

# STRATEGIC RESEARCH PLAN

Ryerson  
University  
2020–2025

**RYERSON IS A HUB  
FOR WORLD-LEADING  
RESEARCHERS  
WORKING TO SOLVE  
COMPLEX REAL-WORLD  
PROBLEMS**



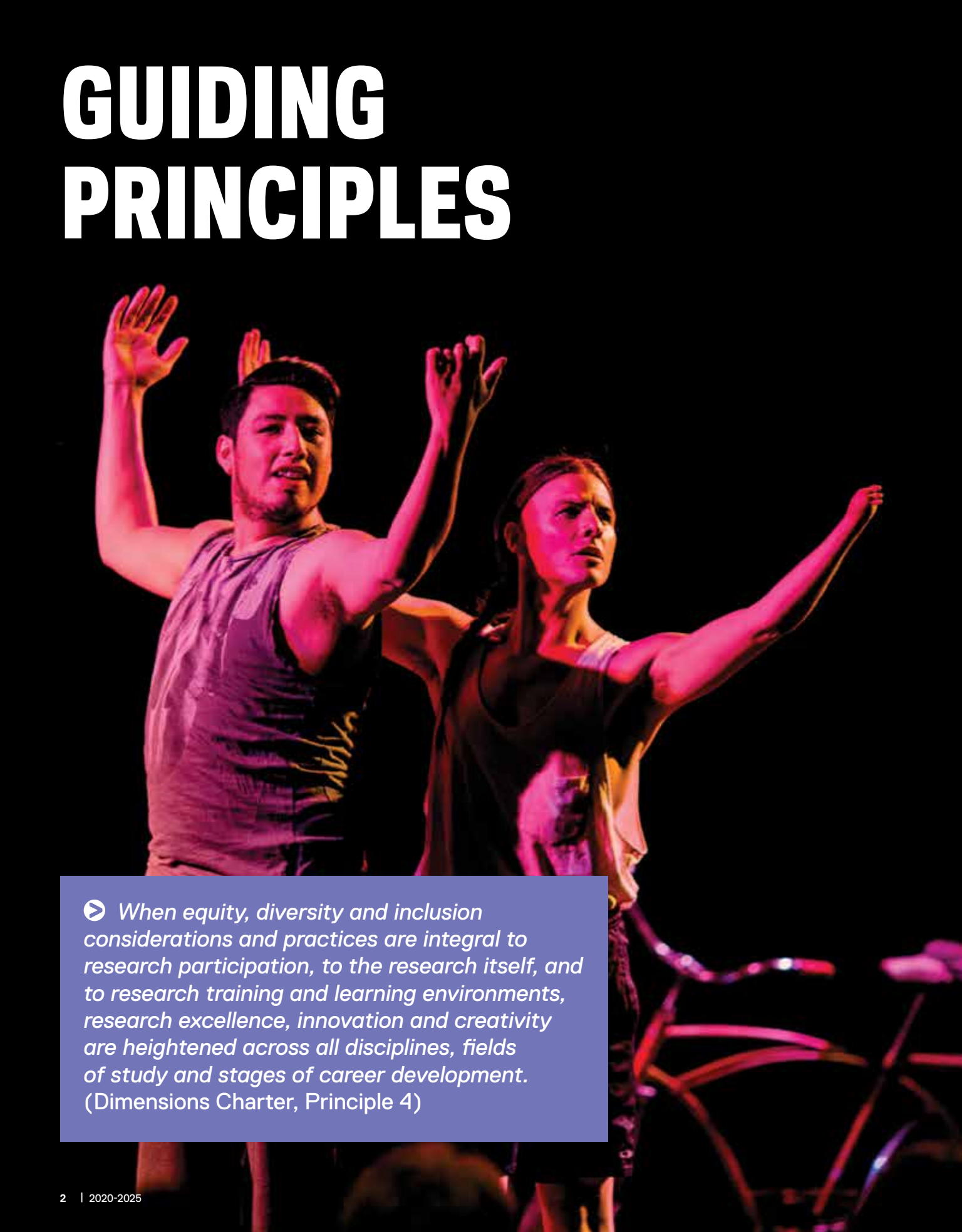


## **INVENTIVE AND PURPOSEFUL THINKERS AND CREATORS**

Ryerson University is located in the heart of Toronto – one of the most dynamic, diverse urban centres in the world – and leverages the energy of its location to foster bold thinking, collaborative partnerships, innovation, and entrepreneurship. Our Scholarly, Research and Creative (SRC) engagement is strengthened by a willingness to cross disciplinary boundaries, break down barriers, build alliances and take risks to advance inquiry, discovery, knowledge, and creative works. Incubating local, national, and international networks and communities of practice, Ryerson researchers are generating and applying knowledge across a broad range of disciplines, fields, professions, and private, public, and non-profit sectors.

Led by intellectual curiosity and a desire for sustainable change, Ryerson researchers are creating evidence-based solutions and activating real-world transformation. Ryerson's distinctive core mission – to serve societal need – responds to the demand for highly skilled creative and critical thinkers who address increasingly interconnected, complex problems and work towards effective solutions. Our faculty and students are willing to defy convention as they seek solutions to make the world a better place for all. As a globally connected city university, we believe that inclusive and collaborative approaches are essential to great