

The University of Regina
Strategic Research Plan for the Canada Research Chair (CRC) Program and the
Canadian Foundation for Innovation (CFI), 2010 – 2015

The University of Regina is an institution with a century of strength in teaching, research and community service. The University of Regina has transformed from a relatively small, predominantly undergraduate teaching university in 1974 to a mid-size comprehensive institution in 2010 that actively fosters excellence in its three fundamental pillars - research, teaching, and public service. The research mission of the University of Regina is to use the exceptional talents of research scholars - professors and students - to extend the boundaries of human knowledge and to use these discoveries to understand and resolve present and future challenges to humanity and the environment.

To do this, the University of Regina will:

- Attract, nurture, retain, and promote outstanding research scholars;
- Recruit the best and brightest graduate students and post doctoral fellows;
- Lead in undergraduate education through inspired application of research;
- Provide exceptional capacity and opportunities for individuals and teams to develop excellence in pure and applied research;
- Foster commercialisation of applied research endeavours to the benefit of Saskatchewan, Canadian, and Global citizenry;
- Demonstrate research achievements for the benefit of society through diverse academic and non-traditional means of communication.

OBJECTIVES OF CFI/CRC RESEARCH STRATEGY

In accordance with the Canada Research Chairs Program objectives, the overall intent of our research plan is to augment research capacity to foster research excellence in select areas and develop world-class centres of research excellence. The University is using its Chairs to engage in world-class research activities and provide strong leadership in developing collaborative and interdisciplinary research partnerships and initiatives. The University of Regina has established a President's Chairs for Academic Excellence to further recognize and support research and scholarly excellence at the University of Regina.

RESEARCH EMPHASES

The University of Regina focuses its teaching, research and service on areas in which it has established or potential strengths and interests. These thematic emphases are intended to facilitate the development of creative new research and academic programs and partnerships, both inside and outside the University. The three signature themes and eight sub-themes are:

Sustainable Development

- **Energy and Natural Resources.** The University of Regina has long understood that both pure research and applied research are driving forces behind sustainable societal and economic development. There is a clear recognition that the availability of energy (including both non-renewable, e.g., oil and uranium, and renewable, e.g., geothermal and wind) geological materials (potash, gold, and diamond), water, and agricultural resources are fundamental to that growth. The University of Regina has and is making significant contributions to develop ways to lessen human impact and increase social responsibility with respect to climate, water, and land in energy production, industrial technologies, water management, and agricultural practices. We specialize in solutions focused on carbon capture and storage, risk assessment of geological storage of CO₂, enhanced oil recovery and recovery of minerals from mine waste, innovative mining methods for metals, minerals, and oil shales, and energy-related policy options. It has been supported through initiatives including:
 - Petroleum Technology Research Centre and the International Test Centre for CO₂ Capture;
 - Hydrogen Production Pilot Plant;

- Greenhouse Gas Technology Centre;
 - Regina's Communities of Tomorrow initiative.
- **Environment.** The University of Regina is deeply committed to research that sustains and enhances the quality of the natural environment (air, water, and soil), and increases our understanding of the sources, movement, and transformations of contaminants in the environment. We are also committed to research that will lead to the reduction of the negative impact of industrialization (traffic noise, hazardous wastes, and infrastructure aging). Building on decades of environmental research at the University of Regina spanning various faculties and disciplines, research scholars have advanced the knowledge of both natural and artificial systems by addressing environmental issues such as climate change, air and water quality, biodiversity, and natural hazards. Our researchers specialize in solutions focused on conserving renewable resources, forecasting weather and environmental change, advancing process knowledge required for management and control of pollutants in urban, agricultural, and rural settings, industrial waste management, and sustainability of urban infrastructure. Environment initiatives are supported at the University by centres and institutes such as the Canadian Plains Research Centre and Institute for Energy, Environment and Sustainable Communities. Internationally, our research has provided industry and government organizations with innovative solutions to address several environmental challenges the global community is facing. Some recent initiatives include:
 - The CFI funded Environmental Quality Analysis Laboratory;
 - Rough Sets with Risk Assessment through Grid Computing - a key component to the Weyburn Project as well as other CO2 monitoring initiatives related to the environment;
 - Geomodeling and GIS Research Laboratory;
 - Prairie Adaptation Research Collaborative.

