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A Message from Dr. Alice Aiken, 
Vice President Research and Innovation

It was late in the summer of 2017 when I was appointed as the Vice President Research and Innovation at Dalhousie. Three and a half years later, I am still incredibly honoured to have been selected to serve this amazing institution that has regional, national and global impact.

Dalhousie is one of Canada’s top research-intensive universities, pioneering research in a wide array of disciplines and generating over $181 million in externally-funded research in 2019/2020. According to the latest data from the Canadian Association of University Business Officers (CAUBO), we are home to 81% of all the research revenue awarded to universities in Nova Scotia, and continue to have a strong voice in national discussions with federal funding agencies on research funding.

Our world-class researchers are applying their brain power to the world’s most pressing problems: from ending poverty to fighting inequalities, tackling climate change, and ensuring that no one is left behind. In this report, we share a snapshot of success stories from 2020 about our researchers and our many partners. This includes:

• Dalhousie University ranking among the world’s top 100 universities according to Times Higher Education (THE) University Impact Rankings
• Dalhousie researchers joining the global fight against COVID-19
• The Ocean Tracking Network receiving an additional $13.4 million in funding from the Canada Foundation for Innovation
• Indigenous-academic collaboration that will transform health research in Mi’kma’ki, Labrador and beyond
As a public university, our success is measured by our engagement with our community and the diversity of our faculty, staff and students. The university has introduced a wide-ranging Diversity and Inclusiveness Strategy, which includes initiatives focused on employment equity. The Research and Innovation enterprise at Dalhousie is propelling research and innovation excellence across all disciplines, fully aligned with the university’s equity goals.

Although there is a lot to celebrate, there’s no question that it has been a very difficult year. In mid-March, our staff, our research community and most of Dalhousie transitioned to working from home. While some of our researchers undertook work on the COVID-19 virus and potential vaccines, many of our researchers had to close their research spaces in the name of safety. In July, we were able to begin a thoughtful, structured and safe re-opening of research space at the university in a limited fashion. This continued to expand throughout the summer and autumn, as dictated by the requirements of Public Health in Nova Scotia. I am so proud of all those who have continued to work during these unusual circumstances and those who turned their attention to research about COVID-19. And I am deeply appreciative of the patience shown by our entire research and innovation community, as we navigated through these uncharted waters.

Yours sincerely,

Dr. Alice B. Aiken, PhD
Professor and Vice-President Research and Innovation
An overview of Dalhousie’s Signature Research Clusters

Maximizing the effectiveness of our research and innovation efforts means leveraging our greatest strengths to partner globally and focus on solving some of the most complex issues facing humankind. This approach comes alive in Impact Together: Dalhousie’s Research and Innovation Strategic Direction, 2018-2023, which is guided by five signature research clusters and informed by two cross-cutting themes.

The full Strategic Direction for research and innovation can be found at www.dal.ca/research.
What makes *Impact Together* unique is the fact that it is grounded in the **United Nations’ Sustainable Development Goals (SDGs)**. The SDGs are the most comprehensive shared goals that the international community has ever set for itself, and they are intended to serve as an overarching roadmap for future international cooperation. By grounding our Strategic Direction in the same goals to which leaders from around the world have committed, we are able to leverage our greatest research strengths to partner with others around the globe and focus our efforts on solving some of the most complex global issues of this century.
Dal by the Numbers

This has been a year full of accomplishments for Dalhousie University.

<table>
<thead>
<tr>
<th>ANNUAL RESEARCH FUNDING</th>
<th>60 CANADA RESEARCH CHAIRS</th>
<th>250+ START-UPS LAUNCHED SINCE 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>$181M IN 2019/20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 NSERC HERZBERG GOLD MEDALS RECIPIENTS SINCE 2013</td>
<td>44 FELLOWS ROYAL SOCIETY OF CANADA</td>
<td>18 MEMBERS RSC COLLEGE OF NEW SCHOLARS, ARTISTS AND SCIENTISTS</td>
</tr>
<tr>
<td>$220+ M OCEAN FRONTIER INSTITUTE</td>
<td>23 FELLOWS CANADIAN ACADEMY OF HEALTH SCIENCES</td>
<td>4 KILLAM PRIZE RECIPIENTS SINCE 2005</td>
</tr>
</tbody>
</table>
Dal ranks among the world’s top 100 universities in social impact

In April 2020, the Times Higher Education (THE) University Impact Rankings were released, and Dalhousie placed #85 among 767 participating institutions worldwide for our impact in addressing the United Nations’ Sustainable Development Goals through research, outreach, and stewardship. We were one of 19 institutions in Canada that took part, and the only university from Atlantic Canada; our top performance areas included SDG 14 (Life Below Water); SDG 3 (Good Health and Wellbeing); SDG 10 (Reduced Inequalities); and SDG 17 (Partnership for the Goals).