research. To that end, Ryerson is committed to cooperation and partnerships with diverse communities, industry, stakeholders, and government. Ryerson researchers are building on the success of these partnerships as we continue to forge new ones.

# GUIDING PRINCIPLES



▶ *When equity, diversity and inclusion considerations and practices are integral to research participation, to the research itself, and to research training and learning environments, research excellence, innovation and creativity are heightened across all disciplines, fields of study and stages of career development. (Dimensions Charter, Principle 4)*

Crippling the Arts symposium: An exploration of how disability arts change how we understand and celebrate bodies and minds of difference.

## EQUITY, DIVERSITY, INCLUSION AND ACCESS

Foundational to SRC activity at Ryerson are the principles of equity, diversity, inclusion, and access. Together, these principles underscore our commitment to and expression of social justice and are essential to our integrated approach to SRC activity as they cross-cut Ryerson's strategic research themes and objectives. At Ryerson, we intentionally advance equity, diversity, inclusion, and access through our SRC activities. Advancing these principles amplifies our research and innovation opportunities, removes barriers, fosters multiple worldviews, and cultivates an enriched environment for SRC success. These guiding principles incorporate and advance Indigenous knowledges and perspectives, build on existing Indigenous SRC leadership, and strengthen SRC relationships in a reciprocal and respectful manner.

