

# OVPRI Annual Report to Senate 2020 - 2021

## Introduction

Each year, the Office of the Vice-President, Research and Innovation (OVPRI) submits a report to Senate articulating the achievements and key actions that deliver on Ryerson's [Strategic Research Plan](#).

As a shared service, the OVPRI fulfills a number of important functions, including:

- Providing advice and support to researchers on individual and institutional research proposals, as well as knowledge and technology transfer to external parties (innovation and commercialization).
- Managing the development of institution-led projects and programs and the development of institutional initiatives and strategic partnerships.
- Facilitating and ensuring compliance with federal ethics guidelines and principles of research integrity.
- Enhancing undergraduate research opportunities.
- Providing the required leadership and support for scholarly, research and creative (SRC) compliance requirements.

While COVID-19 can be seen as a defining feature of 2020-21 and beyond, the OVPRI was in a strong position to adapt to the new realities of the pandemic, allowing the university to continue to build upon planning efforts and the Strategic Research Plan. Many of the challenges brought about by the pandemic advanced anticipated disruptions, challenges and opportunities envisioned when developing the plan. The Strategic Research Plan's thematic areas of focus, and the many areas identified for scaling and accelerating, positioned the university to hold our focus in an agile and disciplined manner, with an emphasis on partnership and collaboration to continue our momentum and trajectory of growth.

Ryerson was ranked first for research income growth among comprehensive universities in Research Infosource's annual list of 50 top research universities in Canada published earlier this year. The university's research income increased 63.4% during the 2018-19 fiscal year, and income for 2019-20, which will be reported in next year's Research Infosource rankings, is in excess of \$105 million.

## Supporting SRC Excellence and Increasing Funding Success

Despite the challenges and disruptions brought about by the pandemic, the university's Strategic Research Plan provided a solid foundation for enabling the university's SRC enterprise to quickly pivot. This included research initiatives that addressed COVID-19 challenges, supported by NSERC Alliance Grants, CIHR awards and critical infrastructure investment by CFI and the Province of Ontario. The OVPRI also quickly created the Ryerson COVID-19 SRC Response Fund, a new, dedicated, internal funding program to provide seed funding and encourage collaboration across disciplines and organizations to solve complex problems resulting from the pandemic. Ryerson researchers received more than \$5.6 million in internal and external funding to support COVID-19-related SRC activities.

## Support for Investigator-led Research Proposals

The OVPRI supports Ryerson faculty members who are applying for funding with grant review and facilitation, budget preparation support, and the sourcing and identification of potential partners for matching programs.

During the 2020-21 fiscal year, Ryerson celebrated unprecedented success in Tri-Council funding, seeing 94 successful awards for a total of \$25,591,95. Funding came from all three Tri-Agencies, including the Social Sciences and Humanities Research Council of Canada (SSHRC), the Natural Sciences and Engineering Research Council of Canada (NSERC), the Canadian Institutes of Health Research (CIHR), as well as the interdisciplinary New Frontiers in Research Fund (NFRF); it also included new COVID-19-related research supports. The year's highlights include continued excellent results in the prestigious SSHRC Partnership award category, as well as the awarding of Ryerson's second NSERC Collaborative Research and Training Experience (CREATE) grant to date. The university was allocated two new Canada Research Chairs (CRCs) bringing the total to 25. Three faculty members were awarded new chairs in the CRC program and one current chairholder was renewed for a total of \$2.3 million in funding.

In addition to Tri-Agency success, over the past year we have seen continued growth in funding through other government agencies and departments (e.g., Mitacs; Employment and Social Development Canada; Immigration, Refugees and Citizenship Canada; Justice Canada; Heritage Canada), municipalities and NGOs. A recent example is Judy Finlay (Faculty of Community Services), who is embarking on a major project with Justice Canada.

The 2020-21 academic year has been both exceptional and unprecedented. Ongoing constraints have been felt across the portfolio and the academic community. These impacts are asymmetrical with particular groups who are disproportionately affected, as reflected in pulse surveys of the OVPRI staff, Ryerson's Dimensions-related Survey and the Ontario Council of University Research VPs (OCUR) working group on equity, diversity and inclusion. The OVPRI has been attentive to the needs and supports required by individuals, and in responding to the stresses and strains felt across the SRC community.

