Introduction

The implementation framework for achieving the goals set out in the University of Regina Strategic Plan 2015-2020, *peyak ask kikawinaw* (paraphrased roughly as *together we are stronger*), requires all faculties within the University to develop strategic and operational plans that affirm their commitment to the strategic components of the UR Plan. The present document articulates the strategic priorities for the Faculty of Science for the 2016-2020 period, as well as specific initiatives and proposals for achieving the goals of the UR Plan.

Canadian universities are built upon a foundation consisting of the arts and sciences, and the University of Regina is no exception. With the popularization of, and pressure for, “market-ready” university graduates, the Canadian postsecondary education landscape has witnessed considerable debate and question over the value—intrinsic, monetary, and economic—of higher education. What is often overlooked in such debates are the facts. Numerous studies reveal that graduates from a postsecondary arts program or a science program are, in many ways, already market ready by virtue of the nature of their education; moreover, such graduates, on the whole, possess greater long-term potential for achievement, earning power, and spinoff economic output than students who have been trained especially for a certain type of vocation, in a specific moment in time.

Time is a major factor in today’s world. The pace of change is unprecedented, and the ability of an educated workforce to adapt to and harness changes in our world is key to the future promise of the next generation of Saskatchewan people, and to the health and prosperity of the world itself.

Science education is essential. A scientifically literate population is absolutely crucial to address the challenges of today and the near future. Such challenges include the understanding of climate change and its impacts, the future of the energy sector, land and water usage policy, conservation of biodiversity, the health of the watershed (especially where First Nations people reside), and the proper use of statistical analysis, to name only a few. People educated in science become teachers, policy makers, entrepreneurs, and, yes, scientists, thereby ensuring the continuance of a knowledge-based, innovative, and literate human resource for Saskatchewan to draw from. To the University, educators in science make possible the delivery of degree programs in a diversity of important fields, including in engineering, economics, psychology, medicine, and kinesiology. Is it worth the investment? The answer is best phrased as a question: can we afford to not invest in science education?
Science education at the University of Regina is undertaken by a cadre of talented individuals, the majority of whom are themselves passionately engaged in scientific research. Indeed, one cannot sustain high-quality education in science without investment in scientific research; the alternative is merely superficial. Nearly all university researchers engage young people as research assistants, thereby creating the opportunity for experiential scientific learning, for skill transfer, and for the development of an educated populace who value and understand science. In addition to the advancement of knowledge, which is a primary mission of the University of Regina, scientific research helps Saskatchewan remain equipped with the knowledge base and human resources that are necessary to fulfil the province’s ambitions and needs in innovation, keeping Saskatchewan competitive and economically prosperous.

The University of Regina counts among its alumni many remarkable graduates who have made a lasting positive impact on our world. Our obligations and responsibilities are substantial, and the fruits of our labours are far reaching. With this in mind, the Faculty of Science Strategic Plan 2016-2020 seeks to identify goals for the Faculty’s future development in the years ahead, while aligning with the strategic priorities of the University of Regina and meeting the expectations of the people of Saskatchewan.
VISION
The Faculty of Science aspires to be a premier postsecondary academic unit, recognized for the significance, novelty, and impact of its research, and for the quality, relevance, and currency of its undergraduate and graduate programs.

MISSION
The Faculty of Science is devoted to the creation and application of scientific knowledge, both pure and applied, and to the dissemination of this knowledge through scholarly publication, undergraduate and graduate education, and community outreach and service.

VALUES
Excellence in Research and Scholarly Pursuits
High-Quality Teaching
Enthusiasm for Discovery
Cooperation and Collaboration
Community Engagement
Service
STRATEGIC PRIORITIES FOR THE FACULTY OF SCIENCE

Quality Education

- Maintain high standards of instruction, course management, and assessment
- Ensure that programs and course offerings are structured to facilitate efficient time to completion for undergraduate and graduate students
- Ensure the relevance and significance of our degree programs by continuing to respond to student needs and interests, emerging trends and employment opportunities, and to changes in contemporary scientific pursuits and practices
- Enhance learning supports for students transitioning from secondary school, for aboriginal students, and for international students
- Augment experiential learning opportunities, including international and community based, for undergraduate and graduate students
- Foster scientific curiosity and enthusiasm for discovery in all students
- Continue to engage undergraduate and graduate students in research

Research Impact

- Maintain high standards of research and graduate supervision
- Ensure that existing research infrastructure is taken full advantage of to support the work of individual researchers and groups
- Establish effective administrative practices and supports for the application and administration of external research funding
- Foster interdisciplinary collaborations to address applications of scientific research to the community
- Augment and support contractual and consultative research work for, and with, indigenous communities in Saskatchewan and neighbouring regions
- Enhance existing, and support new initiatives for, international research collaboration
- Showcase scientific advances in the community

Sustainability

- Ensure the long-term viability of teaching and research in Science through efficient human-resource practices and careful planning for infrastructure and instrumentation sustainability and renewal
- Ensure that Science laboratories are in compliance with regulations governing safety and the handling and disposal of hazardous products
- Adopt environmentally-sound practices in all operations
- Continue to support and promote research on environmental sustainability
Science Commitments to University Strategic Priorities