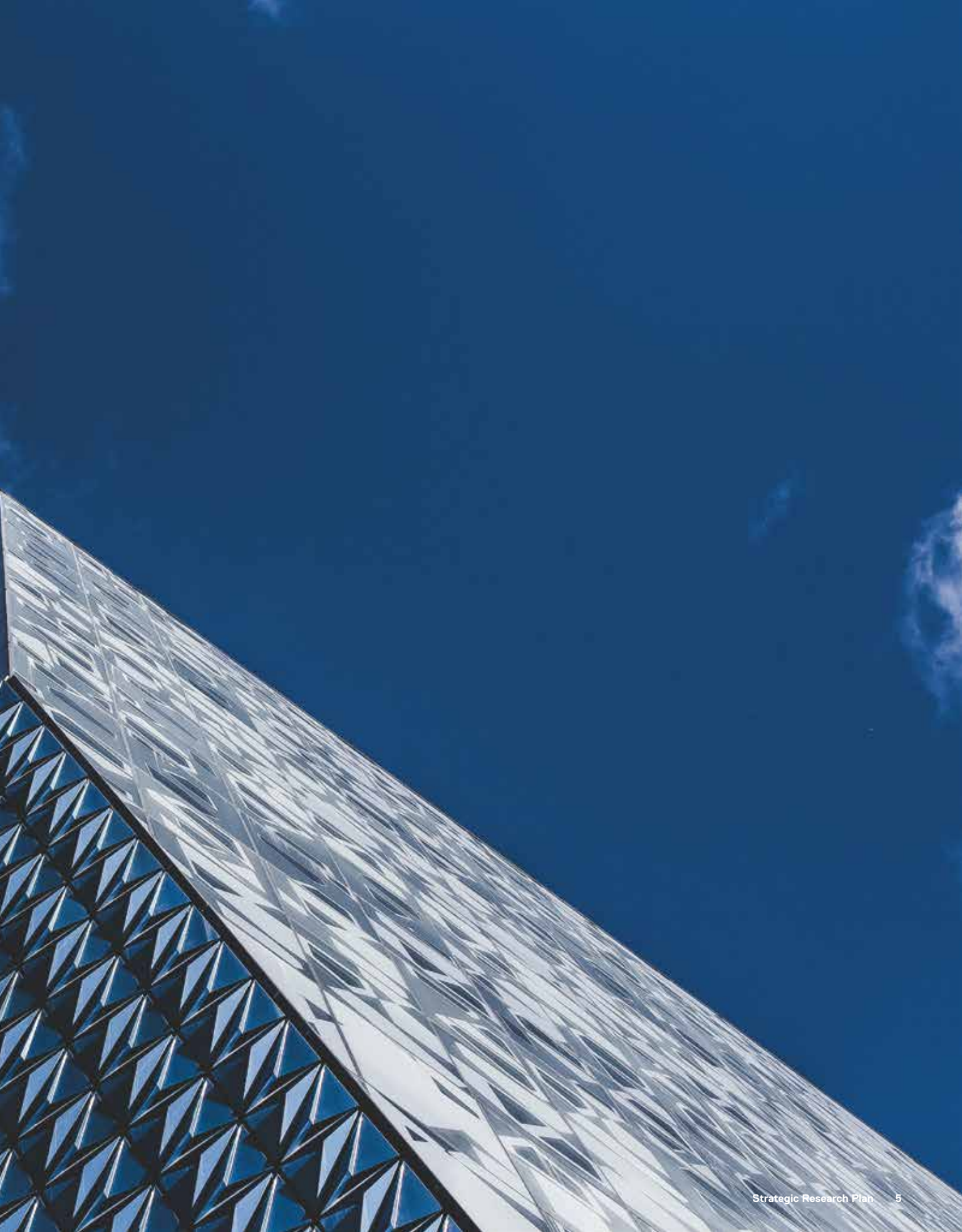
Equity, diversity, inclusion, and access are expressed and promoted through a multiplicity of perspectives, experiences, and methodological approaches to the SRC work undertaken at the university. As a signatory to the Dimensions Charter and a selected pilot institution, Ryerson is committed to these principles and associated practices that will further strengthen the overall excellence of SRC activities.

# SRC STRENGTHS AND PRIORITIES

Central to Ryerson's success is a focus on SRC excellence and impact through a combination of investments by faculties, researchers, and the institution. Striving for the highest standards in SRC excellence, Ryerson is enabling SRC growth by supporting strategic hiring priorities, driving multidisciplinary SRC initiatives, growing graduate programming and training, and recognizing distinction in SRC activity. Success also includes a commitment to the full spectrum of community engagement and knowledge translation towards improving the quality of life for the world's citizens through sustainable social, physical, and technological innovation.

Ryerson's strengths and priorities in SRC activity, innovation, and entrepreneurship are reflected through named research chairs, recognized research centres, and commercialization activity with industry. Together, they highlight Ryerson's national and international leadership.

Using the Strategic Research Plan as a guide, Ryerson will strengthen strategic and multidisciplinary collaborations across themes, expand international partnerships, and promote greater alignment between the innovation ecosystem and research through enhanced commercialization, knowledge translation, and mobilization. In support of this expansion and the anticipated growth of activities, Ryerson will continue to streamline administrative and infrastructure support, including strengthening the quality of our accountability framework and reputation-enhancing initiatives.







# STRATEGIC THEMES

The six strategic themes outlined below highlight where Ryerson is driving SRC intensity, impact, and excellence. They are neither exhaustive nor prescriptive. With a focus on local, national, and international engagement and cooperation, and partnerships with academic institutions, government, non-profit and community-based organizations, as well as the private sector, the themes – and the confluence of activities they represent – respond to societal needs and advance transformative knowledge. These themes highlight the ways in which Ryerson’s SRC community addresses complex problems that demand bold and creative solutions, such as those described in the United Nations 2030 Sustainable Development Goals. Ryerson’s SRC activities are making a significant impact in a rapidly evolving world.

