

STRATEGIC PLAN FOR SCHOLARLY, RESEARCH AND CREATIVE ACTIVITY 2010-2013

INTRODUCTION

Ryerson University is a diverse, urban university with all of the opportunities and challenges that come with being located in the heart of Canada's largest city. It is connected in real ways to the business, residential and civic community that surrounds it and has made great progress in improving its physical presence and realizing its vision as a "City Builder".

Ryerson has a number of unique strengths.

- It is a leader in comprehensive, innovative and professionally-relevant programming, helping to ensure that our scholarly, research and creative activity reflects current realities, needs and opportunities;
- Building on a tradition of excellence as a centre for applied education and research, it is now one of Canada's fastest growing teaching and research institutions, with expertise across a wide range of disciplines; and
- It is committed to enriching society by transferring knowledge and applying research findings quickly and effectively to provide clear economic benefit.

This Strategic Plan envisions how we can leverage these strengths to enhance the outcomes of our scholarly, research and creative activities. It forms an integrated part of the roadmap set out in Ryerson's Academic Plan, *Shaping Our Future*. As part of that plan, our strategic research priorities will harmonize with our academic mission and plans to enhance and support them.

The planned growth of graduate and faculty numbers is bringing new scholarly, research and creative intensity and breadth that is expected of a comprehensive university. Over the past decade, research activity has increased five-fold. In the last year alone, Ryerson's externally funded research increased by 23%. We ranked #1 in publications growth for Canadian

undergraduate universities, with a remarkable 171% increase between 2002 and 2007. With almost \$20 million in research funding, Ryerson now ranks 30th among the top 50 research universities in Canada, a jump of nine positions in the past four years. Over the last three years, our faculty members have contributed enormously to the creative and cultural prosperity of Canada, garnering amongst other recognitions, three Gemini's, an Emmy, and a Governor General's Award.

Two years ago, the Academic Plan for 2008-2013, *Shaping our Future*, made a commitment to reach new levels of excellence and prominence in research. The recent sharp increase in grant and contract activity reflects substantial efforts to fulfill this commitment. During the next three years, we will continue our mission to enhance the research character of the University and continue to build on the momentum that has brought us to this point.

Outlined below are the key priorities and strategies that will guide future decisions for the University's development and growth in scholarly, research and creative activities. Our goals are achievable and measurable. Reaching them will take maximum advantage of our opportunities for discovery and innovation and provide the greatest possible benefits back to society.

KEY DRIVERS

A number of critical internal and external factors were taken into consideration in developing our scholarly, research and creative activity strategy:

Valuing the research mission. Ryerson has made huge strides toward becoming a respected research institution. We must continue to build and integrate the research mission throughout the institution. In particular, research has an important role to play in recruiting and retaining highly qualified faculty. We must also integrate research more fully with teaching, which remains a primary function of the University. The teaching-research relationship is complementary, and we should look for ways in which research can further enhance our instructional mission. Finally, we must ensure that organizational supports are aligned with research needs.

Promoting our successes. It is critical that we increase awareness among several audiences – government funding bodies, industry, other universities, research institutions, current and prospective faculty and students, and the public at large – about our research initiatives and successes. This will help attract the best students and faculty, build better research partnerships and help draw research funding.

New opportunities. Researchers are increasingly reaching across disciplines, institutions and borders to develop highly innovative products and solutions. These often combine expertise from diverse areas, with each team needing a balance of basic and applied research.

Priorities of public funding bodies. Both the federal and provincial governments have sharpened the focus of their funding strategies to support targeted areas of research strength and improve knowledge transfer, with the explicit goal of boosting the social value and economic benefits of their investments.

There are clear linkages amongst these drivers, which is why it is important to develop a coordinated strategy and integrated approach at an institutional level, especially in such areas as identifying areas of strength, attracting faculty and integrating the teaching and research missions.

