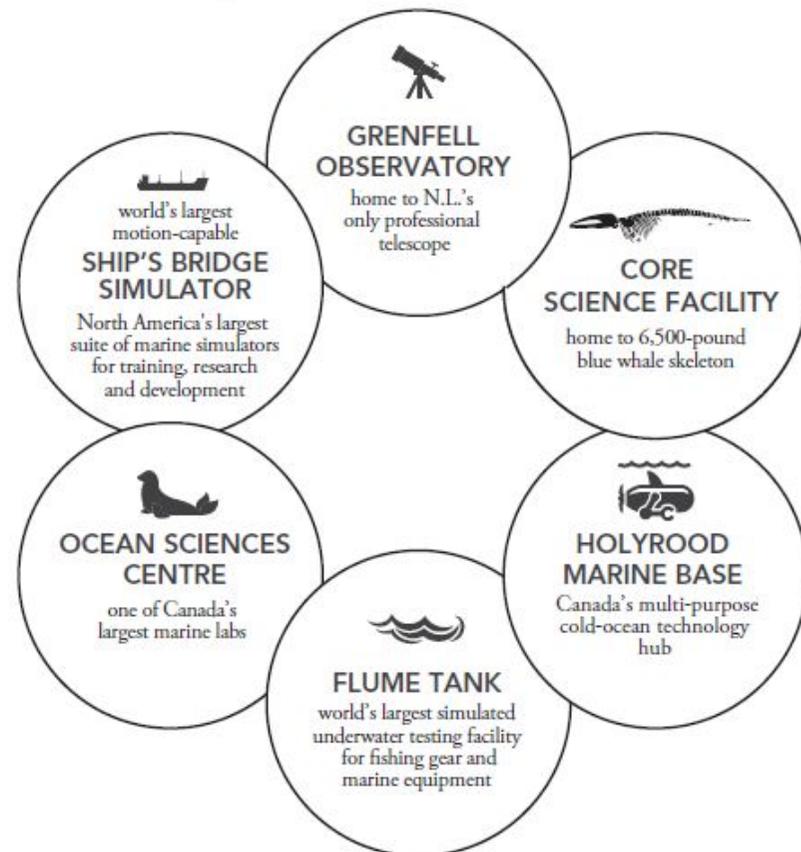
Did You Know?