The six themes are as follows:



Urban  
Innovation



Work, Skills,  
Industry



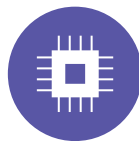
Justice, Equity  
& Society



Health &  
Well-Being



Culture  
& Creativity



Technology &  
Intelligent Systems



## Urban Innovation

Global populations are increasingly mobile and concentrated in urban centres. With our collective future tied to climate change and the fate of cities, the health of our urban environments relies on innovative solutions to complex and often interlinked social, economic, political, environmental, cultural, and technological challenges. Canada's cities are growing, with roughly 80% of Canadians living in urban areas and with the vast majority of the almost 300,000 people who migrate to Canada each year settling in cities and suburbs across the country. Newcomers are vital to Canada's diversifying cultural, social, and economic landscapes and its expanding workforce. Ryerson research is devoted to defining issues of urban innovation, including the physical, technological, and societal aspects of urban growth and change. Ryerson researchers are actively seeking partnerships and new ways to ensure that cities are safe, resilient, and sustainable. Our current expertise ranges from sustainable housing and renewable energy to the future of land use and water policy, from food security to smart infrastructure, migration, settlement, responsible development, and urban design.

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## Justice, Equity & Society

Increasingly, democratic states and institutions are facing a combination of external and internal challenges. Changes in the manner in which information is communicated have fundamentally altered journalism and the media industry. Trust in public institutions is eroding and participation in traditional forms of democratic engagement is declining. Growing income and social inequality and a rise in populism compound these challenges. There are systemic factors within the judicial system that result in inequity and injustice. These challenges, impacts, and intersections are taken up by our faculty as we continue to build capacity in the study of democratic institutions with a focus on inclusivity, governance, and engagement.

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## Culture & Creativity

Art and creative expression expand the ways we think about the world and our place in it, enrich our lives, and help us arrive at creative solutions to real-world problems. Blurring the line between conventional research and creative practice, and drawing from a diverse urban and academic milieu, Ryerson faculty combine traditional media with new technologies to drive innovation in design and culture industries. Fields of inquiry range from the digital humanities, photography, and theatre to augmented reality, activist art, and the protection of cultural heritage. Using a range of methods of curation and creation, in fields such as journalism, communication, and marketing, and in pioneering forms of accessible design, our SRC leaders are forging new practices and standards for academic, professional, business, and public audiences.



## Work, Skills, Industry

With nearly 42% of Canadian jobs likely to be affected in some way by automation over the next two decades, and with the disruptive nature of social media, unprecedented access to big data, and analytic advances, all aspects of the workforce and management will need to adapt. Canada's competitiveness and prosperity therefore depend on building a resilient workforce by matching skills and employment opportunities, access to life-long learning, as well as ensuring the full participation of the underemployed and unemployed, including equity-seeking groups and underserved communities. As technological and skills innovation are key areas of research at Ryerson, we are ideally positioned to take the lead in investigating and developing tools and strategies that will advance inclusive, ethical, and sustainable economic growth and productive employment.

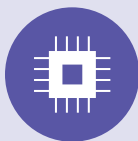
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## Health & Well-Being

Ryerson approaches health and well-being research by focusing on quality of life and promoting well-being for all. In advancing health-related SRC activities, our multidisciplinary and multisectoral researchers work across a range of disciplines and perspectives that address personal, social, economic, technological, and environmental factors impacting health and well-being at the individual, community, and global levels. Our SRC leaders are innovators in the fields of biotechnology and robotics, and in the use of intelligent systems in disease recognition and treatment. They are advancing research impact in areas such as patient experience, nursing, aging, mental health, housing and design, social practices, and nutrition.

