

## **Ryerson: A Hub for World-Leading Researchers Working to Solve Complex Real-World Problems**

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.

Ryerson leverages its historical mandate to conduct Scholarly, Research and Creative (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.

## **Guiding Principles – Equity, Diversity, Inclusion, and Access**

Foundational to SRC activity at Ryerson are the principles of equity, diversity, inclusion (EDI), 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 EDI 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.

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 EDI.

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 Canada Research Chair (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 EDI 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 *Equity, Diversity and Inclusion 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 EDI 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.

## 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.

- Urban Innovation
- Justice, Equity & Society
- Culture & Creativity
- Work, Skills, Industry
- Health & Well-Being
- 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.

### 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 their 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.

### 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 lifelong 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.

### **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.

### **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 below 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.

### **1. 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.

### **2. 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.

### **3. 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.

### **4. 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.

### **5. 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, has increased capacity with the new Canada Excellence Research Chair in Migration and Integration. Together, they set the course for further opportunities for growth and international scope.

### **6. 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.

### **7. 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.

## 8. 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.

### Measuring Success

Agreed-upon measures of progress are essential for operational transparency. These measures facilitate the Office of the Vice-President, Research and Innovation’s (OVPRI) 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.

### Planning Approval and Review 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.

Progress on the Strategic Research Plan will be reported through the Senate SRC Activity Committee. Each year, the OVPRI compiles an annual report that articulates achievements and key actions to deliver on the Strategic Research Plan.

### Canada Research Chair Allocation and Management

The allocation and management of Ryerson’s CRCs is overseen by the Executive Committee for CRC Planning. 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	