Human Development

- **Health.** The University of Regina's approach to health research is a multi-disciplinary one, drawing on the expertise of researchers in different faculties to study the impact of health determinants on various populations. At the same time, research continues into the preventative aspects of health care, with the study and development of policy and program interventions designed to improve health determinants and equitable access to health services. Our researchers explore many aspects of health and are conducting leading-edge studies in aging, ethics, long-term care, pain assessment and management, cancer, population and aboriginal health, rural and northern health, and studies on the overall health and wellness of our communities. In partnership with the First Nations University of Canada and the University of Saskatchewan, our research scholars are advancing aboriginal health studies of chronic diseases, nutrition and lifestyle, indigenous healing, health delivery, and environmental health.

Our Health emphasis builds on the activities of several research institutes and academic units including: The Centre on Aging, Saskatchewan Population Health Evaluation Research Unit (SPHERU), Canadian Plains Research Center, Seniors' Education Centre, and the Social Policy Research Unit. The new Centre for Kinesiology, Health and Sport reflects the increasing health commitment of the University and houses new research laboratories including the Anxiety and Illness Behaviours Laboratory and the Traumatic Stress Group. Our partnership with First Nations University of Canada brings opportunities for collaborative work on Aboriginal Health through SPHERU and the Indigenous Peoples' Health Research Centre (IPHRC).

- **Human Justice, Safety, and Security.** This province has a history of progressive justice initiatives and the University of Regina has played a part in advancing justice through the endorsement and creation of justice centres, departments, research units, and schools such as the Saskatchewan Justice Institute. The University of Regina researchers offer expertise on corporate and fiscal policy, organizational behaviour, contemporary political philosophy and political ideologies, ethics and privacy issues, immigration, human rights, and broad issues of economic, social and political development. The University of Regina partners with a number of policy-forming organizations, including governments, community-based organizations, and social movements

concerned with equality and justice. In the area of legal security, we partner with the Canadian Police Research Centre and the Saskatchewan Police College building on traditional strengths in social policy innovation.

- **Arts, Culture, and Heritage.** Spanning across faculties and departments, research activities in this area involve the study of art, culture, heritage, and applied and practitioner based work. Our culture and heritage scholars are active nationally and internationally in artistic creation, performance, and translation; they are engaged in exploring and understanding languages, historical and cultural beliefs and they undertake related ethnographic studies. Working within specific disciplines and in collaborative and interdisciplinary contexts, scholars merge the practice and study of art and culture with the development of computer-based technology. The Faculty of Fine Arts maintains historic connection with arts organizations such as the MacKenzie and Dunlop Art Galleries. The University interacts with a vibrant arts community including the Regina Symphony Orchestra, Opera Saskatchewan, the Globe Theatre and CBC Radio. Additionally, the presence of the First Nations University of Canada, the Gabriel Dumont Institute and the Institut Français uniquely positions the University to advance cultural research with and about three of the founding peoples of Canada – First Nations, Métis and francophone – and to further define diverse artistic, literary, and cultural heritage.

Knowledge Creation & Discovery

- **Information and Communication.** The University of Regina is an innovator in information and media technology research. This research directly reflects our partnerships with numerous technology R&D organizations and showcases proven strengths in mathematical software and modeling, artificial intelligence, data mining and rough sets, multimedia computing, surround sound, and imaging. Focused on information technology, software engineering, computer science, physics, and interdisciplinary collaboration, the University of Regina is highly versatile, lending itself to innovative projects in a research atmosphere that is rich and varied. Medical research, cognitive science, environmental assessment, data interpretation for the energy industry, digital media, data mining, even electronic entertainment – these are just some of the streams of enquiry that rely heavily on collaboration among researchers and provide an important step in driving the creation and commercialization of new technology. This area has been supported by the high Performance Computing Farm in Sub-Atomic Physics, Institute for Computational Discovery, New Media Studio Laboratory, Rough Music & Audio Digital Interaction Laboratory (aRMADILo), Open Systems Lab, Regina Integrative Cognitive Experimentation Lab, CFI funded Interactive Media and Performance Labs and CFI funded Energy Informatics Laboratory.
- **Pure Discovery-Based Research.** Pure research is carried out to increase our understanding of the basic principles of nature and the human world. The motivation for fundamental research arises from our deep-seated need to understand ourselves, the universe we are in and how it operates, and thus is central to the mission of a university. Fundamental or basic research deals in ideas, principles, concepts, and theories and may or may not result in an immediate practical or commercial benefit. However, in the long term, it forms the basis for the development of new technologies and social advances with direct applications in our daily life which were not originally foreseen. For example, today's computers could not exist without pure research in mathematics and physics, for which there was no known practical application at the time. The University of Regina has established a tradition of excellence in pure research and is committed to continuing this most basic inquisitive endeavour.
- **Community-Based Research.** Community-based research endeavours to foster research opportunities, social responsibility, and civic engagement between the university and its community. Community-based research promotes an exchange of ideas to resolve diverse challenges and social inequities that face our communities - local and global. It is a collaborative partnership between university and community research partners in which diverse methods and disciplines are employed to creatively produce and disseminate knowledge while problem solving through social action. Community-based research is dedicated to facilitating community research needs by matching questions to university-based researchers, hosting goal-setting gatherings, and advising on

research opportunities and processes. It has a long and successful research history at the University of Regina demonstrating the significant impact of research on the community at large.