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## Technology & Intelligent Systems

Advanced manufacturing drives Canada's economy and accounts for approximately 11% of the country's GDP. We have invested in machines and technology that are at the intersection of design and user experience, and will unlock new possibilities for the future of human-machine interactions. Ryerson is pioneering technology and design in sectors such as manufacturing, aerospace, robotics, security, retail, and construction. Working with industrial partners, Ryerson is creating a strong technological and industrial ecosystem through our research in engineering, design, management, and production. Innovations in sustainable industrialization and intelligent systems are transforming a wide variety of sectors, including the Internet of Things, autonomous systems, process optimization, advanced manufacturing, 3D printing, aerospace, robotics, and cybersecurity.





## INDIGENOUS THOUGHT & RESURGENCE

Indigenous Thought & Resurgence, which transcends a single thematic focus, captures the collectivity of work being undertaken at Ryerson to cultivate Indigenous-led SRC growth and success across the institution. Specific attention to Indigenous knowledges and perspectives as well as processes of decolonization is a priority. Recent investments in areas such as digital humanities and Indigenous governance represent some of the ways that Ryerson is committed to cultivating Indigenous-led SRC growth.

The establishment and maintenance of relevant and appropriate SRC engagement with Indigenous individuals and communities is integral to the institutional commitment to Indigenous Thought & Resurgence. Specifically, we understand that SRC activities with Indigenous peoples is conducted in a manner that is relational and respectful of Indigenous communities and individuals, demonstrates concern for the collective and individual welfare of Indigenous peoples, and is collaborative in nature.<sup>1</sup>

<sup>1</sup> “Guidelines for Research Involving Indigenous Peoples in Canada” (Ryerson University Research Ethics Board).

# CURRENT AREAS OF FOCUS

The areas of focus listed on the opposite page reflect a clustering of activities and synergies that have critical mass and are ready for accelerated growth in SRC activity and investment. Building on a solid foundation of excellence and academic leadership, these areas present strategic and enhanced opportunities for national and international collaboration, industry and community partnerships, funding, recognition, and impact.

## City Building and Urban Innovation

City building is central to an extensive range of SRC activity at Ryerson. Leveraging the Centre for Urban Innovation, Ryerson has the opportunity to harness a rich constellation of activities, interests, and expertise to bring greater focus and scale to the university's leadership on critical urban issues and to define the cities of the future.

## Migration and Settlement

Ryerson's established research expertise in migration, integration, refugee, and diaspora studies, and the work of the Ryerson Centre for Immigration and Settlement, have increased capacity with the Canada Excellence Research Chair in Migration and Integration. Together, they set the course for further opportunities for growth and international scope.



### **Biomedical Engineering, Science & Technology**

By building and strengthening partnerships with hospitals, the clinical community, and the communities they serve, Ryerson is expanding its research networks and enhancing access to state-of-the-art labs and infrastructure. Through collaborative platforms, such as the Institute for Biomedical Engineering, Science and Technology, Ryerson researchers can continue to develop new and innovative ways of advancing clinical care and making discoveries that align with market need.

### **Energy**

Ryerson is uniquely positioned to contribute to solving the challenges faced by the energy sector – particularly those related to global warming. Through our Centre for Urban Energy, an academic-industry partnership committed to exploring and developing sustainable solutions to urban energy challenges, Ryerson researchers are advancing how we generate, transport, store, and consume energy.

### **Future Skills**

With the award of the federally funded Future Skills Centre, which builds on the expertise of the Diversity Institute and Magnet, Ryerson is poised to deepen and broaden SRC-related activity with a focus on how to best prepare Canadians for future workforce opportunities. This includes the changing nature of skills and competencies, and the policies, processes, and tools that advance economic inclusion and success.

### **Democracy Studies**

With a Jarislowsky Democracy Chair and two Canada Research Chair (CRC) allocations, Ryerson is deepening and expanding its research expertise, teaching, and public outreach on issues related to democratic politics, Indigenous governance, and civic engagement.

### **Cybersecurity**

Cybersecurity is an immediate global issue. Along with the investment of future CRCs in this area, Ryerson is bringing together researchers, government, and industry leaders through the Rogers Cybersecure Catalyst and will leverage both resources and entrepreneurial capacities to solve critical security challenges.

