RYERSON UNIVERSITY STRATEGIC RESEARCH PLAN SUMMARY 2014-2017

Updated October 2015

A. MAJOR OBJECTIVES OF THE PLAN

Ryerson University's Strategic Research Plan seeks to:

- Increase research excellence, quality and participation through support to all researchers at all stages.
- Expand Scholarly Research and Creative (SRC) partnerships and sponsored research with industry, government and community organizations, as well as other academic institutions – locally, nationally, and internationally – to drive innovation and increase socio-economic impacts.
- Create opportunities for students (HQP, applied research, internships, seed funding) and drive the culture of innovation.
- Strengthen collaboration and cross-disciplinary research themes.
- More focused and deeper internationalization.
- Support increased knowledge dissemination through traditional and non-traditional channels, and publicize the SRC achievements of Ryerson faculty and students to further build reputation and attract high quality students, faculty, and partners.
- Streamline administrative structures, processes, and resources to strengthen Ryerson's SRC culture.
- Build performance metrics and accountability frameworks.

B. STRATEGIC RESEARCH AREAS

Digital Media & Technology

Digital media has never been more important to Canada's economy and society: generating new products and services, creating jobs, enhancing productivity, and improving accessibility. As digital technologies become increasingly integrated into our everyday lives, building a strong digital media sector will be central to citizen engagement and quality of life.

Ryerson is building high-performance infrastructure, fostering the development of digitally enabled products and services, and promoting the adoption of digital technology across sectors. Our industry-oriented approach to research is exemplified by our world-renowned research and commercialization centres targeting this theme, including the DMZ, the top-ranked university incubator in Canada and fifth in the world.

Ryerson faculty are also at the leading edge of media convergence. New media research looks at the impact of interactivity on traditional approaches to content, creative processes, information delivery, learning, and ownership. Ryerson's multidisciplinary SRC activities probe such relationships as technological innovation and creativity, technological change, and the social impact of new technologies.

Areas of SRC activities in Digital Media & Technology at Ryerson include but are not limited to: big data and information; emerging computing and communication technologies; accessibility; 3D printing and advanced manufacturing; and content creation.

Energy & Sustainability

The health of our planet is a responsibility that we all share. To meet the challenges posed by environmental degradation, Canada must develop sustainable institutions, practices, and technologies. There are rich opportunities for researchers in diverse areas as policy and management, pure sciences, engineering, and architecture to work together on creative solutions to the impacts of human development on the natural world.

Ryerson is bringing together experts from industry, academia, and the public sector to pioneer next-generation energy and sustainability solutions. Our faculty are making important strides toward realizing a sustainable future, from the creation of innovative tools that advance urban agriculture and energy storage, to building greener homes and intelligent transportation systems, to promoting the conservation of our natural resources through policy development and regulation.

Areas of SRC activities in Energy & Sustainability at Ryerson include but are not limited to: Infrastructure; policy and regulation; sustainable technologies; and sustainable practices.

Health & Well Being

As Canada's public healthcare system copes with the country's aging population, health promotion and preventative medicine will be critical to maintaining a productive society and improving quality of life.

The health and well being of individuals and their communities is the central mandate of several professional schools at Ryerson. Our multi-disciplinary and multi-sectoral research in this theme applies a comprehensive model that extends from the health and wellness of the individual to the idea of collective health and well being. This includes the study of the physical, social, and economic determinants of the healthy city, which encompasses structures and processes for citizen participation.

This strategic area can be characterized by the interplay of a diverse range of disciplines that encompass the physical, psychological, and social well being of individuals and communities, and Ryerson is ideally suited for a more prominent role in new models of health education and research, including the emerging concept of the academic health sciences network. Ryerson's students and faculty also focus on improving access to healthcare for underserviced groups, on improving efficiency and effectiveness, and on promoting inclusion to enhance well being.

Areas of SRC activities in Health & Well Being at Ryerson include but are not limited to: Prevention; detection and diagnosis; therapies and treatments; and accessible, patient-centered systems and services.

