

**TOGETHER**

peyak aski kikawinaw

**WE ARE STRONGER**

*SERVING THROUGH RESEARCH*



UNIVERSITY OF  
**REGINA**

**STRATEGIC RESEARCH PLAN - 2016-2021**

### Executive Summary

The Strategic Research Plan 2016-21 provides the strategic research direction for the University of Regina. The Strategic Research Plan (SRP) is intended to be aligned with and linked to the University of Regina's Strategic Plan 2015-2020: "*peyak aski kikawinaw Together We Are Stronger*".

Over the next five years, we are committed to the following strategic research objectives<sup>1</sup>:

- *Strengthen support required for students and researchers to deliver high impact outcomes*
- *Advance the profile and awareness of research successes locally, provincially, nationally and internationally*
- *Increase research partnerships and projects with First Nations and Métis people, communities and organizations, including the First Nations University of Canada*
- Develop and implement processes, procedures and tools to help ensure the University's strategic research plan is actualized.
- Increase research revenues.
- Facilitate and support high quality research with dissemination practices including public engagement.

Critical to the University's success are its thematic areas of research priority (strategic research clusters), which the University has identified as a function of their critical mass of researchers, performance (impact<sup>2</sup>) and distinctiveness: Anxiety, Stress & Pain; Digital Future; Integrated Human Health: Equity, Disease & Prevention; Social Justice & Community Safety; and, Water, Environment, & Clean Energy.

Implementation of the SRP 2016-2021 includes the following four main elements:

- SRP communications for University faculty and researchers;
- Annual operational plans to provide more detail on how the vision, mission and strategic objectives will be achieved;
- Development of a comprehensive set of measures of success to track achievement; and,
- Reporting to communicate progress and results to the Board of Governors and the broader University community.

### Introduction – Context and Process

The Strategic Research Plan (SRP) provides the strategic research direction for the University of Regina. The SRP is intended to be aligned with and linked to the vision, mission, values and strategic priorities set out in the University of Regina's Strategic Plan 2015-2020: "*peyak aski kikawinaw Together We Are Stronger*".

The University of Regina Strategic Plan 2015-2020 (UR Plan) identifies three strategic priorities:

- Student success;
- Research impact; and
- Commitment to our communities.

The University also identified two overarching areas of emphasis that thread throughout each priority:

- Indigenization; and

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<sup>1</sup> Content in italics is quoted from the University of Regina's 2015-2020 strategic plan.

<sup>2</sup> Refer to the Measures of Success section on page 8 for a definition of impact.

- Sustainability.

### **Our Research Vision**

The University of Regina endeavours to develop and maintain a supportive and diverse research environment and a culture of excellence for all scholars. Specifically, we intend to be recognized as leaders nationally and internationally in our thematic areas of strength identified in our five research clusters.

### **Overview of the 2016-2021 Strategic Research Planning Process**

In 2016, a 15-person working group led by the Vice-President (Research) representing University-based and Faculty-based Research Centres, graduate students, Council Committee on Research, Indigenization, Strategic Research Clusters and Research Office guided development of the SRP. Input was gathered from faculty, staff, graduate students and other University stakeholders through two rounds of consultation. This valuable input was central to the working group's work in putting together the 2016-2021 SRP.

### **Purpose of the Strategic Research Plan**

The purpose of the SRP is to build on the UR Plan and put into action our mandate to serve our people and our community through our research. Serving the community through creative and free enquiry and the dissemination of the outcomes of our research defines the university. It is our privilege and obligation to be society's hub for the pursuit of knowledge.

We endeavor to do this through research that is meaningful to the academy and responsive to the needs of society.

### **Update on Previous Strategic Research Plan Accomplishments**

Significant progress was made toward achieving all four goals stated in the University's Strategic Research Plan 2010-2015 "Working Together Towards Common Goals: Serving Through Research":

- Accomplishments under the first goal, "Encourage, nurture, promote and sustain excellence in all aspects of research", include:
  - The University of Regina currently leads Canadian comprehensive universities and universities in this province in research impact<sup>3</sup> and international research collaboration.<sup>4</sup>
  - From 2010 to 2016, graduate student enrolments have increased 23%.
- Accomplishments under the second goal, "Foster and support signature themes of research that demonstrated and sustained excellence", include:
  - Based upon research impact, critical mass of researchers, distinctiveness, and commitment to partners in the community and the Province of Saskatchewan for high impact research, we have identified five thematic areas of research priority. These research areas represent clusters of researchers who have distinguished themselves for success in publication, grants competition, community involvement and local, national

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<sup>3</sup> Averaging over four years, the University's "impact" as calculated by Thompson Reuters' NCI (including all Web of Science subject areas) exceeded that of a comparator group of Simon Fraser University, University of Victoria, York University, University of Waterloo, University of Guelph, University of Saskatchewan and University of New Brunswick.