### **Creative Innovation**

Working with the most dynamic and innovative creative companies in Canada, Ryerson is enhancing opportunities for collaborations between researchers and industry towards transformational and disruptive innovation. Investments in the Faculty of Communication and Design's Catalyst and Creative Technology Lab reflect Ryerson's integrated, multidisciplinary research approach.

# CULTIVATING SUCCESS – ENCOURAGING BOLD IDEAS







Ryerson leverages its historical mandate to conduct SRC activity that serves societal need to inform its current and future SRC aspirations and programming. Capitalizing on this trajectory, Ryerson is breaking down thematic and disciplinary silos by integrating a mix of programs, faculties, and sector orientations. This approach allows for the clustering and growth of SRC activity towards enhanced SRC partnerships and opportunities for researchers and students. We are committed to a multi-year strategy to expand the quality and level of support to enhance research participation, excellence, and success.

Ryerson's SRC excellence and impact are built upon supporting our established strengths as well as identifying and incubating new, bold ideas and nascent areas of SRC activity. This strategy includes attracting top faculty, students, and staff and a sustained focus on building our SRC profile and reputational success through increased funding, greater recognition, publications, commercialization and patents, industry and community partnerships, experiential learning opportunities, and knowledge mobilization.

# Role of the Office of the Vice-President, Research and Innovation in Cultivating Success

To support SRC excellence, attract and retain top talent, and promote SRC impact, a key priority of the Office of the Vice-President, Research and Innovation (OVPRI) is to build collaborative partnerships across the university. This includes working with Ryerson International towards greater global SRC partnerships and initiatives and with the Yeates School of Graduate Studies in support of highly qualified personnel at the graduate and post-graduate levels. In addition, the OVPRI is strengthening the innovation ecosystem in moving from lab to market by providing various levels of support for knowledge and technology transfer and commercialization.

## **The OVPRI, as a shared service, fulfills a number of other important functions, including:**

- Providing advice and support to researchers on individual and institutional research proposals;
- Managing the development of institutional-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; and,
- Providing the required leadership and support for SRC compliance requirements.

As the funding landscape changes, the OVPRI is evolving in order to be well positioned to provide comprehensive support and encourage the stimulation of innovation through strengthened multidisciplinary connections and bigger and bolder projects and partnerships.

To enhance communication, collaboration, and alignment, as well as promote greater cross-training of employees and succession planning and respond to a changing SRC ecosystem, the OVPRI has undertaken an organizational redesign around common goals and outcomes.

## **The goals of the OVPRI organizational changes are to:**

- Clarify roles and responsibilities
- Enhance communication and collaboration
- Strengthen client service orientation of the office
- Align governance with strategic priorities



## SRC Physical and Digital Infrastructure

The physical and virtual spaces of the institution are central to the success of our SRC growth. Progress and the growth of physical SRC infrastructure has been made with the new Centre for Urban Innovation (established in 2018) and the Daphne Cockwell Health Sciences Complex (established in 2019). Future needs will include the expansion and anchoring of science research and educational opportunities. In conjunction with the campus master planning exercise and research infrastructure funding calls, we will continue to identify new space and facility requirements that will connect research and talent development with industry, business, and community. New and renewed facilities, in turn, will increase opportunities for innovation, partnership, collaboration, and the anticipated increase of research activity and recognition.

Investment in digital infrastructure is equally vital to the expansion of SRC activity at Ryerson. The Ryerson University Library and Archives is central to the digital infrastructure required to ensure SRC innovation and success. The library provides expertise, cross-disciplinary academic perspectives,

and a deep understanding of SRC needs and opportunities. It also plays a foundational role in supporting individual researchers, scholars, creators, and students, and in connecting multidisciplinary research teams. In addition, it provides a rich set of resources (digital, data, textual, visual, scholarly, published and community generated) and offers the latest tools and technology-enhanced spaces necessary for the creation of new ideas, knowledge, and understanding. With expertise in research data management, open scholarship and science, intellectual property, knowledge mobilization and community outreach, the library is critical to advancing the goals of this plan. Sustained investment focused on SRC growth and transformative digital and physical infrastructure will leverage some of the library's most successful SRC endeavours (institutional repository, open publishing, collaboratory, digital preservation, researcher communities, open researcher platform pilot) and allow expansion and creation of innovative new programs and services to meet emerging SRC priorities.