Canada’s best universities by reputation: Rankings 2021

In the most recent Maclean’s University Rankings, Dalhousie was ranked 7th overall in the Medical-Doctoral category, and 12th overall in Canada. Both of these are increases from previous years. Maclean’s surveyed university faculty and senior administrators, as well as a variety of business people across the country, asking for their views on quality and innovation at Canadian universities.
Regional Leadership, Global Impact: a Year in Dalhousie Research Excellence

Through innovative research, Dalhousie’s researchers continue to add to the intellectual, social and economic capital of Nova Scotia and our region more broadly. Faculty members and research trainees are continuously seeking new and exciting opportunities for discovery, applied and community-driven scholarly or artistic work. They are collaborating together with scholars from other institutions and in partnerships with governments, industry, non-governmental organizations and communities, to develop new ideas and innovative advances and create impact.
RESPONDING TO THE COVID-19 GLOBAL PANDEMIC

COVID-19 has touched almost every country around the world since it emerged in the winter of 2020. During this difficult time, our highest priority has been the safety and well-being of Dalhousie’s researchers, students, research staff, trainees and participants. In March 2020, the university took the necessary step of suspending all non-essential research activities on our campuses. Critical COVID-19 research continued as a matter of urgency, with full support. Beginning in late spring, the Research and Innovation team began work with the offices of Environmental Health & Safety and Facilities Management, as well as the Dalhousie Research Advisory Committee (DRAC) and other academic leaders to develop a robust and meaningful road map that led us towards a safe, phased re-opening of research space at the university, starting in July 2020.

OUR RESEARCHERS HELPING CANADA MEET THE CHALLENGES OF COVID-19

There has never been a greater need to conduct medical and health-related research to collect real-time evidence to inform practice, policy and decision-making during the COVID-19 pandemic. We are incredibly proud of the researchers from our Faculty of Medicine who are serving our country at this time, through the provision of their advice and expertise to the Government of Canada.

**Dal’s Dr. Joanne Langley to co-lead Canada’s COVID-19 vaccine task force**

Dr. Joanne Langley, professor in the Departments of Pediatrics and Community Health and Epidemiology, has been named co-lead of the Government of Canada’s COVID-19 Vaccine Task Force, helping advise the government on supporting vaccine research and ensuring Canadian leadership in vaccine development and access to safe and effective products.

**3 Nova Scotians appointed to national COVID-19 immunity task force**

A group of three health researchers from Nova Scotia (including Dal’s own Dr. Susan Kirkland and Dr. Scott Halperin) are taking part in Canada’s COVID-19 Immunity Task Force Leadership Group. The task force will be conducting serological research, trying to understand exposure, how to safely open up the economy, and how to identify the most vulnerable populations and protect them.
SECURING RESEARCH FUNDING FOR COVID-19 PROJECTS

Since March 2020, more than 80 Dalhousie researchers have received over $15 million in funding for research related to COVID-19. Investments in research have been made by agencies including the Canadian Institutes for Health Research; the Nova Scotia Health Research Coalition; the Canada Foundation for Innovation; the Natural Sciences and Engineering Research Council; and the Social Sciences and Humanities Research Council.

Dalhousie was also a participating member institution in the Nova Scotia COVID-19 Health Research Coalition, which responded to the global pandemic with a collective investment of just over $1.5 million in COVID-19 focused research. After a rapid-response call for proposals in late April 2020, the Coalition announced the funding of 40 projects in early May - 34 of which are being carried out by Principal Investigators from Dalhousie.

Dal researchers join global fight against COVID-19 with nearly $2M in federal funding

In March 2020, three Dalhousie projects received a total of $1.9 million through CIHR’s Novel Coronavirus Rapid Research Funding Opportunity – an initiative supporting development, testing and implementation of measures to address the global outbreak.