PRIORITY OBJECTIVES

From the drivers, we have developed the following high-level priorities that our SRC strategy must address:

- *Enhance existing areas of research strength and expertise, and create new research opportunities with high impact in strategic emerging areas of scholarly, research and creative activity*
- *Promote Ryerson research faculty and institutional reputation regionally, nationally and internationally*
- *Leverage collaborative research partnerships to broaden and deepen our research efforts and enhance our profile*
- *Stimulate novel, multidisciplinary research interactions across institutions and disciplines that will contribute to the development of innovative research and academic programmes*
- *Support an entrepreneurial research culture to facilitate better and faster knowledge transfer*
- *Communicate our successes*
- *Invest in our undergraduate students by providing scholarly, research and creative training opportunities*
- *Capitalize on the most effective and efficient use of research infrastructure resources*

STRATEGIES

1. Defining, Leveraging and Promoting our Strengths in SRC

We have identified the following clusters of research activity as offering Ryerson high potential for enhancing its scholarly, research and creative activities. These clusters align in many cases with identified research priorities of the federal and provincial governments. This is key, because as noted those governments have both, in recent years, developed strategies based on a sharper focus on areas of strength. The clusters may also stimulate thinking about new, multidisciplinary academic programs and research both within Ryerson and in partnership with other institutions or organizations. Because they also reflect areas in which Ryerson can build on its unique strengths, they may be particularly helpful in developing and enriching such partnerships, whether at the regional, provincial, national or global level.

1. Digital Media, Communication and Information Technology. Ryerson faculty are at the leading edge of media convergence. New media research looks at the impact of interactivity and other capabilities on traditional approaches to content, creative processes, information delivery, learning and ownership. Multidisciplinary research probes such relationships as technological innovation and creativity, and technological change and social impact. The field encompasses the creative convergence of digital arts, humanities, science, technology and business for human expression, communication, social interaction and education. Interdisciplinary studies include media and society, the analysis of media content and social structure, and the study of the media as agents of socialization. In fields such as journalism and broadcasting, research on cross-cultural communication includes culture and information presentation, technology and infrastructure, internationalization and Internet communication.
2. Energy, Sustainability and the Environment. If we are to continue to thrive as a society – and even, some would argue, a species – we must learn to balance the complex interactions between development and the environment, so that we can achieve ecological stability and sustainability. This cluster brings together such fields as alternative and conventional energy production, demands on water and other natural resources, climate, materials, built environment and public policy. Ryerson has a strong focus on environmental sustainability and management as well as social policy. New graduate programs focus on such research areas as ecotoxicology, trace metal biotechnology, microbial ecology and environmental chemistry. There are rich opportunities for researchers in such seemingly diverse areas as policy and management, pure sciences, engineering and architecture to work together on creative solutions to the impact of human development on the natural world.
3. Health and Well Being. The health and well-being of individuals and their communities is the central mandate of several schools at Ryerson. Multi-disciplinary and multi-sectoral research applies to a comprehensive model that extends from the health and wellness of the individual to the collective level and includes the study of the physical, social and economic

determinants of the healthy city, including structures and processes for citizen participation. This strategic area can be characterized by the interplay of the experimental sciences, engineering, the affiliated health sciences, social sciences, and humanities and the knowledge and methods each brings to address issues of health, stress and well-being. Ryerson's role in psychology, nursing, midwifery, nutrition and other allied health care professionals, and its cross-disciplinary programs in these areas, makes it 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.

4. Civil Society and Cultural Prosperity. Across its Faculties, Ryerson is uniquely positioned to leverage and stimulate creative expression, innovation and vision, drawing on its diverse urban, academic and multicultural surroundings. High levels of social cohesion, trust, democratic participation and citizenship, as well as interest in arts, culture and civic values are some preconditions of a civil society. Ryerson faculty are contributing to an emerging body of research related to factors that aid or impede the creation of a civil society and its associated social policy. Ryerson's tradition of scholarship includes historical studies of culture and cultural institutions, communication studies, ethnoracial diversity, economic inequality, employment policies, food security, public health care policy, family studies, research on aging and the elderly, and accessibility. This area also represents the contribution of the social sciences, humanities, media, and fine arts to economic prosperity and the civil society. These strengths also help our faculty to understand and promote the emerging model of social entrepreneurship.
5. Technological and Industrial Innovation. Technological innovation and industrial development are critical to Ryerson's research mandate. Ryerson has traditionally had a strong foundation of researchers contributing to technological innovation and will build on existing strengths in such areas as in aerospace and robotics, power systems, electronics, medical physics, biomedical engineering, advanced materials, manufacturing and processing and safety engineering. New industries based on information management, medical and environmental technologies, novel chemical processes and materials and microtechnology will form the basis of the 21st century economy, and Ryerson's focus will be on innovations in applied science.
6. Management, Competitiveness and Entrepreneurship. This area comprises the study of planning, organizing, resourcing, leading and controlling an organization, starting new organizations, revitalizing mature organizations and managing for best performance. The Centre for the Study of Commercial Activity (CSCA) focuses on the retail sector and investigates trends such as e-commerce, big box stores and power centres. Hospitality and tourism research focuses on the interface between organizations and their clients. The Centre for Voluntary Sector Studies conducts research on the organizational and structural