## **Expanding Research Collaborations and Partnerships**

Partnerships and collaborations underpin Ryerson's ability to scale and to accomplish innovative SRC activities to address complex challenges. A successful university of the 21st century will be measured by the depth, breadth and sustainability of its partnerships and collaborations – regionally, nationally and globally. The extent to which the university is integrated into the socio-economic fabric and prosperity of its region and country will be an important feature of these relationships. This will be of particular strategic importance with respect to supporting economic recovery as the country and the world emerges from the present restrictions and disruptions brought about by the pandemic in the coming months and years.

In its 2020-21 release, Research Infosource ranked Ryerson third among comprehensive universities for not-for-profit research income growth, which represents a growing and important emphasis on partnerships and collaborations. The OVPRI has taken a strategic orientation towards these relationships, not only with respect to the breadth and depth of partnerships, but also in establishing and sustaining comprehensive relationships that support the scaling and acceleration of key priorities and strengths in areas of SRC activities across the academy.

The securing of over \$2.8 million in funding from NSERC Alliance Grants is just one example of the greater emphasis on sustained relationships and leveraged opportunities that closely align academic leadership and research excellence. Ryerson researchers will embark on collaborative projects, including creating a comprehensive, multidisciplinary Smart Campus digital twin for Ryerson, utilizing artificial intelligence and machine learning to improve point-of-care ultrasound systems used

in neonatal intensive care units, and developing a nanotechnology-enhanced delivery method involving natural anti-cancer drugs, such as cannabinoids and curcuminoids, for use in targeted cancer therapy.

In addition, the CFI is providing \$1.96 million to support the development of the world's first building designed to be 100% digitally enabled. Led by Jenn McArthur (Faculty of Engineering and Architectural Science), this lab facility will enable the exploration and testing of "smart building" products and management strategies, which could help to address and mitigate climate change. Ryerson researchers also were the recipients of nine John R. Evans Leaders Funds (JELFs) for a total of approximately \$790,500. The OVPRI is awaiting the results of provincial matching funds for these awards.

The OVPRI's new partnership framework articulates how Ryerson will engage with industry, government, the not-for-profit sector and other organizations more effectively, and leverage the university's reputation as a strong partner. Since the new framework was adopted earlier this year, the OVPRI has experienced significant successes, such as a Ryerson collaboration with the City of Toronto in which Ryerson leads or is involved in almost all the projects in a pilot program to enhance city/post-secondary collaborations. In addition, Ryerson is partnering with the Canadian software company SOTI to lead research into autonomous aerial drone technology. This \$20 million initiative will include \$2.5 million going towards the establishment of a new Ryerson research chair as well as co-op and training opportunities for the university's computer science and aerospace engineering students. SOTI saw Ryerson as an ideal collaborator that is able to develop talent and nurture entrepreneurship, bring new technology to market, and leverage technology that will improve the lives of people. Based on its successful collaborations with both for-profit and not-for-profit organizations, the OVPRI will continue to strengthen its capacity and functionality to expand on its partnership framework.

Other examples of partnerships that the OVPRI supports include:

- Led by Executive Director Charles Finlay, the Rogers Cybersecure Catalyst (RCC) continues to demonstrate leadership with a focus on training, research and development, accelerating businesses in cybersciences, and supporting important policy discussions with a strong commitment to equity, diversity and inclusion. This past year, the RCC launched the Catalyst Cyber Accelerator, the first of its kind in Canada, and the Catalyst Cyber Range, which will train and upskill cybersecurity talent and facilitate cyber research and development in Canada. Headquartered in Brampton's Innovation District, the Catalyst Cyber Range provides on-site and virtual programming to organizations across Canada.
- Under the leadership of Executive Director Pedro Barata, in the past two years the Future Skills Centre (FSC) has invested in more than 120 innovative projects across Canada and established nearly 5,000 partnerships with governments, business, not-for-profit organizations, universities and skills-developments specialists across the country. The FSC has collaborated with researchers to build knowledge on critical issues relevant to skills development and has published nearly 60 research studies with its partners. The FSC is a consortium between Ryerson, the Conference Board of Canada and Blueprint, and an excellent example of a large-scale collaborative initiative that has enhanced Ryerson's reputation by being steadfast in going where the need is greatest, listening to workers and the labour market, and always leading with an evidence-based approach.
- Magnet is a not-for-profit, digital social innovation platform co-created by Ryerson University in partnership with the Ontario Chamber of Commerce in 2014. Led by its Executive Director, Mark Patterson, Magnet works with partners to scale its mission to accelerate inclusive economic growth for all in Canada. Magnet has grown tremendously in the past year. It has supported the federal government's Student Work Placement Program, which brings together employers, students and post-secondary school stakeholders to create quality, work-integrated learning opportunities.