40 projects receive funding from Nova Scotia COVID-19 Health Research Coalition

The Nova Scotia research community came together to respond to the current global pandemic with a collective investment of over $1.5 million in COVID-19-focused research.

New federal funding elevates Dal’s capacity to tackle COVID-19 pandemic

Researchers at Dal, the IWK Health Centre and the QE II Health Sciences Centre received $1.2 million in funding from the Canada Foundation for Innovation in October 2020, to advance the development of new COVID-19 vaccines via upgrades to the Canadian Center for Vaccinology’s Level 3 containment facility at the IWK Health Centre.

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Total funding from internal university sources (faculties, etc.) $113,473

Total funding from external agencies $14,923,034

Total of all COVID-19-related funding: $15,036,507
Continued growth in externally funded research

Dalhousie is proud to be a member of the U15 group of Canada's leading research-intensive universities. The support provided by our funders helps us lead the way in key areas of research. Our funders' investment in research and innovation is helping us attract and retain the very best researchers, give them the tools they need to perform excellent cutting-edge research, train the next generation of researchers, and enable innovative new discoveries that improve our environment, economy and communities.

The Office of Research Services (ORS) helped to facilitate the submission of more than 1,000 applications to funding agencies in 2020, including applications to several rapid response federal funding programs. ORS staff managed a large number of extension requests and supplements due to COVID-19. Hundreds of Return to Research (R2R) applications, and applications to the Canada Research Continuity Emergency Fund (CRCEF), were processed by ORS staff through the ROMEO Researcher Portal.
In 2019-2020, Dalhousie generated over $181 million in funding, an increase of $12.9M from the previous year. Our external research funding comes from a variety of different sources, including the federal and provincial governments; foreign governments; industry; institutes, centres and networks; and not-for-profits.
## MAJOR FUNDING AWARDS RECEIVED, 2020

<table>
<thead>
<tr>
<th>Funding Agency</th>
<th>Project/ Initiative</th>
<th>Principal Investigator</th>
<th>Amount Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI – Major Science Initiatives (MSI)</td>
<td>Ocean Tracking Network</td>
<td>Dr. Sara Iverson, Faculty of Science</td>
<td>$13.4M</td>
</tr>
<tr>
<td>Canadian Institutes of Health Research (CIHR) Network Grant</td>
<td>Network Environments for Indigenous Health Research (NEIHR)</td>
<td>Dr. Debbie Martin, Faculty of Health</td>
<td>$3.5M</td>
</tr>
<tr>
<td>Canadian Institutes of Health Research &amp; Public Health Agency of Canada</td>
<td>COVID-19 Vaccine Readiness</td>
<td>Dr. Scott Halperin, Faculty of Medicine</td>
<td>$3.5M</td>
</tr>
<tr>
<td>Canada Foundation for Innovation (CFI)</td>
<td>John R. Evans Leaders Fund (JELF)</td>
<td>16 Dalhousie researchers funded – Faculties of Agriculture, Engineering, Health, Medicine &amp; Science</td>
<td>$2.7M</td>
</tr>
<tr>
<td>Genome Canada, Genomics Applications Partnership Program (GAPP)</td>
<td>Implementation of Clinical Exomes in a Pre- and Peri-Natal Setting</td>
<td>Drs. Karen Bedard and Jo-Ann Brock, Faculty of Medicine</td>
<td>$1.6M</td>
</tr>
<tr>
<td>New Frontiers in Research Fund (NFRF) Exploration stream (second competition)</td>
<td>Six Dalhousie researchers funded - Faculties of Architecture &amp; Planning, Health, Management, Medicine &amp; Dentistry</td>
<td></td>
<td>$1.5M</td>
</tr>
<tr>
<td>US Centers for Disease Control and Prevention &amp; National Institutes of Health (NIH)</td>
<td>Research on B. pertussis infection</td>
<td>Dr. Scott Halperin, Faculty of Medicine</td>
<td>US$1.2M (CDC) + US$146,000 (NIH)</td>
</tr>
<tr>
<td>Canada Foundation for Innovation – Exceptional Opportunities Fund (CFI-EOF)</td>
<td>Development of preclinical and clinical models of COVID-19 disease for vaccine, antiviral and immunotherapeutic testing</td>
<td>Dr. David Kelvin, Faculty of Medicine</td>
<td>$1.2M</td>
</tr>
</tbody>
</table>
STORIES

Dal-based Ocean Tracking Network receives $13.4 million in funding from the Canada Foundation for Innovation

The Ocean Tracking Network has been awarded a grant of an additional $13.4 million from the Canada Foundation for Innovation’s Major Science Initiatives Fund, providing resources to support the technology needed to monitor how the global ocean is changing – including tracking the movements and survival of more than 245 important species.