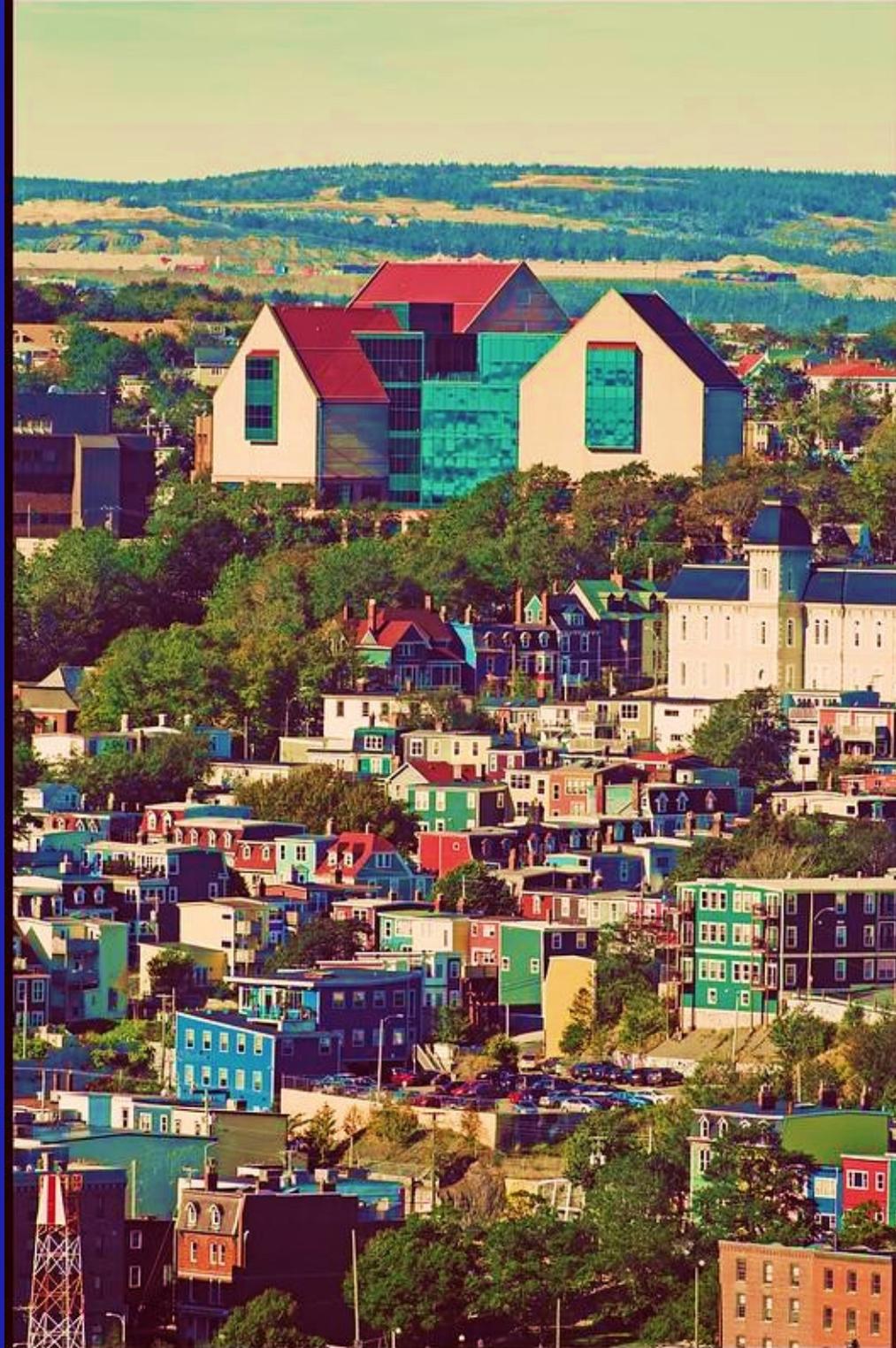

50+
RHODES SCHOLARS


NEWEST SCHOOL
Arctic and Subarctic Studies, Happy Valley-Goose Bay


more than
100,000
ALUMNI

Exceptional Facilities





Newfoundland & Labrador
has highest levels of life
satisfaction in Canada.
— Statistics Canada, 2022

Located in St. John's, the provincial
capital city of Newfoundland and
Labrador, Memorial's Engineering
offers students a great place to
learn, research, live and thrive!



“Small town” quality of life in the city of St. John’s

- Most easterly point of North America
- Newfoundland time zone
- World-class hiking trails
- Rich history and culture
- Britain’s first overseas colony (one of the oldest cities in North America)
- Titanic disappeared off Newfoundland
- Moderate, mild coastal weather
- One of the safest cities in the world
- Music and cultural festivals, hiking trails, icebergs, whales and puffins
- Traditional industries: fishing, shipping, and mining, while growing industries: IT, oil and gas, energy, and healthcare

'SHARED BLUEPRINT'

Memorial recognized for supporting United Nations Sustainable Development Goals

Engineering Education on the edge of North America

Vision

To be one of **the most distinguished** engineering faculties in Canada and beyond, and will fulfill its special obligation to the people of Newfoundland and Labrador.

Mission

To dedicate to the **highest quality** of teaching and learning, research, service and external engagement, in order to make a significant positive impact on society, locally, nationally and internationally.

Memorial Engineering on the edge of North America.

Departments

- Civil Engineering
- Electrical and Computer Engineering
- Mechanical and Mechatronics Engineering
- Ocean and Naval Architectural Engineering
- Process Engineering