# Amplifying SRC Impact, Knowledge Mobilization and Transfer

## Public Policy Task Force

The Ryerson Public Policy Task Force was established by the Vice-President, Research and Innovation in fall 2020 to examine how the university advances faculty and student efforts that contribute to and shape policy development, and to amplify Ryerson's voice to bring evidence and clarity to the challenges and most difficult questions facing society and our governments. Co-chaired by Naomi Adelson, Associate Vice-President, Research and Innovation, and Matthew Mendelsohn, Visiting Professor and Special Advisor to the President and Vice-Chancellor and to the Vice-President, Research and Innovation, the work of the Task Force is to position Ryerson as central to the ongoing conversation on economic and social renewal. The Task Force will produce a report in spring 2021 that identifies initiatives, models and best practices to drive Ryerson's public policy impact and improve lives. Profiling and amplifying Ryerson's SRC initiatives will more effectively situate the university within a wider network of renewal and recovery work, connecting it to complementary initiatives across Canada and globally.

## Equity, Diversity and Inclusion

In 2019, Ryerson became a signatory to the Dimensions Charter and was selected as one of 17 institutions across Canada to be accepted into the two-year Dimensions Pilot Program. By endorsing the charter, Ryerson reiterated its commitment to embedding equity, diversity and inclusion (EDI) principles in its policies, practices, action plans and culture. Ryerson's EDI Action Plan, "Leading Research through Diversity," and the Strategic Research Plan reflect these core values, which form the basis of our commitment to going beyond the minimum compliance requirements. Examples of that commitment include working with the Vice-President, Equity and Community Inclusion, to engage Art Blake (Faculty of Arts) to be the Dimensions Pilot Program Director. He, with support of Dimensions Faculty Chairs, has been leading a collaborative process across the campus to engage faculty, staff and students in identifying and addressing inequities within Ryerson's SRC practices and structures. Due to the pandemic, the timelines for the Dimensions Pilot Program shifted and it is now working towards a summer 2022 completion. The OVPRI has also developed a Canada Research Chair (CRC) Recruitment to Retention Training Strategy to enhance the adoption and implementation of EDI best practices that will ultimately result in increased diversity of Ryerson CRCs. In addition, this training strategy will integrate EDI values more thoroughly into their scholarly research, leadership, and creative activities and teams, thereby building a more equitable and inclusive research ecosystem at the university and beyond.

## SRC Health Strategy

From January to June 2020, the OVPRI and Advancement formed a working group led by Naomi Adelson, Associate Vice-President, Research and Innovation, and engaged Spindle Strategy Inc. to support the development of a [Health Strategy](#). The objective is to support the scaling of SRC activities and a common strategic direction, and to develop a shared narrative that articulates an institutional vision, mission, priorities and pillars for Ryerson's SRC activities in the health space.

Despite the pandemic, more than 50 Ryerson community members and 20 external stakeholders were engaged in strategy development. The [Health Strategy](#) proposed the creation of a new, purpose-driven Urban Health and Well-being Nexus to leverage the university's expansive expertise across the health and well-being field. In November 2020, Roberto Botelho (Faculty of Science) and Sepali Guruge (Faculty of Community Services) were appointed as the academic co-leads for the pilot year. The creation of the Urban Health and Well-being Nexus is guided by a diverse, pan-institutional advisory committee to prototype a new model for scaling and collaboration.