Indigenous-academic collaboration aims to transform health research in Mi’kma’ki, Labrador and beyond

The Network Environments for Indigenous Health Research (NEIHR) Program of the Canadian Institutes of Health Research awarded $3.5 million in funding over the next five years (with the possibility of renewal for another ten years), to the Wabanaki-Labrador Indigenous Health Research Network. Hosted at Dalhousie University in partnership with Mi’kmaq, Wolastoqiyik, Inuit and Innu communities and organizations and with academic institutions stretching across all four Atlantic provinces, it is one of nine new Indigenous health research networks across Canada to be funded by NEIHR.

Dr. Ingrid Waldron wins Errol Sharpe Book Prize

Dr. Ingrid Waldron has been awarded the 2020 Society of Socialist Studies Errol Sharpe Book Prize for her book (turned Netflix documentary in March 2020), There’s Something in the Water. The Errol Sharpe Book Prize is an annual prize for a significant contribution to socialist research in Canada.
Internal Grant Programs

VICE-PRESIDENT RESEARCH & INNOVATION
INTERNATIONAL SEED (VPRIIS) FUND

The VPRIIS Fund, first launched in autumn 2018, is intended to support the development of international research initiatives between Dalhousie researchers and their global partners. The awards provide seed funding for international collaborations of 1-2 years’ duration, in the amount of $5,000-$10,000. The second round of awards was made in January 2020 to the following researchers:

- Dr. Quan (Sophia) He, Agriculture, with Tsinghua University, China: “Exploration of Hydrothermal Liquefaction Mechanism via Computational Calculation”
- Dr. Ted Cavanagh, Architecture & Planning, with University of Manchester, United Kingdom: “Knowledge Production through Academic Design-Build: Trans-Disciplinary Investigation of the Social and the Material”
- Dr. Yuri Leving, Arts & Social Sciences, with St. Petersburg State University, Russia and Jacobs University, Germany: “Cold War Cultures: Constructing Identities on Both Sides of the Atlantic”
- Dr. Stan Matwin, Computer Science, with IMT Atlantique, France: “Acoustic Detection of Fish with Deep Learning”
- Dr. Richard Price, Dentistry, with Malmö University, Sweden, “Determining Longevity of Dental Restorations and to Identify Causes of Failure”
- Dr. Floris Goerlandt, Engineering, with Technical University Delft, Netherlands; University of Ghent, Belgium; Aalto University, Finland; National Technical University of Athens, Greece; World Maritime University, Sweden: “Arctic Shipping Safety and Environmental Protection: Towards an EU-Canada Student and Staff Exchange Project”
- Dr. Alex Kalamkarov, Engineering, with Karlsruhe Institute of Technology; German Aerospace Center; and Bonn-Rhein-Sieg University of Applied Sciences, Germany: “Interacting Smart Composite Materials and Structures”
• Dr. Catherine Mah, Health, with Monash University, University of Queensland and Deakin University, **Australia**: “Healthy Stores Practice Exchange”

• Dr. Heidi Lauckner, Health, with University of Cape Town, **South Africa** and La Trobe University, **Australia**: “Advancing Community Development: North-South Dialogues”

• Dr. Tony R. Walker, Management, with University of Manchester, **United Kingdom**, “Pollution Biomonitoring Using Honeybees”

• Dr. Kimberley Hall, Science, University of Cambridge, **United Kingdom**: “Advance systems for solid state quantum emitters”

• Dr. Djordje Grujic, Science, with ETH Zurich and University of Lausanne, **Switzerland**: “Direct Dating of Ancient Earthquakes”

**BELONG RESEARCH FELLOWSHIP AWARDS**

The goal of the Belong Research Fellowship Awards, first launched in autumn 2018, is to provide pre-tenure faculty members from equity-seeking groups with support to further research in their respective fields. The awards fund small research projects of 1-2 years’ duration, in the amount of $5,000.