High Quality Education

Memorial
Engineering
@ World
University
Rankings

Times Higher Education (THE) 2022

- Top 251-300 in Engineering and Technology

Shanghai Ranking 2022

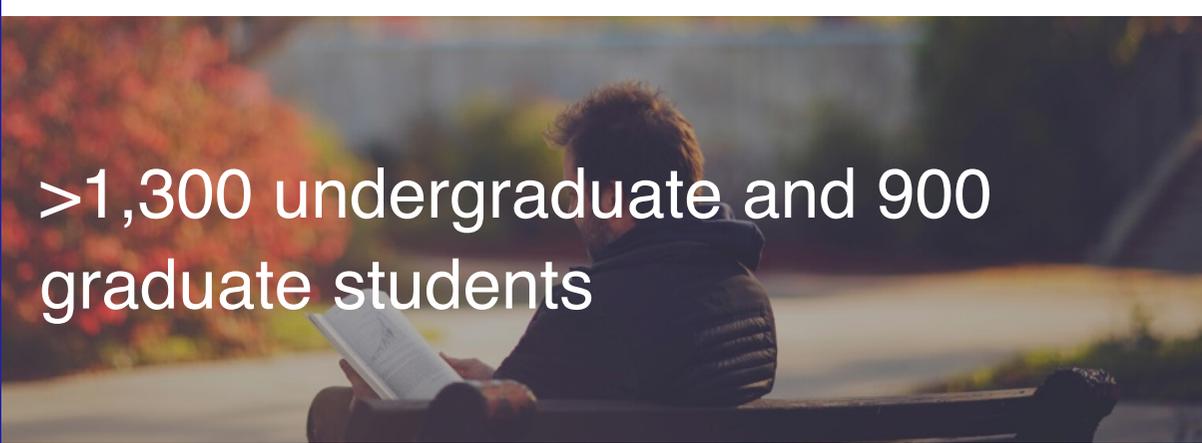
- Top 38 in Marine/Ocean Engineering
- Top 76-100 in Oceanography; Telecommunications Engineering; and Remote Sensing
- Top 301-400 in Chemical Engineering; and Electrical and Electronic Engineering
- Top 401-500 in Environmental Science and Engineering

QS World University Ranking 2022

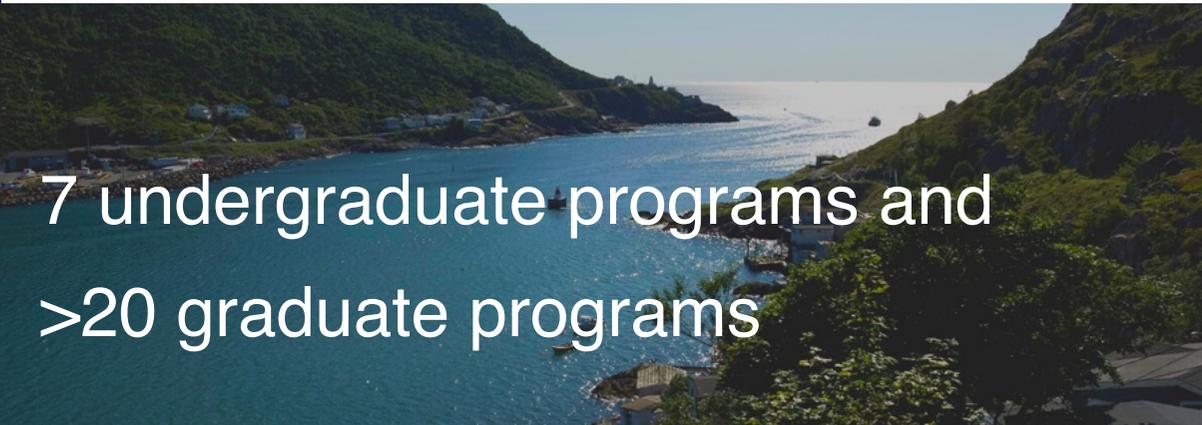
- Top 51-100 in Petroleum Engineering
- Top 351-400 for Electrical and Electronic Engineering
- Top 501-520 in Mechanical Engineering

Memorial Engineering

Fast Facts 1



>1,300 undergraduate and 900 graduate students



7 undergraduate programs and
>20 graduate programs



>10 million per year in annual
research funding

Memorial Engineering

Fast Facts 2



1,200 co-op undergraduate work term placements per year in Canada and worldwide



>25 research centres and research laboratories



19 fellows of Canadian Academy of Engineering, Royal Society of Canada, IEEE and MORE!

Undergraduate Programs

At Memorial
Engineering,
students have
choices!