## AIMday™

In 2020, Ryerson became the Canadian hub for AIMday™ under an agreement with Uppsala University, Sweden. AIMday™ (Academic Industry Meeting Day), is a unique meeting format focused on an agenda defined by industry that has proven successful in creating networks, contacts and collaborations, and in finding solutions to critical problems and challenges. In February 2021, Ryerson hosted AIMday™ Cybersecurity 2021, which was designed to enable Canada's academic community to connect with organizations and discuss the most pressing cybersecurity challenges that our country is facing. Participating organizations included the City of Toronto, Telus, RBC, and the Digital ID and Authentication Council of Canada (DIACC). This was the largest AIMday™ event ever held in Canada. It attracted significant participation of Ryerson's researchers (74% of all academic attendees) who contributed 84% of the expressions of interest (EOI) in response to industry priorities. Every participating organization received at least one EOI. The OVPRI will continue to use AIMday™ as a tool to promote partnership and collaboration and is planning for another AIMday™ event to take place in fall 2021.

## Commercialization and Knowledge Translation

The OVPRI provides various levels of support for the innovation zones to enable knowledge and technology transfer. Despite a smaller number of new disclosures compared to previous years because of the pandemic, the current licensing survey indicators show an almost equivalent commercialization and technology transfer activity to previous years, generating \$342,129 in royalties from various licensing deals and signing 6 new licenses. The OVPRI received 67 invention disclosures of which 22 are faculty-based disclosures (a drop from 36 in the previous fiscal year) with the remaining coming from student-led activities under the Esch Award program. The OVPRI supported 8 patent applications this fiscal year. Other commercialization activities provided by OVPRI included market assessment and business plan development support, commercialization workshops, and information sessions for researchers. Despite the change to working remotely, the OVPRI was able to maintain its reputation as a supportive and assistive team that is helping to drive more faculty-led commercialization activities across the campus.

## Enhancing Reputation

The OVPRI continued to focus its communication efforts on items that enhanced Ryerson's research reputation and increased faculty recognition.

Two Ryerson professors were selected for prestigious honours by the Royal Society of Canada (RSC). Blake Fitzpatrick (Faculty of Communication and Design) was elected as a Fellow of the RSC's Academy of Arts and Humanities, and Eliza Chandler (Faculty of Community Services) joined the College of New Scholars, Artists and Scientists, which recognizes emerging leadership across disciplines. Established in 1883, the RSC recognizes the country's eminent contributors to the arts, humanities and sciences through a competitive, peer-juried process.

The OVPRI promotes research at Ryerson to support knowledge mobilization and enhance the university's reputation. In particular, the OVPRI worked with University Relations on a reputation campaign which focused on research. The campaign was promoted through traditional and online media and appeared in the *Globe and Mail*, *National Post*, *University Affairs* and various other outlets. The OVPRI also sponsored and participated in a number of conferences and activities that showcased Ryerson researchers and the impact of their work, such as the Canadian Science Policy Conference and a panel for the Toronto Region Board of Trade.

The OVPRI continues to share research impacts, outcomes and faculty achievements across a range of communication channels. This includes our quarterly Innovation newsletter that is shared with a subscriber base, the news channels on our website, other sites across the university and social media. The OVPRI shared 72 stories, profiling the SRC activities of more than 189 Ryerson

faculty and graduate students, and explored innovative formats, such as our map of [Ryerson COVID-19 research](#), to promote the impact of COVID-19-related SRC activities. We also promoted 62 stories that featured 36 faculty members, 15 graduate students and 11 other Ryerson-affiliated researchers in *The Conversation Canada*.

## **Strengthening SRC Supports and Systems**

To advance SRC excellence and promote SRC impact, a key priority of the OVPRI is to build collaborative partnerships across the university and to strengthen supports and systems.

### Maintaining the SRC Enterprise During COVID-19

In March 2019, when Ryerson moved to an essential services only model, the OVPRI – with tremendous support from Facilities Management and Development (FMD) and Environmental Health and Safety (EHS) – began to collaborate to ensure that SRC activity deemed essential by the Province of Ontario could safely continue. These efforts led to the development of guidance to quickly and safely shut down non-essential SRC activity on campus and then to allow for the safe reopening of labs and SRC spaces for limited SRC activity. There was no off-the-shelf plan, and public health guidance changed as new information became available and the world's understanding of COVID-19 grew.

Before SRC spaces could be reopened, the FMD team needed to inspect the spaces, perform a deep cleaning of common areas, and test HVAC, water and electrical systems as well as EHS facilities (eye wash/shower stations, etc.). Once the SRC spaces were active, support then needed to be coordinated to ensure ongoing health and safety maintenance.