The second round of awards was made in January 2020 to the following researchers:

• Dr. Lisa Binkley, Arts & Social Sciences: “Makazinanag: Many Tender Feet”

• Dr. Tim Bryan, Arts & Social Sciences: “Hate Crimes in Nova Scotia”

• Dr. Sorayya Askari, Health: “Factors Describing Cognitive Fatigue in Multiple Sclerosis”
Research Chairs

NEW AND RENEWED CRCS

STORY: An investment in research excellence: Get to know Dal’s five new Canada Research Chairs

Learn more about the Dal scholars named in December 2020 as part of the newest cohort of the Canada Research Chairs program, which provides opportunities for researchers to excel in their fields and build teams of experts.

Canada Research Chairs (CRCs) announced in 2020

<table>
<thead>
<tr>
<th>Type</th>
<th>Category</th>
<th>Chairholder Name</th>
<th>Faculty</th>
<th>Value &amp; Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Tier 1 CRC in Pyrrole Chemistry for Chemical Biology and Energy</td>
<td>Dr. Alison Thompson</td>
<td>Science</td>
<td>$1.4M over 7 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 1 CRC in Interpretability for Machine Learning</td>
<td>Dr. Stan Matwin</td>
<td>Computer Science</td>
<td>$1.4M over 7 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Forced Migration Governance and Refugee Protection</td>
<td>Dr. Kiran Banerjee</td>
<td>Arts &amp; Social Sciences</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Advanced Materials for Energy Applications</td>
<td>Dr. Ghada Koleilat</td>
<td>Engineering</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Coastal Zone Processes</td>
<td>Dr. Vittorio Maselli</td>
<td>Science</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Physical Oceanography</td>
<td>Dr. Ruth Musgrave</td>
<td>Science</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Ocean Engineering</td>
<td>Dr. Ali Nasiri</td>
<td>Engineering</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Persuasive Technology</td>
<td>Dr. Rita Orji</td>
<td>Computer Science</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>New</td>
<td>Tier 2 CRC in Reconciliation, Gender &amp; Identity</td>
<td>Dr. Margaret Robinson</td>
<td>Arts &amp; Social Sciences</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 2 CRC in Integrated Ocean and Coastal Governance</td>
<td>Dr. Megan Bailey</td>
<td>Science</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 2 CRC in Ocean Technology Systems</td>
<td>Dr. David Barclay</td>
<td>Science</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 2 CRC in Marine Microbial Proteomics</td>
<td>Dr. Erin Bertrand</td>
<td>Science</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 2 CRC in Sustainable Rural Futures for Atlantic Canada</td>
<td>Dr. Karen Foster</td>
<td>Arts &amp; Social Sciences</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 2 CRC in Cellular, Biomaterial and Matrix Interaction</td>
<td>Dr. John Frampton</td>
<td>Medicine</td>
<td>$500K over 5 years</td>
</tr>
<tr>
<td>Renewal</td>
<td>Tier 2 CRC in Sustainable Infrastructure</td>
<td>Dr. Pedram Sadeghian</td>
<td>Engineering</td>
<td>$500K over 5 years</td>
</tr>
</tbody>
</table>
**University Research Professors:**
The title of University Research Professor is granted to a limited number of individual Dalhousie faculty members who have achieved distinction in scholarship.
This year’s recipient, **Dr. Lois Jackson** (Faculty of Health), has devoted her career to the improvement of health among marginalized populations, including women involved in the sex industry, people who use substances, and youth (particularly young women) living in rural areas.

**STORY:** Achieving distinction in scholarship: Lois Jackson named Dal’s newest University Research Professor

**The Arthur B. McDonald Chair of Research Excellence:**
The Arthur B. McDonald Chairs were established in 2016 as a way to honour Dr. McDonald, a Dalhousie alumnus and Nobel Laureate, and to recognize and retain professors of high calibre at the university.
The 2020 recipient, **Dr. Mark Stradiotto** (Faculty of Science), is developing new materials to bind metals together, creating new catalysts for some of the most difficult and sought-after chemical transformations in the field.