<sup>4</sup> Research InfoSource, Spotlight on International Research Collaboration, [www.researchinfosource.com/pdf/Spotlight2014Comprehensive.pdf](http://www.researchinfosource.com/pdf/Spotlight2014Comprehensive.pdf).

and international impact (see **University of Regina's Strategic Research Clusters** section).

- Accomplishments under the third goal, “Provide the needed space, infrastructure and administration to support excellence in research” include:
  - A significant increase in space and infrastructure for research was realized including completion of the 5<sup>th</sup> floor of the Research and Innovation Centre and 2 Research Drive.
  - In the spring of 2013, the Provincial Auditor was invited to review the University of Regina’s research administration. In a complementary process, the University commissioned an external review<sup>5</sup> to provide recommendations on improving research support for faculty. Implementation of recommendations from both reviews is virtually complete. Highlights of accomplishments include:
    - Restructuring and increased staffing for the Research Office including additional Research Facilitators and IP support.
    - Increased accounting capacity for research endeavors.
    - Enhanced reporting on research activities including quarterly reporting by the VP Research to the Board of Governors
    - Strengthening of governance and policies for the University’s Centres and Institutes.
- Accomplishments under the fourth goal, “Demonstrate the relevance of pure and applied research to the community” through identification and promotion of the success stories of our scholars include:
  - In the last five years, the number of research-related stories featured on the U of R homepage increased significantly from 11 in 2010 to 105 in 2015. Proportionally, the number of these stories also increased; in 2010, roughly one in five stories posted on the web were research-related and by 2015, the ratio increased to one in three.
  - Our Communications unit has developed and promoted a series of articles on the research and personal profiles of the University’s 10 Canada Research Chairs. In addition, throughout 2013-14 the University promoted the accomplishments of the Canada Research Chairs through advertisements on inside cover of University Affairs.
  - To promote and celebrate the University’s research-related successes both within and outside the immediate University community, the Office of the Vice-President (Research) launched *Innovating Life: Quarterly Research Update from the University of Regina* in 2013.
  - In 2015, a Research Communication Strategist joined the External Relations team to lead the development of strategic communications that support our research enterprise.

### **Strategic Research Objectives**

Research impact is a strategic priority adopted directly from the UR Plan. “Research” encompasses creative endeavors and other scholarly activities that foster new knowledge and/or respond to community needs. The objectives and supporting actions outlined below are focused on research impact, graduate student success and on our researchers’ commitment to our communities.

***Objective: Strengthen support required for students and researchers to deliver high impact outcomes.***

Supporting actions:

- *Increase the research funding budget.*

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<sup>5</sup> “Consultation Report on Research Administration at the University of Regina” by M. Crago and M. Kirk. 2013.

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- Increase resources to attract and retain high-caliber researchers.
- Increase resources to attract top-quality Canadian and international graduate students holding funding and to develop scholar exchanges
- Work towards ensuring that scholarship support is available for all eligible graduate students. Support for Ph.D. students should be equivalent to support offered by Tri-Council fellowships.
- Develop awards for excellence in research.
- *Prioritize research resources and develop new funding partnerships that align with the five strategic research clusters.*
- Create internal research chairs for Indigenous Research and thematic areas of research strength (strategic research clusters).
- *Stimulate new research partnerships and funding opportunities, [including with industry], that are responsive to community needs and build capacity with local communities, including First Nations and Métis communities.*
- *Increase institutional research support for grant writing and research administration.*
- *Encourage the development of interdisciplinary research and academic programming among Faculties, the Library and departments through an internal interdisciplinary funding program.*
- *Increase support for research on topics with relevance to sustainability.*
- Dedicate resources to mentor new faculty to assist them with delivering high impact research in an academic setting.
- Rebalance teaching loads, where needed, to allow for greater engagement in research.
- Provide training and support in the use of research software.