aspects of the sector, with emphasis on collaborations and partnerships with government and the private sector.

7. Learning and Teaching Effectiveness in Education, Training and Development. As a leader in career-focused and applied university education, Ryerson engages in a wide range of research activities in this area. We are leaders in developing 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. Our close ties to surrounding communities and high proportion of students already in the workforce also help to ensure the validity of our findings. The Centre for Learning Technologies develops new technologies and assesses their effectiveness in enhancing the accessibility of Canadians with disabilities to social and economic opportunities and in enhancing the capacity of organizations to provide effective services.

Having identified these clusters based on Ryerson's recognized strengths, we will analyze where we are most successful in our existing research efforts and why. This will both help us leverage what we have learned from our successes and also identify those areas that need more support.

Such information will be invaluable in:

- Telling the public, funders and our internal audiences more about the relevance and strengths of our research activities;
- Enabling fast, accurate, and institutionally-coordinated responses to provincial, federal and international calls for proposals for research and commercialization funding;
- Reviewing and reinforcing existing industry and public sector relationships, as well as identifying and taking advantage of new partnership opportunities;
- Developing a framework to identify and define interdisciplinary research themes and programmes in emerging areas, and resource and implement them as needed; and
- Informing our strategies for potential research and commercialization activities and partnerships regionally, nationally and internationally.

This information will be particularly helpful if we look at it not just in terms of success in attracting research funding in general, but also alignment with existing and emerging research priorities at the provincial and federal levels. Identifying points of convergence between our research strengths, Ontario's research priorities and the federal government's science and technology strategy priorities is key to that effort, but should not restrain in any way, the research thrust or capacity of individuals.

Actions

The Office of the Vice-President of Research and Innovation will:

- Work collaboratively with the Provost and Deans to use the information to help build and strengthen the identified clusters, facilitate individual research projects to seek wide collaborations based on the identified clusters, and promote their value in both internal and external communications.
- Create a framework for Centres and Institutes and identify funding opportunities
- Explore joint initiatives with University Advancement to seek endowments for research chairs in key areas.
- Work with granting councils, research foundations and other national and international external funding agencies to identify potential partnerships and other new strategic, focused research initiatives.
- Through the scholarly, research and creative activity Enhancement Program, create internal programs to encourage interdisciplinary and/or international research initiatives in areas of existing strength or emerging importance.
- Ensure a research environment that embodies a culture of service, and an infrastructure that facilitates the research effort

2. Fostering a Research Environment

Student engagement and success is central to Ryerson's mission and identity, and research has a very important role to play in the education of students at all levels. Undergraduate education is enhanced through participation in research, and at the graduate level participating in research enables students to master current knowledge and produce new knowledge. Creating opportunities for our students to engage in meaningful research, scholarly and creative activity will help to foster an environment in which they are engaged in their own education and development.

Ryerson's mission is reflected in innovative, professionally-relevant programs and distinctive learning and teaching, built on the creative integration of theoretical and applied knowledge. Research efforts can enrich the subject matter to be taught and provide an opportunity for faculty to share the creative process with students to add further meaning and purpose to research endeavours.