**STORY:** A chemist who rocks – introducing the newest Arthur B. MacDonald Chair of Research Excellence

^^ Dr. Lois Jackson  

^^ Dr. Mark Stradiotto
Prizes and Honours for Dal Researchers in 2020

ORDER OF CANADA:

- Dr. Jeff Dahn (Faculty of Science) appointed as an Officer
- Dr. Kenneth Wilson (Faculty of Medicine) appointed as a Member

STORY: Regally recognized: Dal faculty named to the Order of Canada
Drs. Dahn and Wilson are two of 114 appointments to the Order of Canada announced by Her Excellency the Right Honourable Julie Payette, Governor General of Canada.

CANADIAN ACADEMY OF HEALTH SCIENCES (CAHS):

- Dr. Lois Jackson (Faculty of Health) selected as a CAHS Fellow

STORY: Health and Human Performance Prof Lois Jackson honoured by Canadian Academy of Health Sciences
One of Dalhousie’s own became a Canadian Academy of Health Sciences (CAHS) Fellow, one of the highest honours for members of the country’s health sciences community.

ROYAL SOCIETY OF CANADA:

- 2020 Rutherford Memorial Medal in Chemistry awarded to Dr. Erin Johnson, Faculty of Science
Established in 1980 in memory of Lord Rutherford of Nelson, a scientist and leader in nuclear research, this medal is awarded for outstanding research during the formative stage of a career in any branch of chemistry and in recognition of Lord Rutherford's own research carried out in Canada at a relatively young age.

STORY: A rapidly rising star: Erin Johnson honoured with the Rutherford Memorial Medal in Chemistry

Two new Members inducted to the College of New Scholars, Artists & Scientists:

- Dr. Hélène Deacon, Faculty of Science
- Dr. Rita Orji, Faculty of Computer Science

Three new Fellows:

- Dr. Leonard Diepeveen, Faculty of Arts and Social Sciences
- Prof. Jennifer Llewellyn, Faculty of Law
• Dr. Douglas Wallace, Faculty of Science

**STORY:** Royal recognition: Get to know the five Dal researchers newly appointed to the Royal Society of Canada

**RESEARCH CANADA:**

2020 Leadership in Advocacy Award presented to Dr. Ingrid Waldron, Faculty of Health

The Research Canada Leadership in Advocacy Award recognizes outstanding champions of health research and health innovation. Recognition of Canadian health research – the kind that attracts the necessary public and political support – often comes from the dedicated and tireless efforts of health research advocates who educate policymakers, the media and the public about the social and economic benefits of health research and its promise of future cures, and importantly, a better quality of life for all Canadians.

**STORY:** Dal Health prof receives Research Canada’s 2020 Leadership in Advocacy Award

**THE PRESIDENT’S RESEARCH EXCELLENCE AWARDS**

The Dalhousie University President’s Research Excellence Awards, first launched in 2018, recognize the research achievements of Dalhousie University faculty at all stages of their careers.

**Emerging Investigator:** This award honours those who, early in their careers, have made noteworthy contributions to Dalhousie's research culture. The 2020 recipients include:

• Dr. Zhenyu Cheng, Faculty of Medicine
• Dr. Noreen Kamal, Faculty of Engineering
• Dr. John Frampton, Faculties of Engineering and Medicine
• Dr. Adeline Iftene, Faculty of Law
• Dr. Floris Goerlandt, Faculty of Engineering
• Dr. Melanie Zurba, Faculty of Management

**Research Impact:** This award has been created to recognize researchers who have, in recent years, made a major and impactful contribution to their field of research. The 2020 recipients include:

• Dr. Paul Bishop, Faculty of Engineering
• Dr. Jeremy Brown, Faculties of Engineering and Medicine
• Dr. Jenny Chen, Faculty of Management
• Prof. Joanna Erdman, Faculty of Law

**STORY:** Celebrating Dal’s stellar researchers: Meet this year’s President’s Research Excellence Awards recipients

**4. Regional Leadership, Global Impact**
Dalhousie’s Innovation Ecosystem

2020 saw Dalhousie’s longstanding Industry Liaison and Innovation (ILI) office undertake a strategic review of its operations, with a view to finding easier ways for its stakeholders to engage with it, and provide greater transparency around processes, procedures and timelines. This review has resulted in a new name - the Office of Commercialization and Industry Engagement (OCIE) - and a refreshed web presence. OCIE will help to grow the research enterprise at Dalhousie by partnering with the private sector and providing excellent customer service to our research community. Its services will focus on industry engagement and supporting the translation of research into commercial application.