Students will specialize in one of these available majors:

- Civil engineering
- Computer engineering
- Electrical engineering
- Mechanical engineering
- Mechatronics engineering
- Ocean and naval architectural engineering
- Process engineering

Graduate Programs

At Memorial Engineering, students have choices!

Students can choose a program that best suits their interests and career goals

Course-Based Master's Programs

- Computer Engineering
- Software Engineering
- Artificial Intelligence
- Environmental Systems Engineering and Management
- Energy Systems Engineering
- Oil and Gas Engineering
- Safety and Risk Engineering

Thesis-based (Master of Engineering & PhD)

- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Mechanical Engineering
- Ocean and Naval Architectural Engineering
- Process Engineering
- Oil and Gas Engineering

Graduate Diploma Program

- Communications Engineering

Work-Integrated Learning

Engineering
Co-operative
Education
Since 1960s

The world's largest employers, such as Apple and Tesla, have hired our students!

Facts about Memorial Engineering & Tesla:

- 7 co-op engineering students are currently working at Tesla;
- Memorial has made it on Tesla's global recruitment list of Universities;
- Memorial Engineering ranks as the 5th top university for recruitment in Tesla's Cell/Design team; and
- Memorial Engineering has a large group of Alumni working at Tesla who are all active ambassadors

INTERNATIONAL INFLUENCE

*Memorial researchers among
world's most cited academics*

12 Top 2% World Scientists



Fellows of the Canadian Academy of Engineering

For “distinguished service and contribution to society, to the country and to the profession”



Members/Fellows of Royal Society of Canada

For "contributions in the arts, the humanities, and the sciences, as well as in Canadian public life"



Fellows of Canadian Institute of Engineering

For "excellence in engineering" and "services to the profession and to society"



IEEE Fellow

For “select IEEE (Institute of Electrical and Electronics Engineers) members whose extraordinary accomplishments in any of the IEEE fields of interest are deemed fitting of this prestigious grade elevation.”



Dr. Octavia Dobre, the interim dean of the Faculty of Engineering and Applied Science, is an elected IEEE Fellow. Only 0.1% of the IEEE membership can be elected as fellows for this prestigious award.

ENERGY

NL: 80% of
Canadian
Offshore
Petroleum



Government of Newfoundland and Labrador
Department of Innovation, Business and Rural Development
t 800.563.2299 e IBRD@gov.nl.ca w gov.nl.ca/IBRD



OCEAN TECHNOLOGY

Cold Ocean,
Harsh Environment
Expertise



INFORMATION & Communications Technology



ENVIRONMENT & Sustainable Infrastructure



World-Class Infrastructure

Research Laboratories

- Asphalt Laboratory
- Northern Region Persistent Organic Pollution Control Laboratory (NRPOP)
- Soil-Pipe Interaction Research Laboratory (SPIRL)
- Atlantic Canada Public Safety Research and Innovation Laboratory
- Bio-inspired Robotics (BOTS)
- Computer-Aided Design Laboratory for Analog and Mixed-Signal VLSI Systems (CADLAMs)
- Memorial Advanced Research Laboratory for Optical and Wireless Communications (MARLOWC)
- Radar Remote Sensing Laboratory (RRSL)
- Vision, Software and Robotics Laboratory (VISOR)
- Intelligent Systems Laboratory (ISL)
- Material and Asset Integrity Laboratory (MAIL)
- Robotics, Mechanical and Control Laboratory (RoMeCoLa)
- Thermal Fluids and Energy Research Laboratory
- Autonomous Ocean Systems Centre (AOSCENT)
- Extreme Loads on Arctic Structures Laboratory (ELAS)
- Safety at Sea Laboratory
- Drilling Technology Laboratory
- Green Process Engineering Laboratory (GPEL)
- Hydrometallurgy Laboratory
- Waste Biomass to Bioproducts
- Hibernia Enhanced Oil Recovery (EOR) Laboratory
- Safety and Risk Engineering Laboratory

World-Class Infrastructure

Research Centers

Ocean Engineering Research Center (OERC)

- Autonomous Oceans Systems Laboratory
- Advanced Marine Hydrodynamics Laboratory
- Marine Corrosion Laboratory
- Marine Environmental Research Laboratory for Intelligent Vehicles (MERLIN)
- Process Safety Lab
- Small Vessel Simulator
- Structures Lab
- Towing Tank
- Other Laboratories