The result of these efforts is that more than 700 faculty members, students and postdoctoral fellows were able to continue their SRC activities safely on campus, with approximately 145 SRC spaces approved for reopening and now back in operation. The guidance and communications developed by Ryerson have now been used by two other post-secondary institutions as the basis for their own resumption processes.

### Preserving and Enhancing the Student Experience

The OVPRI continues to enhance the undergraduate student experience and to strengthen connections between undergraduate students and SRC activity. The Undergraduate Research Opportunities (URO) program enables students to learn important research-related skills and to prepare for academic and career development. When planning to safely allow for SRC activities to continue during the pandemic, provisions were included for preserving the student experience for undergraduate thesis students, research assistants and the URO program. We were also able to pivot to a virtual celebration spanning five days where close to 50 students from across Ryerson participated and shared the findings of investigations they had conducted. Events like this encourage, support and put emphasis on the importance of our undergraduate students' participation in the research enterprise.

## Enhancing Support for Postdoctoral Fellows

Postdoctoral fellows are an essential component to the research enterprise and will be key to scaling Ryerson's SRC intensity. Working with the Yeates School of Graduate Studies (YSGS) and Ryerson Human Resources (HR), the OVPRI has been developing additional supports for postdoctoral fellows to integrate them into the Ryerson community and provide greater consistency of experience. To coincide with National Postdoc Appreciation week, which took place in September 2020, the OVPRI and YSGS launched a [comprehensive website](#) to continue to build community and to feature postdoctoral fellows across the university in video profiles.

## Tri-Agency Financial Administration

Building a comprehensive university requires the development of effective supports and services for researchers. To continue to intensify Ryerson's SRC culture, we must place a greater emphasis on simplifying and streamlining administrative structures, processes, services and resources. To this end, the OVPRI has continued to work with Ryerson's Finance, HR and Provost's offices to improve administrative support for researchers. An example of this collaboration is the work done towards adopting a principle-based approach to the financial administration of research as mandated by the Renewal of the Tri-Agency Financial Administration initiative. This move to a principle-based approach will allow us to streamline the administration and use of Tri-Agency grant funds toward a less directorial and burdensome approach for institutions and grant recipients. While COVID-19 has delayed some of this work, the new model should be in place by the end of 2021.

## SRC Policy Review

In 2017-2018, the Senate Scholarly Research and Creative Activity Committee established a more structured approach to the review of SRC-related policies in line with the approach being taken by other Senate standing committees. The OVPRI developed a schedule for the review of SRC-related policies to allow for the even distribution of policies over the course of the five-year cycle. The intent was for the policies to be discussed, examined and revised, as required, once every five years.

For 2020-2021, the OVPRI will complete the initial five-year review schedule for the following:

- Policy 153 - Non-Competition Agreements (approved at the May 2020 Senate meeting)
- Policy 154 - Signing of Research Applications and Agreements in Support of Research (approved at the May 2020 Senate meeting)
- Policy 63: Policy on Ownership of Student Work in Research (on track to have review complete by December 2021)

These are the final three SRC-related policies that required an initial review. Beginning in 2021, a fresh review cycle began with the regularly scheduled five-year review of Policy 51 - Ethical Conduct for Research Involving Human Participants, which was last examined in 2016. The review of Policy 51 is on track to be complete by December 2021.

## Implementing Policy 144 - Research Centres

The Senate approved revisions to Policy 144 - Research Centres at its December 2018 meeting. Since that time, the OVPRI has been working with the faculties on implementing the revised policy. Faculties have been provided with templates, guidelines and scheduling plans to assist them in the requisite one-year and five-year reviews of their respective research centres, as well as for their centre creation proposals.

Two faculty-based research centres were approved by their respective deans and were brought to the SRC Activity Committee of the Senate for information, coordination and oversight on April 5, 2021.