### ***Objective: Advance the profile and awareness of research successes locally, provincially, nationally and internationally.***

#### Supporting actions:

- Increase support for public presentations and scholarly dissemination of research findings.
- *Profile University of Regina research successes internally and externally.*
- *Create a targeted communications strategy to keep University of Regina stakeholders, community members, and media updated on research developments.*
- *Provide necessary resources to publicize our research successes.*
- *Foster the development of more community-based research projects.*
- *Implement key strategic recommendations from the Sustainability Strategic Plan.*
- *Continue to build partnerships through the United Nations University Regional Centres of Expertise on Education for Sustainable Development.*
- *Enhance research collaborations with other universities and colleges, both in Canada and internationally.*
- Promote graduate studies and research opportunities at the U. of R. nationally and internationally.
- Review and enhance mechanisms for high-quality open access publications.

### ***Objective: Increase research partnerships and projects with First Nations and Métis people, communities and organizations, including the First Nations University of Canada.***

#### Supporting actions:

- Create internal research chairs for Indigenous Research.

- Enhance research and collaborations involving First Nations University of Canada, the Gabriel Dumont Institute, Indigenous Peoples' Health Research Centre and other potential partners, communities or stakeholders.
- *Regularly host an Indigenous research showcase to broaden awareness of Indigenous research and Indigenous research methods.*
- *Encourage and support awareness [and recognition] of Indigenous ways of knowing in research and graduate programs.*
- Publish and promote Indigenous language materials, as well as the research, traditional knowledge, poetry, and non-fiction stories of Indigenous scholars and authors through the University of Regina Press.
- Attract and support Indigenous undergraduate students, graduate students and post-doctoral fellows.

As observed by the Provincial Auditor<sup>6</sup>, the University must describe how it intends to actualize the SRP and how it intends to measure success. This suggests a fourth objective. Also, refer to the **Implementation** section that follows.

**Objective: Develop and implement processes, procedures and tools to help ensure the University's strategic research plan is actualized.**

Supporting actions:

- Communicate the SRP to the University faculty and researchers.
- Develop annual operational plans to provide more detail on how the vision, mission and strategic objectives will be achieved.
- Develop a comprehensive and diverse set of measures of success to demonstrate achievement.
- Report on progress and results to the Board of Governors and the broader University community.

**University of Regina's Areas of Thematic Research Priority**

The University of Regina has emerged as a centre of excellence on a number of research fronts. Based upon research impact, critical mass of highly qualified personnel, distinctiveness, and commitment to partners in the community and the Province of Saskatchewan for high impact research, the University has identified five thematic areas of research priority, which represent clusters of researchers:

- Anxiety, stress & pain;
- Digital future;
- Integrated human health: Equity, disease & prevention;
- Social justice & community safety; and
- Water, environment & clean energy.

The University's research is not limited solely to these areas of strategic priority and they do not diminish the important contributions of individual researchers and creative practitioners. In fact, individual research strengths collectively formed the foundation of the University's strategic research directions and will continue to foster new opportunities (see 'Emerging thematic areas of research priority' section).

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<sup>6</sup> Provincial Auditor Saskatchewan. 2013 Report – Volume 1.

### **Strategic Research Cluster Overviews<sup>7</sup>**

**Anxiety, stress & pain.** Our researchers tackle complex and costly human problems related to anxiety, stress and pain, their clinical evaluation, manifestation, causal factors and their management, with the goal of improving functional ability and quality of life for millions of people.

**Digital future.** Our researchers lead the way to the Digital Future through innovation and creativity with research in wise computing; visualization; data security & policy; design, creation and analysis of emerging technologies; and within the digital humanities. They are emphasizing effective, efficient and sensitive decision-making by working with new information accumulated from diverse sources in scaled quantities of heterogeneous, electronic data. The growth and continuous expansion of the data culture provides constant opportunities for our researchers to innovate, partner, develop and produce across fields such as commerce, science, education, healthcare, public administration, the arts and culture industries.

**Integrated human health: Equity, disease & prevention.** The central tenet of this cluster is to develop and disseminate research knowledge to improve the health of Canadians. Researchers in this cluster perform clinical, bio-medical, population and Indigenous health research, using methodologies from the natural, clinical and social sciences. This integrated health approach focuses not only on traditional biochemical/biomedical research, but also investigates social, political, economic, cultural and population aspects of health. This cluster serves as a focal point for promoting interactions between researchers, clinicians, policy makers and the public. It provides a resource for local community interactions and information on health research.