Centre for Risk, Integrity, and Safety Engineering (C-RISE)

Network on Persistent, Emerging and Organic Pollution in the Environment (PEOPLE)

Research Groups

Memorial
Strategic
Research
Themes

**Environment, Energy and
Natural Resources**

**Community, Regional and
Enterprise Development**

**Information and
Communications Technology**

**Well-being, Health and
Biomedical Discovery**

**Ocean, Fisheries and
Aquaculture**

Civil Engineering

Research Centers and Laboratories

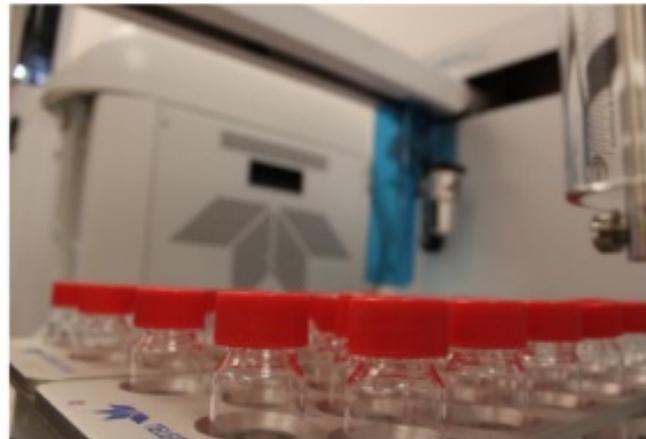


Asphalt laboratory



Soil-pipe Interaction
Research Laboratory

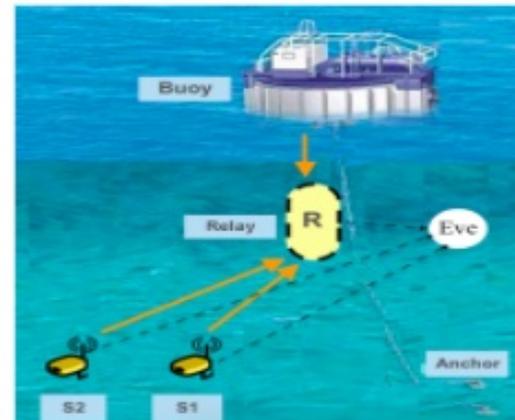
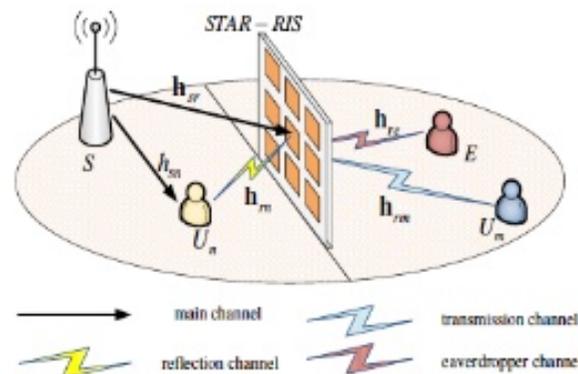
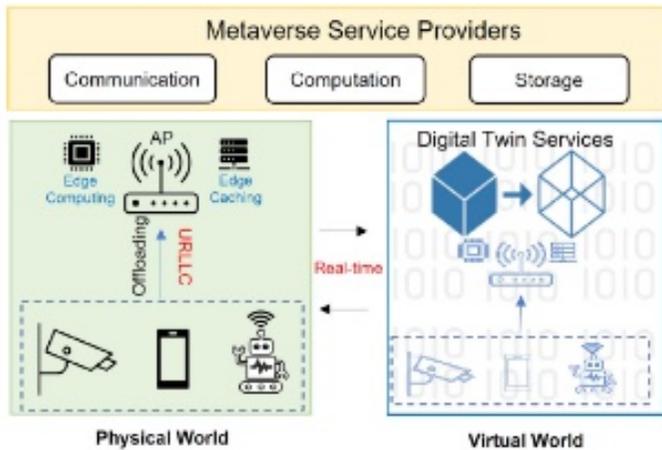
Northern Region
Persistent Organic
Pollution Control
Laboratory