We also recognize the need to provide faculty with the administrative services necessary to fulfill the research mission. As scholarly, research and creative activity increases, the

infrastructure supporting it must respond appropriately. The Office of the Vice President, Research and Innovation is committed to enhancing Ryerson's research environment within a culture of research integrity and accountability. To that end, an external review of the Portfolio to determine how it can better serve the needs of our community has recently been undertaken. We will use the findings in support of our goal of providing the environment necessary to move faculty research and innovation forward within a service-oriented culture.

Actions

The Office of the Vice-President of Research and Innovation will:

- Identify new initiatives to expand the intellectual engagement of undergraduate and graduate students in research opportunities.
- Continue to implement major revisions to our organizational structure based on the recent external review.

3) Building a Research Reputation

As one of Canada's fastest growing teaching and research institutions, the reputation of Ryerson University rests upon, among other things, the strength of its faculty. It is important to ensure that outstanding faculty members receive the recognition they deserve, through a coordinated nomination process for national and international research awards, prizes and honours.

Through the Research website, we are already communicating to our internal and external constituents the quality, breadth and value of SRC activity at Ryerson. Building on this, greater public advocacy and a communications strategy to strengthen relations with government, the community at large and industrial stakeholders will enhance Ryerson's profile and reputation and increase our ability to attract research funds.

Actions

The Office of the Vice-President of Research and Innovation will:

- Establish an institution-wide research awards strategy for the University to maximize our success at garnering prestigious, external, national and international honours, awards and fellowships
- Recognize and celebrate our successful faculty
- Create an effective, up-to-date, and user-friendly website that communicates the successful scholarly, research and creative activity within the University to external stakeholders.

- Liaise with all levels of the University to ensure that the Office of the Vice President, Research is communicating information in an appropriate, useful and timely manner.

4. Facilitating Knowledge Transfer

Related to their focus on achieving maximum returns on public investments, both the federal and Ontario governments have developed research agendas linked closely to knowledge and technology transfer and stronger commitment to commercialization. Ontario's research and innovation strategy notes that these factors are critical to creating and sustaining the next generation of high-knowledge, high-value jobs to ensure ongoing prosperity and competitiveness.

The federal science and technology strategy stresses the key role of translating knowledge into commercial applications for economic growth and improved quality of life. In this context, research proposals may be judged not only on a peer review assessment of the scientific excellence of the proposal, but also on strategic value, including potential industrial application, and potential for economic and social benefit.

Government priorities align well with Ryerson's commitment, as part of our social mission, to enriching society with the results of our research through application and commercialization contributing to clear social and economic benefits.

Actions

- Develop and carry out a focused and coordinated strategy to communicate and promote Ryerson's research character.
- Review the structure of the office of Innovation and Commercialization to support researchers to maximize the benefits of knowledge transfer, commercialization of research and the management of intellectual property issues.

NEXT STEPS:

This SRC Strategic Plan will help us to allocate resources on the basis of identified priorities and goals. Resource allocation decisions must also be made in the context of how quickly the institution wants to achieve the various actions to which we have committed. These factors will enable us to develop appropriate budgets and timetables for meeting our goals.

Setting out these detailed goals also establishes a basis for measuring success. We will mark our progress by such measures as:

- our ability to attract leading researchers as candidates for faculty positions
- support for new faculty
- the quality of our graduate and post-doctoral applicants
- research performance appropriate to different types of SRC activity
- undergraduate student exposure to and participation in research projects
- new partnerships, invited lectures, new disclosures, patent applications, licensed technologies and other forms of knowledge transfer
- number of national and international awards and prizes received by faculty
- level of research funding
- number of industrial contracts
- visibility and impact of the research

Recognizing that not all scholarly, research and creative activity is tied to, nor can it be measured by, traditional performance indicators, the Office of the VPRI will establish a committee to evaluate and recommend performance indicators for other types of scholarship and creative activity, including performing arts, fine arts, design and exhibitions.

The strategies set out here represent the role that the Strategic Plan for scholarly, research and creative activity will play in creating a “virtuous circle” for Ryerson by helping to attract strong faculty, working with them to identify and act on opportunities, giving them the right tools and recognition, and promoting our successes. Together, this cycle of actions will continue to build Ryerson’s research reputation.