**Social justice & community safety.** The “Social Justice” component involves research and practice focused on equity and fairness at both individual and systemic levels. It considers inequities in social, political, and economic power, equitable access to opportunities and resources, as well as scholarship that involves reciprocal University-community engagement. The “Community Safety” component deals with prevention and protection of communities from circumstances or events that could place in jeopardy the safety of individuals or groups. Research in the Social Justice & Community Safety Research Cluster involves either of the above components, or a combination.

**Water, environment & clean energy.** The “Water and Environment” research component evaluates the impacts of natural and anthropogenic effects on grassland, forest and aquatic habitats, many of which are located within the prairie eco-region. The overall scarce, yet unpredictable availability of water across the prairies poses unique challenges to balancing the desire for high water quantity, quality and habitat integrity with water withdrawals for industrial, agricultural and urban uses, as well as their associated deliveries of pollutants back into lakes and rivers. Accordingly, a particular large body of research is dedicated to evaluate the impacts of climate, land-use, industrial and urban pollution on hydrology, water quality and food-web integrity of lakes and rivers in Saskatchewan. The Long Term Ecological Research approach in this cluster is crucial to identify the most serious threats to environments in semi-arid regions here and elsewhere, provide information to decision makers how to alleviate negative impacts, and develop adaptive management strategies for the impacts of anticipated climate change, population growth and increased development of natural resources. Further research focusses on finding new technologies for sustainable solid waste management, treatment of waste and produced waters. The “Clean Energy” research component focuses on developing environmental low

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<sup>7</sup> Full descriptions of the strategic research clusters are available on the University of Regina website: <http://www.uregina.ca/research/research-expertise/research-strengths/index.html>

carbon technologies to mitigate carbon dioxide emissions associated with climate change. It also investigates new policies based on these technologies as well as their public acceptance. “Clean Energy” research also includes studies dealing with smart grids, intelligent transportation systems, and lean and agile manufacturing. Another component of research deals with the development of new technologies to exploit Canadian heavy and shale oil reserves.

**Emerging thematic areas of research priority.** Over the time period of this SRP, new concentrations of research excellence may emerge and show potential to become recognized as a strategic research cluster. As outlined in the guidelines for strategic research clusters, the Office of Vice-President (Research) will work with the associated faculty and researchers to determine if these new concentrations meet the criteria for a strategic research cluster. These candidates will be deemed “emerging clusters” over the period of the current plan and may be promoted to the status of strategic research cluster for the next incarnation of the SRP. The guidelines also include processes for review of strategic research clusters and de-listing a cluster if it no longer satisfies the qualifying criteria.

### **Implementation**

Implementation of the SRP 2016-2021 is aligned with the framework described in the UR Plan and includes the following four main elements:

- SRP communications for University faculty and researchers;
- Annual operational plans to provide more detail on how the vision, mission and strategic objectives will be achieved;
- A comprehensive and complete set of research impact measures; and,
- Reporting to communicate progress and results to the Board of Governors and the broader University community.

### **Communications**

A certain level of awareness of the SRP contents has been achieved through the significant consultation across the University community in order to gather input and complete the SRP. Upon approval of the SRP, a second round of communication focused on implementation of the plan and targeted to faculty and researchers will be completed.

### **Annual Operational Plans**

The objective of an annual operational plan is to provide more detail on how the strategic research objectives will be achieved. Formal planning of research operations is not currently an established practice at the University and work will be required over the next five years to mature this capability.

It is assumed that operational plans will be developed for the following units:

- Office of Vice-President (Research), taking into consideration strategic research clusters;
- University-based centres / institutes;
- Research Office; and,
- Faculties including the Faculty of Graduate Studies and Research and faculty-based research centres / institutes.

### **Research Impact Measures**

In 2016, the Council Committee on Research (CCR) Subcommittee on Research Impact reported “there cannot be a good one-size-fits-all approach to assessing research performance and measuring research impact. Uniform measures or metrics are more likely to be misleading or distorting than helpful because of diversity of research activities and many different forms of research impact across disciplines. It is important to recognize and value different types of research and research impact.”<sup>8</sup>

As an illustration, research impact may be captured by the following<sup>9</sup>.

**Scholarship.** Scholarship that can be measured using indicators such as:

- Bibliometric indicators;
- Downloads from Open Access repositories;
- Acknowledgements and other recognition as deemed appropriate;
- Prizes and awards;
- Reputation as measured by survey;
- Post-publication peer-review (book reviews, dedicated symposia); and,
- Juried exhibitions and performances.