Electrical and Computer Engineering

Research Centers and Laboratories

Advanced Research in Wireless, Optical and Underwater Communications



Electrical and Computer Engineering

Research Centers and Laboratories



Memorial Advanced Research Laboratory
for Optical and Wireless Communications



Radar Remote Sensing Laboratory



Atlantic Canada Public Safety
Research and Innovation
Laboratory



Bio-inspired Robotics (BOTS)



Vision, Software and Robotics
(VISOR) Laboratory
(Image credit: Boston Dynamics)



Computer-Aided Design
Laboratory for Analog and
Mixed-Signal VLSI Systems
(CADLAMS)

Ocean and Naval Architectural Engineering

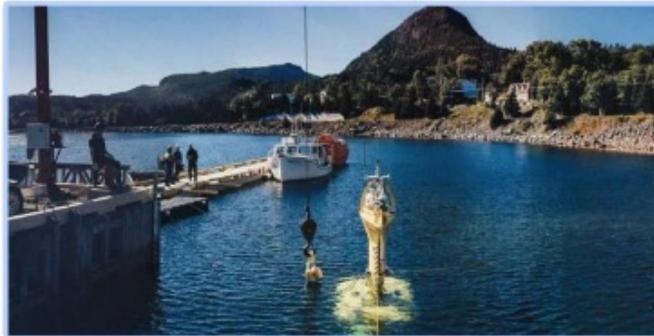
Research Centers and Laboratories



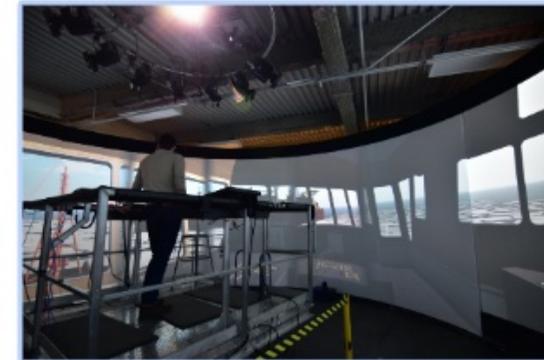
Autonomous Ocean Systems
Centre (AOSCENT)



Extreme Loads on Arctic Structures
Laboratory (ELAS)



Autonomous Ocean Systems
Laboratory



Safety@Sea Laboratory

Process Engineering

Research Centers and Laboratories



Waste Biomass to
Bio products



Hydrometallurgy Laboratory



Hibernia Enhanced
Oil Recovery (EOR)
Laboratory

Image credit: Smallwood Photos



Drilling Technology Laboratory



Green Process
Engineering
Laboratory

World-Class Infrastructure

Newest
Facility
Spotlight

Memorial's New Micro-Precision Mechatronics Lab (μ PML)

Demand for semiconductors explodes during global pandemic and Memorial engineering professor answers the call to help thanks to equipment provided by NSERC, CFI and the Government of Newfoundland and Labrador

DR. MOHAMMAD AL JANAIDEH



**The Autonomous Ocean Systems Laboratory
Faculty of Engineering and Applied Science**

Collaboration Successes

Government and Industry Partners



Dynamic Research

Excellence and Partnerships:
2022 Major Highlights

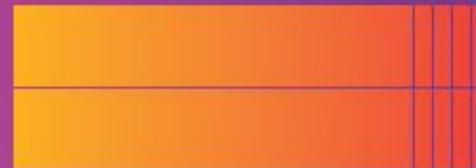
FUNDING BREAKDOWN

\$7,505,097.18	Federal
\$1,272,261.83	Industry
\$731,020.37	Provincial
\$614,262.51	Mitacs
\$521,555.56	Other
\$10,644,197.45	Total funding