ALLOCATION OF CHAIRS

The following is a breakdown of the University’s allocation of the Canada Research Chairs. It is important to note that the University must maintain flexibility in its allocation of Canada Research Chairs and the University’s own President’s Chairs for Academic Excellence among the five research thematic emphases to ensure we can take full advantage of emerging opportunities.

Agency	Tier	Area of Institutional Strength
NSERC	Tier 1	Energy, Environment, Information and Communication
NSERC	Tier 1	Energy, Environment, Information and Communication
NSERC	Tier 1	Sustainable Development, Environment
NSERC	Tier 2	Sustainable Development; Environment; Information and Communication
NSERC	Tier 2	Environment; Health
NSERC	Tier 2	Sustainable Development; Environment; Health
NSERC	Tier 2	Information and Communication
SSHRC	Tier 1	Human Justice, Safety and Security
SSHRC	Tier 1	Arts, Culture and Heritage; Health and Environment
SSHRC	Tier 2	Community-based Research; Information and Communication and Arts, Culture and Heritage

INTERNAL VS. EXTERNAL NOMINEES

The University will fill the Chairs on the basis of excellence and "fit" with the University’s strategic plan. Every effort will be made to recruit externally, but highly qualified internal candidates will be selected when appropriate.

GENDER REPRESENTATION

The University of Regina is committed to the principle of gender equity and has implemented procedures to ensure that gender considerations are an integral part of any faculty searches. Two of our four approved Tier 1 chairs are female. Two of our five approved Tier 2 chairs are female. Gender representation is an important criterion in the establishment of all faculty search committees, and Canada Research Chair committees are specifically requested to seek qualified female candidates for inclusion in the candidate pool and report on the number of female candidates interviewed and efforts to secure female candidates. Where appropriate, female candidates at the University are targeted and asked to consider applying for the Chairs.

EVALUATION OF SUCCESS

The University of Regina will use various measures to monitor success in meeting the key objectives of the Strategic Research Plan including evidence of significant increases in research faculty, graduate students and post-doctoral fellows. We will also monitor tri-council and other external research revenues to measure growth in research capacity. We will continue to establish world-class centres of research excellence and expand interdisciplinary links in conjunction with provincial, national and international partners and focus on areas of expertise and strategic interests. We will continue to expand undergraduate and graduate program in areas of research strengths. We will increase national and international research and teaching links and monitor the number of projects supported by international organizations. We will continue to increase the number and quality of scholarly publications, and the number of national and international research and scholarship awards received by faculty and students.

INSTITUTIONAL SUPPORT

The University of Regina is committed to making use of the Canada Research Chairs to augment its research capacity to foster research excellence in select areas. The creation of the President's Chairs for Academic Excellence program is a reflection of the University's commitment to a strong and vibrant research culture. The Province of Saskatchewan is supporting the Canada Research Chair program at the University by matching the first two years of funding for each Chair nomination and matching CFI contributions for the infrastructure component of the Chair program. We will continue to work with the Province to ensure they are aware of our research initiatives and our specific needs for CFI and CRC matching funds. In addition, the Government of Saskatchewan and the Government of Canada through the Department of Western Diversification have provided funding for the development of research infrastructure in support of Energy and Environment and Informatics. The Saskatchewan Health Research Foundation is providing financial support to our Health researchers and research institutes. The University of Regina has established a University Industry Liaison Office to assist in the innovation and commercialization of research, and to support the dissemination efforts resulting from CRC/CFI support.

PLANNING AND APPROVAL PROCESS

The three areas of strategic emphasis have been developed in consultation with the broader academic community including the University Council, Senate and Board of Governors. The development of the University's CRC/CFI research strategy was done in consultation with the Deans' Council, the Council Committee on Research, the Planning and Priorities Committee of Council, and faculty members. The University has signed a Memorandum of Agreement (MOA) on the Canada Research Chairs with the University of Regina Faculty Association.