# MEASURING SUCCESS



The Synaesthetic Media Lab  
(Synlab) led by Dr. Ali Mazalek,  
a Canada Research Chair in  
Digital Media and Innovation.

Agreed-upon measures of progress are essential for operational transparency. These measures facilitate the OVPRI's planning and decision-making processes and allow for the celebration and recognition of SRC excellence. The OVPRI will continue to work closely with the deans and associate deans of research in each faculty to co-create relevant SRC activity standards and measures for review to directly support their respective Strategic SRC Plans.

SRC success may be evaluated through a range of activities, including:

#### **Research funding and collaboration**

- Intensity of SRC activity and proportional share of external funding
- Quality and number of international partnerships, funding, and publications
- Number of collaborations and partnerships with industry, government, and non-governmental organizations
- Leadership in the development of new fields and/or multidisciplinary areas of SRC activity

#### **Recognition**

- Number of national or international SRC awards and prizes to faculty
- Number of national or international SRC awards and prizes to undergraduate and graduate students
- National and international peer review and recognition
- Periodic third-party review

#### **Impact**

- Number and quality of outputs such as peer-reviewed publications or exhibits, as appropriate to discipline
- Traditional and social media coverage
- Industrial or social innovation, including new technologies, patent applications, licensing of products and services, or other forms of knowledge transfer and adoption resulting from SRC activities
- Community benefit
- Knowledge translation and mobilization initiatives
- Visibility and reputation, measured by national and international reputational surveys

#### **Growth**

- Attract, develop, retain, and support outstanding faculty, students, and staff
- Attract and retain nationally and internationally funded postdoctoral fellows
- Cultivate SRC interest and experience for undergraduate students
- Collaborate with the Yeates School of Graduate Studies towards attracting and training high quality PhD and masters students
- Globally mobilize people and ideas through exchange, programs, and advanced research opportunities

# STRATEGIC RESEARCH PLAN PROGRESS REVIEW



SRC activity is a cornerstone of Ryerson University's orientation towards and commitment to the development of talent, student experience, knowledge creation and mobilization. These activities address key challenges and opportunities in the world today, through collaborations and partnerships our region, country, and the globe.

The Strategic Research Plan is integrated and aligned with the institutional priorities set out in the university's Academic Plan, which articulates the university's vision to be Canada's leading comprehensive innovation university. SRC activity, as one of the key priorities of the Academic Plan, focuses on excellence, intensity, and impact. The Strategic Research Plan outlines how Ryerson is supporting and building SRC excellence, intensity, and impact by distinguishing key thematic areas of SRC investment and highlighting support structures.

Progress on the Strategic Research Plan will be reported through the Senate SRC Activity Committee. The Senate SRC Activity Committee has a mandate to examine and report to Senate regarding the state of SRC activity at Ryerson and upon issues regarding SRC activity that are likely to arise. Its membership, which is broadly representative of the university, includes individuals from each faculty, the library, graduate studies, the Research Ethics Board, as well as undergraduate and graduate student senators.

The Senate SRC Activity Committee has established a subcommittee, the SRC Leaders Group, which consists of the associate deans of research (or equivalent) who meet regularly to gather input and offer advice to the vice-president, research and innovation regarding strategies for enhancing SRC activity at Ryerson. The SRC Leaders Group is an active forum for exchanging information and discussing SRC activity issues and strategic planning. Its efforts support the progress of the Strategic Research Plan.

Each year, the OVPRI compiles an annual report that articulates achievements and key actions to deliver on the Strategic Research Plan. The annual report describes progress on:

- Supporting SRC excellence and increasing funding success;
- Expanding research collaborations and partnerships;
- Amplifying SRC impact, knowledge mobilization and transfer; and
- Strengthening SRC supports and systems.