OUR RESEARCH

150 new grant applications



242 active grants



Dynamic Research

Excellence and Partnerships:
2022 Major Highlights

OUR PUBLICATIONS

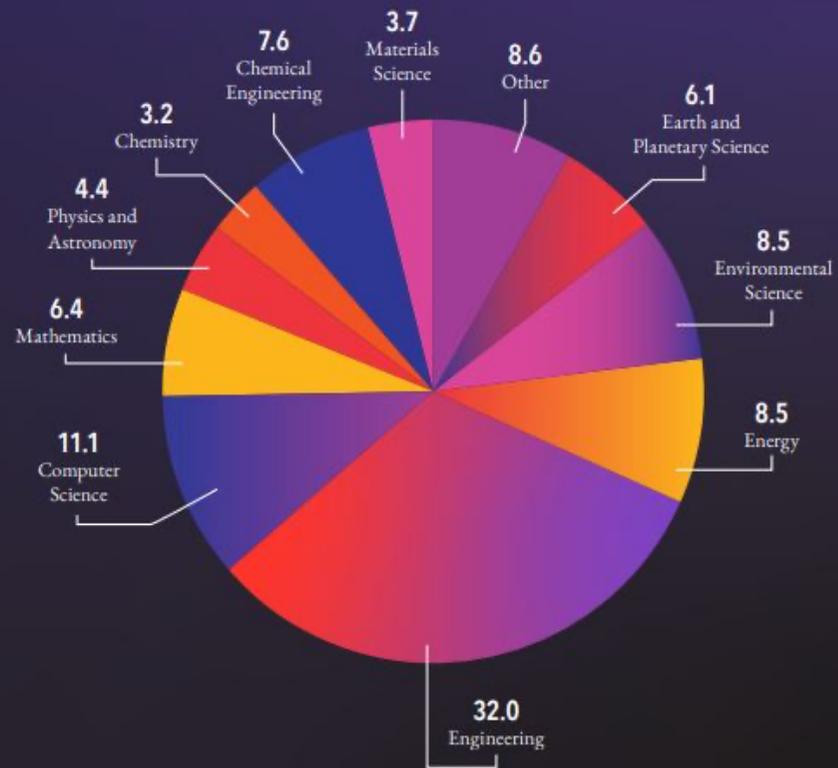


48.1% publications in top 10% journals percentile



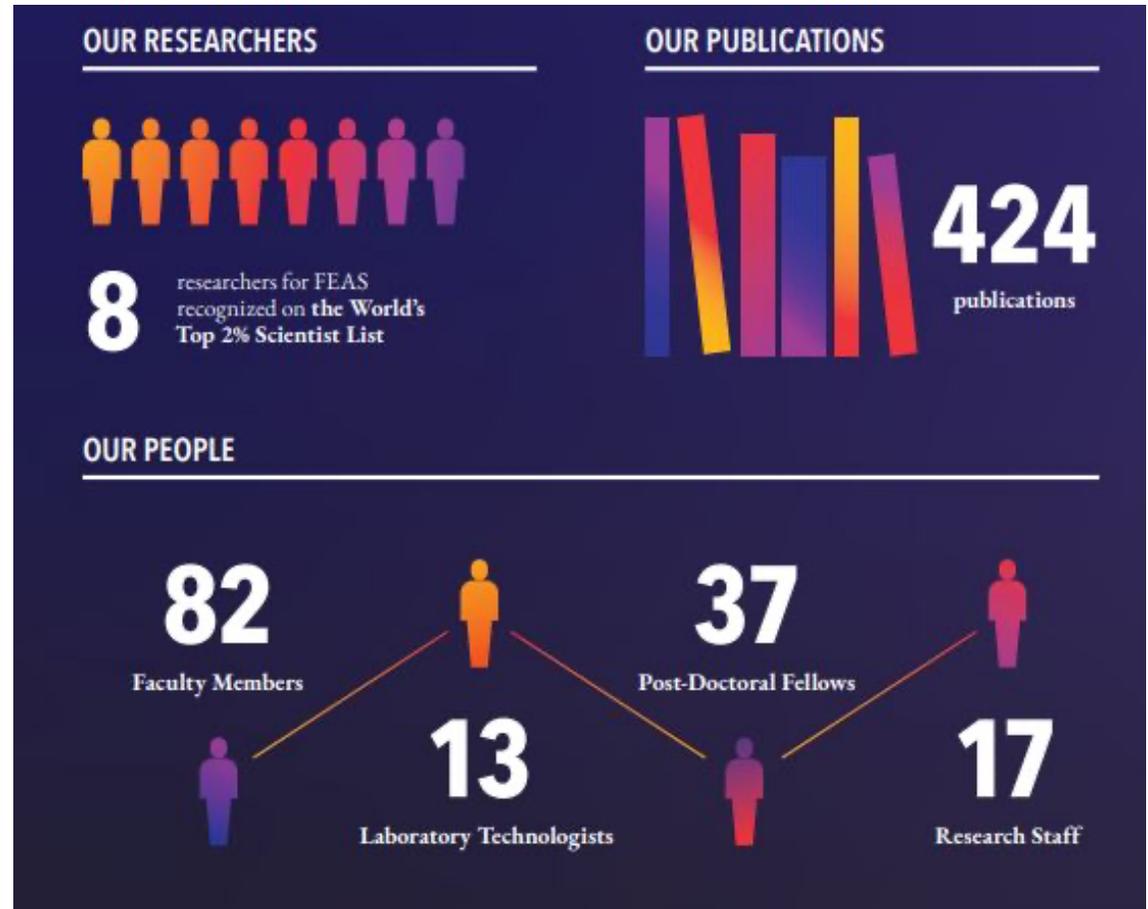
62% publications open access

PUBLICATIONS BY SUBJECT AREA



Dynamic Research

Excellence and Partnerships:
2022 Major Highlights



VISIONARY SHIPPING RESEARCH



ICC Canada, Memorial University to benefit from more than \$91-million federal investment

PHOTO: KEITH LEVESQUE, ARCTICNET

Dynamic Research

Excellence and Partnerships:
2023

<https://gazette.mun.ca/research/ visionary-shipping-research/>

<https://www.mun.ca/engineering/graduate/>



Student Achievements

2022-2023



The MUN **Eastern Edge Robotics** placed third overall and first for their Engineering Presentation at the Marine Advanced Technology Education (MATE) in California. The competition challenges students to solve real-world problems using remotely operated vehicles (ROVs).



The MUN **Concrete Toboggan Team** placed high in several categories at the Great Northern Concrete Toboggan Race (GNCTR) 2023, the largest and longest running engineering student competition in Canada, in Kelowna, B.C.

Student Achievements

2022-2023



Shane Williams' startup Notch Embedded, which makes software tools for engineers that allow them to quickly support new chips in their electronics designs, is the champion of the 2023 Mel Woodward Cup, a pitch competition for student entrepreneurs at Memorial University.

Scholarships

Study in Canada Short-term Scholarships

Global Affairs Canada's International Scholarships Program

Type	Value	Duration	Activities