**Capacity.** Capacity through teaching and mentoring at the undergraduate and graduate levels that can be measured using indicators such as:

- Number and quality of experiential learning/ research opportunities for students;
- Surveys of students and alumni;
- Employer surveys; and,
- Integration of research as a learning outcome in courses.

**Economy.** Economy that can be measured using indicators such as:

- Advisory roles and board memberships;
- Revenue opportunities and cost savings in the public, private and not-for-profit sectors resulting from research applied in practice;
- Income derived from patents, patent licensing, copyright and trademarks; and,
- Consulting contracts.

**Society and culture.** Society and culture that can be measured using indicators such as:

- Number and quality of partnerships between researchers and community groups;
- Requests for consultancy/advice from community groups;
- Media coverage of research (newspapers/ TV/ online);
- Requests for media appearances;
- Engagement of the public at events;
- Research-related social media; and,
- Public use of research-based resources on social and cultural issues.

**Practice and policy.** Practice and policy that can be measured using indicators such as:

- Invitations to participate as an expert witness, an advisor, on an expert panel or committee;

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<sup>8</sup> “Report of the CCR Subcommittee on Research Impact” June 2016

<sup>9</sup> Adapted from “The Impacts of Humanities and Social Science Research Working Paper” October 2014 with permission of the Canadian Federation for the Humanities and Social Sciences.

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- Citations in government documents;
- Consulting for governments or think-tanks; and,
- Commissioned reports, public policy documents and input.

Assessment of research impact will continue to be articulated within faculty performance criteria documents, to allow for diversity of research activities and forms of research impact across disciplines.

### **Reporting to Communicate SRP Progress and Results**

The VP Research will provide a report on research to the University of Regina’s Board of Governors at each meeting of the Board according to the following framework:

- A status report on the response to the Provincial Auditor’s Report on Research at the University of Regina (PARR) - until implementation is complete;
- Report on the status of action plans to actualize the Strategic Research Plan;
- Performance measures with respect to the Strategic Research Plan
  - Progress in developing measures that are not yet operational;
  - Data for each measure that is operational; and.
  - Identification of targets and progress with respect to the targets.
- Research highlights and significant events since the last report, including but not limited to:
  - Significant funding grants awarded and contracts initiated;
  - Significant recognitions;
  - Major publications, presentations, Journal articles, books, monographs, performances as well as other research artifacts of note;
  - Relevant narrative-based indicators of significant research impact;
  - New partnership agreements;
  - Results of reviews of Centres and Institutes;
  - Commercialization and patent milestones;
  - Audit and other evaluation outcomes including any compliance issues;
  - Reports on Faculty-based Centres and Institutes; and,
  - Milestone events for major research agreements (achieved or missed).

In May 2015, the Board of Governors approved the following performance measures that fall within the Scholarship area.

<b>Measure</b>	<b>Definition</b>
<i>Research Impact / Sustainability</i>	
Tri-Council Grants	Total number of tri-council grants and Canada council grants held by faculty in the University’s fiscal year
Research Revenue	Total Research Funding (contracts and grants) earned from all sources in the University’s fiscal year.
<i>Research Impact</i>	
Normalised Citation Impact (NCI)	The NCI measures the quotient of an observed citation rate or impact of an institution and an expected citation rate for the institution or country (i.e., it compares the performance of an institution to the average performance of the world). Published by Thompson-Reuters InCites.
International Collaboration	This statistic represents the proportion of total publications at each institution over a five-year period that were co-authored with researchers outside of Canada and is based on universities on the 2014 Top 50

	Research Universities list that had a total of 250 or more publications over the five-year period. Publication data were obtained from Observatoire des sciences et des technologies' (OST) Canadian bibliometric database which contains data from the SCI-Expanded, SSCI and AHCI databases of Thomson Reuters.
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Highlights of progress and results will be reported to other stakeholders including the broader University and external community as appropriate through communication channels such as the University of Regina's research magazine.

### Conclusion

The Strategic Research Plan, developed through consultation with the University community and its stakeholders, shows coherence with the University of Regina's Strategic Plan 2015-2020: "*peyak aski kikawinaw Together We Are Stronger*". It also signals a commitment to the continued growth and pursuit of excellence in research across faculties and disciplines.

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**research** that has **impact**

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