Through the Dal Innovates (DI) suite of programming, opportunities are provided for students and faculty to explore and experience innovation and entrepreneurship and develop knowledge, skills, and attitudes necessary to translate new ideas into innovations. DI empowers people to be the best innovators, creators and entrepreneurs, and inspires them to make an impact on local and global challenges.
DI’s approach to innovation is broad, and includes the creativity needed to generate new ideas and the entrepreneurial mindset needed to take a risk and apply those new ideas. DI is both supporting and playing a leadership role in the Halifax innovation district ecosystem, through partnerships with incubators, accelerators, science parks, venture capitalists and other organizations.

Located at Dalhousie’s Rowe School of Business, Creative Destruction Lab (CDL) Atlantic is a seed-stage program for massively scalable, science- and engineering-based companies. First founded in 2012 at the Rotman School of Business at the University of Toronto, the CDL program has since expanded nationally and internationally. CDL-Atlantic capitalizes on Dalhousie’s world-class research expertise at the intersection of sustainability and technology in oceans, energy and food. To date, a total of 90 ventures have been accepted into the program (this year’s cohort included 40 ventures), and 36 graduated last year.
Innovation and the challenges of COVID-19

In response to the challenge of the pandemic, innovation and entrepreneurship programming moved online in spring/summer 2020 and adjusted to support students and researchers. This included the launch of the dedicated and COVID-specific programs Lab2Market Health and CDL Recovery.

**STORY: Bringing health innovation to the market**
In response to the COVID-19 pandemic, the Lab2Market program – a partnership between Dalhousie and Ryerson on research commercialization – is launching a new national funding program to support researchers in the health-care industry.

**STORY: New CDL recovery program assists with COVID-19 effort**
The Creative Destructive Lab (CDL) is turning its focus on technological innovation towards the current pandemic with a new program focused on public health and economic recovery.

Dalhousie, via the Emera ideaHUB, is leading collaborative innovation initiatives with other academic, government and industry partners, to help find solutions to the COVID-19 public health crisis. The university continues to play a key role in the provincial response to the pandemic as a leader on the NS Emergency Innovation Team (EIT) and the “Skunkworks” provincial team. The expertise and world-class facilities at Dalhousie provide testing and validation input that is otherwise inaccessible. Expanding that capacity, and leveraging partnerships to create certification centres for supplies and innovative solutions, is filling a critical gap.

**STORY: How Dal and the Emera ideaHUB stepped up in the face of PPE supply shortages**
As governments and health care providers around the world scrambled earlier this year to acquire personal protective equipment in the face of a growing pandemic and severely disrupted supply chains, Dalhousie and the Emera ideaHUB stepped in to help address the critical need for locally available solutions.
Student Initiatives

Dalhousie provides opportunities for students to discover and experience innovation and entrepreneurship through multi-disciplinary and team-based curricular and extra-curricular learning. Students are prepared with knowledge, skills, capabilities and experience in creativity, problem solving and innovation, so that they can implement solutions that scale rapidly and achieve broad impact.

STORY: Innovative entrepreneurs are “Ready2Launch”
A new accelerator program at Dalhousie, Ready2Launch, is helping to launch a student-led business while teaching innovation and entrepreneurial skills

STORY: 3D BioFibR Inc. Raises $550,000 in seed round to commercialize proprietary platform in advanced materials market
3D BioFibR Inc., an advanced biofibre materials company spun out from Dalhousie University, announced in October 2020 that it has raised $550,000 to fund development and commercialization of its tissue engineering/biomedical device products and to scale up manufacturing of its novel biofibre-based platform. This investment came from a consortium of private investors, including $150,000 from Concrete Ventures and $100,000 from Innovacorp.