1. Health Outcome Promotion and Engagement (HOPE) is a faculty centre for sexual and gender minority people led by Trevor Hart. The research centre was approved by the dean of the Faculty of Arts on November 20, 2020. HOPE conducts community-engaged, interdisciplinary research to understand and promote the health of people who identify as members of a sexual or gender minority community, including Indigenous peoples, Black people and people of colour.
2. Centre for Digital Enterprise Analytics and Leadership (DEAL) is a proposed faculty centre at the Ted Rogers School of Management to be led by Ravi Vatrapu. The proposed research centre was approved by the dean of the Ted Rogers School of Management on November 18, 2020. DEAL is a transdisciplinary research centre drawing from computer science, social sciences, learning sciences and management. It aims to research topics in and aspects of digital enterprises, with an empirical focus on digital data analytics and an educational focus on digital leadership. DEAL seeks to provide research-based technical solutions and management frameworks to established and emerging enterprises in Canada to assist their transformation into digital enterprises.

As per Policy 144, to avoid duplication and overlap with existing university activities, these proposals were posted on the OVPRI website from December 21, 2020 to January 22, 2021 to allow for review and comments by any interested member of the Ryerson community. No feedback was received during this consultation period, and following coordination with the SRC Activity Committee of the Senate and the OVPRI, both research centres have been confirmed.

### OVPRI Annual SRC Integrity Report to Senate

As per section 10 of Policy 118, “for the purpose of educating University members on acceptable and unacceptable practices for scholarly, research and creative activity and research ethics activities”, the OVPRI has prepared an annual summary of the SRC integrity breach complaints and outcomes.

As per Policy 118, a breach of SRC integrity occurs “when the activity deviates from the commonly accepted standard of conduct in the discipline/field, in accordance with the University and the funder guidelines. A breach can occur at any stage of SRC activity from conceptualization to dissemination. In determining whether conduct deviates from relevant SRC community standards or practice, due regard is given for what the individual reasonably ought to have known, the possibility of reasonable and honest error, and potential differences in the interpretation of data and research designs.”

From May 1, 2020 to April 30, 2021, two allegations of SRC integrity breaches were initiated under Policy 118. The following table highlights the nature of the allegations, as defined in Policy 118, and the outcomes per complaint.



Complaint #	Allegation of SRC Integrity Breach (Policy 118)	Outcome
1	<p><b>7.2 Falsification:</b> Willfully misrepresenting, misinterpreting, or omitting any aspect of the research, including data and results</p> <p><b>7.6 Misuse of funds</b> acquired for the support of SRC activities</p> <ul style="list-style-type: none"> <li>● 7.6.1 Failure to comply with the terms and conditions of grants and contracts</li> <li>● 7.6.2 Misuse of University resources, facilities and equipment</li> </ul> <p><b>7.15 Misleading publication</b>, for example:</p> <ul style="list-style-type: none"> <li>● <b>7.15.1</b> Failing to appropriately include as authors other collaborators who prepared their contributions with the understanding and intention that it would be a joint publication</li> </ul>	Inquiry ongoing
2	<p><b>7.3 Plagiarism:</b> Falsely claiming someone else’s words, work or ideas as one’s own</p> <p><b>7.14 Mismanagement of conflict of interest:</b> Failure to disclose and/or address material conflicts of interest to the University, sponsors, colleagues or journal editors when submitting a grant, protocol, manuscript or when asked to undertake a review of research grant applications, manuscripts or to test or distribute products</p> <p><b>7.15 Misleading publication</b></p> <p><b>7.17 Misrepresentation</b> in a grant application or related document</p>	Complaint withdrawn before initiation of the inquiry stage

In summary, one complaint is currently undergoing an inquiry to establish whether the allegations put forward were “responsible”, and the remaining complaint was withdrawn before reaching the inquiry stage. Additionally, no appeals of REB decisions were submitted, which falls under the purview of the Vice-President, Research and Innovation.

On review of the allegations of SRC integrity breaches, we see that greater clarity is needed on the issues such as those of authorship assignments for publications, intellectual property and what fundamentally constitutes SRC activity, highlighting the need for ongoing SRC integrity training throughout the SRC community. This is being addressed by a research integrity training module that is being written and designed by the OVPRI. It is anticipated that this will be soft-launched in the summer of 2021.

## Conclusion

As the above report has highlighted, despite the challenges posed by the COVID-19 pandemic, Ryerson was able to maintain its trajectory of success and continue to build on its solid foundation of SRC excellence to successfully compete locally, nationally and globally. With a strong strategic research plan and an exceptionally dedicated team, the OVPRI will continue to encourage a bold, collaborative, multidisciplinary approach to scaling SRC activities to ensure Ryerson’s success now and in the future.