## Strategic Research Plan Creation and Approval Process

### Planning and Approval Process

The 2020-2025 Strategic Research Plan was developed through an iterative consultation process under the leadership of the OVPRI and guided by a Steering Committee with representation from each faculty and the student body. The broader university community was engaged through a series of town halls and the plan was approved via Ryerson's collegial governance framework. The Strategic Research Plan is aligned with the university's Academic Plan.





## Canada Research Chair Allocation and Management

The allocation and management of Ryerson's CRCs is overseen by the Executive Committee for CRC Planning. Chaired by the vice-president, research and innovation, additional members include the associate vice-president, research and innovation; the provost and vice-president, academic; the vice-president, equity and community inclusion; the assistant vice-president, international; the vice-provost and dean, graduate studies; and a Ryerson University faculty member with an established research track record. The vice-provost, faculty affairs, is an ex officio member of the Committee. This Committee reports to the president of the university.

The Committee is responsible for all policies and processes relating to the management of Ryerson's CRC allocations, including strategic decisions, renewal reviews, and allocation requests. The Committee also oversees the implementation of Ryerson's Equity, Diversity, and Inclusion (EDI) Action Plan and equity targets in the CRC process.

### Planned Allocation

As of fall 2018 and inclusive of the two new Tier 2 CRCs, Ryerson has an allocation of 23 Chairs: three Tier 1s and 20 Tier 2s, consisting of two CIHR Tier 1s; two CIHR Tier 2s; 12 NSERC Tier 2s; one SSHRC Tier 1; and six SSHRC Tier 2s. This breakdown includes two SSHRC Tier 2 chairs resulting from a flexible option to split one SSHRC Tier 1 into two SSHRC Tier 2 Chairs and an agency change from NSERC to CIHR.

Research Theme	Current Allocation	Pending Allocation	Planned Allocation
Urban Innovation		1	1
Justice, Equity & Society	1	2	
Culture & Creativity	2		1
Work, Skills, Industry			1
Health & Well-Being	5	1	
Technology & Intelligent Systems	7	1	



## Achieving Equity, Diversity, Access, and Inclusion

As a signatory to the Dimensions Charter and a selected Dimensions pilot institution, Ryerson is deeply committed to fostering research excellence, innovation, and creativity across all disciplines through increased equity, diversity, and inclusion.

Ryerson's EDI Action Plan, *Leading Research through Diversity*, reflects the university's core values and forms the basis for our commitment to going beyond the minimum CRC compliance requirements. Our aspirational goal is to have our faculty and staff reflect our diverse student body and community, and this is also the goal for all CRC appointments.

Commitment means that Ryerson recognizes intersectionality and intentionally incorporates equity, diversity, and inclusion into each step of the CRC hiring process. This refers to the language used in position descriptions, posting hiring advertisements widely and appropriately, unconscious bias training for hiring committees, and monitoring progress in achieving our EDI goals.

As stated in our EDI Action Plan for Canada Research Chairs, CRCs “are role models and supervisors for future researchers, colleagues who collaborate to build a community of innovation, and scholars who generate new knowledge that can have a substantial impact on lives and inspire social change.” Therefore, it is critical that CRCs have a demonstrated commitment to uphold the values of equity, diversity, and inclusion in their work. For example, in response to the Calls to Action of the Truth and Reconciliation Commission, Ryerson University will seek CRCs who:

- Incorporate Indigenous knowledges and perspectives in their SRC;
- Work collaboratively with Indigenous communities and/or scholars; and
- Recruit Indigenous graduate students and postdoctoral fellows as members of their teams.

**RYERSON IS DEEPLY COMMITTED TO  
FOSTERING RESEARCH EXCELLENCE,  
INNOVATION AND CREATIVITY  
ACROSS ALL DISCIPLINES THROUGH  
INCREASED EQUITY, DIVERSITY,  
AND INCLUSION.**



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[ryerson.ca/research/publications](https://ryerson.ca/research/publications)

**As a globally connected city  
university, we believe that  
inclusive and collaborative  
approaches are essential  
to great research. Ryerson is  
committed to cooperation  
and partnerships with diverse  
communities, industry,  
stakeholders, and government.**

**Steven N. Liss**

Vice-President Research and Innovation,  
Ryerson University