Technological & Industrial Innovation

New technological developments are rapidly being adopted in sectors that include manufacturing, robotics, construction, and more. These developments will be transformative, offering a new level of efficiency, flexibility, and responsiveness. Ryerson's focus on innovation in applied science positions us to make important contributions to these and other emerging industries, including those based on information management, medical and environmental technologies, novel chemical processes and materials, and micro-technologies, which will form the basis of the 21st century economy.

Our faculty and students look beyond the technical side of innovation to consider the human-oriented aspects of industry and technology. Through collaborative research with both established organizations and start-up companies, Ryerson is helping to streamline design, engineering, production, and maintenance to create a strong technological and industrial ecosystem in Canada.

Areas of SRC activities in Technological & Industrial Innovation at Ryerson include but are not limited to: design methods and applications; infrastructure; human factors; and advanced manufacturing.

City Building & Social Justice
Human rights, equity, fairness, and a sustainable future are the foundation of Canadian values. Toronto, as one of the world's most diverse cities, is an ideal place to pioneer new approaches to making these values a reality.

To build smart cities and just societies, Ryerson's faculty and students are engaging with local and global communities to develop effective collaborations that advance intelligent infrastructure development and shape thought, policy, politics, and practice across a range of social issues. In doing so, they are addressing a variety of globally relevant themes consistent with the United Nations' Sustainable Development Goals.

Ryerson University is Canada's first Changemaker Campus, designated by Ashoka, a global community of action that works to increase the impact of social ventures, from student enterprise projects to research partnerships and community engagement.

Areas of SRC activities in City Building & Social Justice at Ryerson include but are not limited to: community services; social policy; systems and planning; diversity and inclusion; and community building.

Design, Culture & Creative Industries
Art and culture expand the ways that we think about the world and our places in it, enriching our lives and helping us arrive at creative solutions to real world problems.

Ryerson attracts talented students and faculty who often blur the line between conventional research and creative practice, working as industry professionals who not only study art and culture but also produce it. Drawing from our diverse urban, academic and multicultural surroundings, our community is combining traditional practices with new technologies to drive innovation in design and the culture industries. Notably, our students and faculty are applying arts and culture to the emerging model of social entrepreneurship, exploring how SRC activity under this theme can be leveraged to generate societal change.

Areas of SRC activities in Design, Culture & Creative Industries at Ryerson include but are not limited to: cultural creation; cultural heritage; professional communications; digital humanities; and social impact.

Management, Entrepreneurship, & Competitiveness
To ensure the future of economic prosperity in Canada, SRC activities at Ryerson focus on promoting the entrepreneurial mindset as well as new models of leadership and management, and the study of organizational effectiveness and productivity.

As an Ashoka Changemaker Campus, Ryerson also emphasizes the integration of business and entrepreneurship into the pursuit of socially relevant goals, in alignment with our City Building & Social Justice theme, increasing the impact of social ventures such as student enterprise projects.

Areas of SRC activities in Management, Entrepreneurship, & Competitiveness at Ryerson include but are not limited to: entrepreneurship; business and immigration; management; big data and information; and social innovation.

Teaching & Learning for the New Economy
A stronger connection between teaching and research is central to the long-term success of students and universities. We are advancing the development of a meaningful and practical body of knowledge about student learning and teaching effectiveness in higher education, particularly in such areas as life-long learning and strategic retraining.

Ryerson's hands-on learning incorporates research and collaboration with external partners into the educational experience. Our internationally renowned Zone Model is leading the development and implementation of best practices for incubating start-up enterprises led by students and faculty. We encourage experiential learning and research training abroad through internships, and placements.

Areas of SRC activities in Teaching & Learning for the New Economy at Ryerson include but are not limited to: diversity and inclusion; learning technologies; and zone and experiential learning.

C. ACHIEVING GENDER BALANCE

Ryerson University has and continues to make every effort to recruit qualified women for CRCs (as well as for other faculty positions). Specific steps include:

- Broad advertising of all CRC positions.
- Utilization of existing networks to identify qualified women candidates.
- University policies that emphasize the need for achieving gender equity.
- Development of training and orientation to hiring committees regarding the importance of gender equity and strategies for ensuring a fair hiring process.
- Ensuring that the most qualified women candidates are included in the "short list".
- Ensuring that some CRC positions have been allocated to theme areas where there are likely to be more qualified women candidates.