^^ Participants in the Ready2Launch cohort connect on Zoom in June 2020.
Dalhousie Research Advisory Council (DRAC)

The Dalhousie Research Advisory Committee (DRAC) is composed of the Associate Deans Research from each Faculty at the university. DRAC provides advice to the Vice-President Research and Innovation on issues relating to the research enterprise at Dalhousie University.
MEMBERSHIP FOR 2020

Dr. Alice Aiken, Vice-President Research and Innovation (Chair)

Dr. Jennifer Bain, Associate Dean Research, Faculty of Arts and Social Sciences

Dr. Robert Beiko, Associate Dean Research, Faculty of Computer Science

Dr. Shaun Boe, Associate Dean Research, Faculty of Health

Donna Bourne-Tyson, Dean of Libraries

Dr. Chris Cutler, Associate Dean Research, Faculty of Agriculture

Dr. Graham Gagnon, Associate Vice President Research

Stephen Hartlen, Assistant Vice President, Industry Relations

Nancy Hayter, Assistant Vice President, Research Services

Dr. Laurent Kreplak, Associate Dean Research, Faculty of Science

Jeff Larsen, Executive Director, Innovation and Entrepreneurship

Dr. Marty Leonard, Dean, Faculty of Graduate Studies

Dr. Roger McLeod, Associate Dean Research, Faculty of Medicine

Dr. Mary McNally, Associate Dean Research, Faculty of Dentistry

Dr. John Newhook, Acting Dean, Faculty of Architecture and Planning

Dr. Kevin Plucknett, Associate Dean Research, Faculty of Engineering

Dr. Sara Seck, Associate Dean Research, Faculty of Law

Dr. Jeannie Shoveller, VP Research, Innovation & Knowledge Transfer, IWK Health Centre

Dr. Gail Tomblin Murphy, VP Research and Innovation, NSHA

Dr. Anya Waite, Associate Vice President (Ocean) & Scientific Director, Ocean Frontier Institute

Dr. Dominika Wranik, Associate Dean Research, Faculty of Management
Measuring Success

As a research-intensive university, Dalhousie is committed to measuring our success with meaningful metrics related to our goal of having impact regionally, nationally and globally.
Analysis has identified the following factors as having the greatest potential to improve Dalhousie’s excellence in research and innovation:

- Research productivity
- Research funding
- International collaboration
- PhD students

These Key Performance Indicators (KPIs) have been identified for monitoring over the term of the Strategic Direction (2018-23) and help us measure our success.

<table>
<thead>
<tr>
<th>Impact Factor</th>
<th>Examples of KPIs</th>
<th>Baselines</th>
<th>Target</th>
<th>Update 2019</th>
<th>Update 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research Productivity</td>
<td>Increased number of publications by academic staff</td>
<td>8,779 publications published by Dal authors, 2016-2018 (3-yr rolling avg)</td>
<td>Year-on-year increase</td>
<td>Baseline established</td>
<td>9,251 publications published by Dal authors, 2017-2019</td>
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<tr>
<td>2. External Research Funding</td>
<td>Increased external research income (including industry)</td>
<td>$156.6 million in 2017-18</td>
<td>Increase overall funding to $200 million over next 5 yrs</td>
<td>31 March 2019: $168.2 million</td>
<td>31 March 2020: $181.2 million</td>
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<td></td>
<td>Increased industry income</td>
<td>$22.5 million in 2017-18</td>
<td>Increase industry funding by 5% per year over next 5 yrs</td>
<td>31 March 2019: $20 million</td>
<td>31 March 2020: $22.4 million</td>
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<tr>
<td>3. International Collaboration</td>
<td>Increased number of international funding proposals submitted by academic staff</td>
<td>14% of all proposals submitted via ROMEO were international in scope, 2017-18</td>
<td>Year-on-year increase</td>
<td>21% of all proposals were international, 2018-19</td>
<td>20% of all proposals were international, 2019-20</td>
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<td>4. PhD Students</td>
<td>Increased nos. of PhD students</td>
<td>663 PhD students enrolled in 2017-18</td>
<td>Additional 165 PhD students enrolled per year for next 4 yrs</td>
<td>710 PhD students enrolled in 2018-19</td>
<td>758 PhD students enrolled in 2019-20</td>
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<td>5. Impact of the Sustainable Development Goals (SDGs)</td>
<td>Increased awareness among academic staff of the relevance/applicability of the SDGs to their research agendas</td>
<td>512 funding applications submitted in ROMEO identified at least one SDG as relevant to the research (39.5% of all applications submitted, 2019-20)</td>
<td>Year-on-year increase</td>
<td>Metric established</td>
<td>Baseline established</td>
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<td>111 faculty completed SDG Faculty Survey in spring 2019, reporting on how SDGs impact their research</td>
<td>Increased nos of faculty participating in Survey each year</td>
<td>Baseline established</td>
<td>206 faculty completed SDG Survey, spring 2020</td>
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