College/ undergraduate (4 months)	\$10,200	Four month or one academic term	Study or research at the college or undergraduate level. A valid exchange agreement that waives tuition fee is required.
Graduate (4 months)	\$10,200	Four months or one academic term	Study or research at the graduate level (master's and PhD). A student exchange agreement is not required.
Graduate (5–6 months)	\$12,700	Five to six months	Study or research at the graduate level (Master's and PhD). A student exchange agreement is not required.

Annual Call: **March**

Competition closed for 2023-23 academic year

Internationalization office: <https://www.mun.ca/international/contact-us/>

Scholarships/Fellowships

Study Engineering @ Memorial – Thesis-based Graduate Programs

Master's: \$18,000 per annum (2 years)

PhD: \$22,000 per annum (4 years)

<https://www.mun.ca/become/graduate/tuition-fees-and-funding/>

<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710004501>

Vanier Canada Graduate Scholarship (Engineering, Health Sciences, Social Sciences & Humanities)

<https://vanier.gc.ca/en/home-accueil.html>

MITACS Elevate Postdoctoral Fellowships (Engineering)

<https://www.mitacs.ca/en/programs/elevate/who-eligible/partner-organizations>

Banting Postdoctoral Fellowships (Engineering, Health Sciences, Social Sciences & Humanities)

<https://banting.fellowships-bourses.gc.ca/en/home-accueil.html>

Pierre Elliott Trudeau Foundation Doctoral Scholarship (PhD - Social Sciences & Humanities)

<https://www.sauvescholars.org/trudeau-foundation-doctoral-scholarship/>

Joint Programs

Master's through Courses Programs

- 1 year at the home institution
- 1 year at Memorial
- Dual degree

Thank You!