D. ALLOCATION OF CRCS BY STRATEGIC RESEARCH AREA

Deployment of open (new and newly freed) Chairs for time period covered by this Strategic Research Plan: three Tier 1 CRCs* and four Tier 2 CRCs.

Research Theme	2015	2016
Digital Media and Technology	**NSERC Tier 2**	
Technological and Industrial Innovation	**NSERC Tier 2**	**NSERC Tier 1**
Management, Entrepreneurship and Competiveness	**NSERC Tier 2**	
Energy and Sustainability		
Design, Culture and Creative Industries		
Teaching and Learning for the New Economy		
Health and Well Being	**NSERC Tier 2**	**CIHR Tier 1**
City Building and Social Justice		

*SSHRC Tier 1 thematic area currently under discussion.

E. INSTITUTIONAL SUPPORT

Over the past 5 years, Ryerson has and will continue to substantially grow and support its research infrastructure and training in the areas noted above. This is reflected in the investment in matching funds for CFI, NSERC Strategic Network Grants Program, SSHRC Partnership Grants, funded research projects, MRI Early Researcher Award winners in these (and other) areas, and the commitment of university funds to the development of graduate programs in related areas.

Research support is provided to new and existing faculty through start-up grants, teaching release time, seed grants, student research assistantships, funding for research centres, and grants for conference travel.

We have substantially invested in new spaces to conduct research and innovation in digital media and technology, health and well being, and technological innovation, including iBEST at the St. Michael's Keenan Research Centre, Ryerson Centre for Cloud and Context Aware Computing (RC4) at 10 Dundas, and the Advanced Manufacturing, Design and 3D Printing lab at Bell Trinity Square.

F. PARTNERSHIPS AND OPPORTUNITIES

Ryerson has developed effective research partnerships with academic, industry, community and government organizations. Examples of partnerships include: **Ryerson's Centre for Urban Energy (CUE)** – an academic-industry partnership that is exploring and developing sustainable solutions to urban energy challenges; **Ryerson Centre for Cloud and Context-Aware Computing (RC4)** – a research and commercialization centre acting as a gateway for creating collaborative partnerships that can help position Ontario-based companies as leaders in this emerging global industry. Other successes include the **Global Diversity Network**, **Transmedia Centre**, the **City Building Institute**, the **Ryerson Centre for Immigration and Settlement**, **Ryerson Urban Water Centre**, as well as current involvement in Networks of Centres of Excellence.

G. MEASURING SUCCESS IN ATTAINING MAJOR OBJECTIVES

The impact of the CRC and CFI program will be assessed on an ongoing basis. There will be an annual review by Deans, the Provost, and the Vice President, Research and Innovation. Specific indicators of success include:

- Level and intensity of research funding.
- Number and quality of peer reviewed publications, and exhibits as appropriate to discipline.
- Number of collaborations and partnerships with industry, government and non-governmental organizations.
- Ability to attract and retain leading researchers as candidates for faculty positions.
- Quality of our graduate and post-doctoral applicants.
- Research performance appropriate to different types of SRC activity and disciplines.
- Undergraduate student exposure to and participation in research projects.
- Number of national and international awards and prizes received by faculty, including members and scholars in the Royal Society of Canada.
- Quality of international partnerships as well as number of faculty and student exchanges and collaborations.
- Impact of research in driving innovation, including new technologies, patent applications, licenses products and services, and other forms of knowledge transfer and their adoption.
- Visibility and reputation measured by traditional and social media coverage, reputational surveys etc.

H. PLANNING PROCESS

The President of Ryerson, in consultation with the Executive Group, which includes among others, the Vice President, Research and Innovation as well as the Provost and the Deans, is responsible for allocating Chairs to the faculties in line with Ryerson's thematic priorities. Factors that influence decisions regarding allocation include: existing research activity in each of the defined areas, the relationship of the theme to existing and planned graduate programming, and the strategic goals of the university as these relate to specific programs and Faculties.