Strategic Priority: Student Success

University of Regina Objectives, 2015-2020

• Enhance supports to better facilitate student preparedness for academic success
• Embed indigenous practices, ideas, and principles in our academic pursuits
• Strengthen the quality and impact of teaching and learning for all students
• Expand and enhance experiential and service learning opportunities in academic programming

Faculty of Science Supporting Actions, 2016-2020

• Evaluate and, if necessary, revise and enhance current student-support activities to ensure that students continue to receive supplemental learning opportunities, particularly in transitioning and first-year courses
• Increase coordination with the Aboriginal Student Centre and UR International to ensure the availability of regularly-scheduled tutors in these spaces
• Explore the possibility of creating new courses, similar to Chemistry 100 and Mathematics 102, for students transitioning from high school who lack the math/science background to enter directly into the Faculty of Science
• Introduce laboratory sections in Statistics 160 and Mathematics 103, 112, and 122 to improve student learning and performance in the required mathematical and statistical science courses
• Explore innovative uses of audio/visual media for supplemental learning and student-instructor interaction
• Enhance experiential learning through the creation of applications-based, interdisciplinary courses, and through the development of various local and international field schools
• Ensure the relevance and significance of our degree programs by continuing to respond to student needs and interests, emerging trends and employment opportunities, and to changes in contemporary scientific pursuits and practices
• Identify courses in which indigenous knowledge could be incorporated into the syllabi, and explore programs in Science in which one or more courses in indigenous studies and culture would be appropriate
• Foster the growth of the new programs (offered in collaboration with FNUC) in Environmental Health & Science and Indigenous Environmental Science
• Develop short online videos to guide first-year students on career choices (e.g., what does a biochemist do?), and translate these videos into French, Cree, and Dene
Strategic Priority: Research Impact

University of Regina Objectives, 2015-2020

• Strengthen supports 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 First Nations University of Canada

Faculty of Science Supporting Actions, 2016-2020

• Employ highly qualified personnel to assist with research-grant preparation and submission
• Develop effective practices for grant administration support to complement what is offered by the Research Office
• Take greater advantage of existing national programs (e.g., MITACS) that support graduate education and research
• Continue and build upon the success of the Bushwakker Science Pub series with public lectures at key venues, including the Saskatchewan Science Centre and secondary schools
• Enhance the number of sponsored public lectures (e.g., the PIMS Distinguished Lecture series, the (currently dormant) Basterfield Lecture)
• Improve the communication of research accomplishments on the Science webpage and on departmental and faculty-wide social media sites
• Re-establish the Science Annual Report, detailing the Faculty of Science’s accomplishments with regards to the University’s strategic priorities
• Take further advantage of professional societies (e.g., Saskatchewan Geological Society, Pacific Institute for the Mathematical Sciences) in bringing scientists to Regina for campus and community lectures
• Foster interdisciplinary collaborations to address applications of scientific research to the community
• Encourage collaborative research between Science researchers and scholars at First Nations University
• Augment and support contractual and consultative research work with indigenous communities in Saskatchewan and neighbouring regions
• Develop scientific research projects relevant to indigenous people and their environment
Strategic Priority: Commitment to Communities

University of Regina Objectives, 2015-2020

- Focus on our people by continuing to build a friendly, respectful, diverse, safe, and welcoming university for all
- Focus on institutional sustainability and transparency to ensure that we are a preferred institution at which to learn, conduct research, teach, and work
- Focus on connecting and engaging with all the communities we touch

Faculty of Science Supporting Actions, 2016-2020

- Review of the results of the Employee Engagement Survey to identify areas of concern for academic and administrative staff
- Maintain our significance in community through events such as Science Rendezvous, the LEGO League competition, science camps, computer science camps, camps and national competitions in mathematics, the high altitude balloon experiment, and the problem-solving workshops in mathematics for secondary students
- Contribute to the mentoring of young people who have interests in science through service as judges in local, regional, and national science fairs
- Host major events, such as the Canada-Wide Science Fair, that promote to the public at large scientific creativity, application, and thought
- Develop a visiting lecture series (featuring faculty and graduate students) at local and regional schools
- Develop short online videos for students and science teachers that address scientific concepts and scientific research, and to draw upon the “3-minute thesis” competitors to highlight research undertaken by graduate students
- Participate more actively in annual professional development conferences for science teachers in the secondary school system
- Advocate provincial education policy makers on matters related to curricula and assessment to create a scientifically-literate society and ease the transition of students to university
Overarching Themes

In alignment with the UR Plan, the Faculty of Science Strategic Plan is formulated with indigenization (transformation of the existing academy by including indigenous knowledges, voices, critiques, students, and materials) and sustainability (institutional longevity and success into the future; economic, cultural, social, and environmental sustainability) as overarching backdrops to the ideas and initiatives put forward herein.

Plan Developers

The development of the Faculty of Science Strategic Plan 2016-2020 was initiated by Daniel Gagnon, former Dean of Science, in Spring 2016. The final form of the plan was prepared by:

- Mark Vanderwel (Biology)
- Brian Sterenberg (Chemistry & Biochemistry)
- Howard Hamilton (Computer Science)
- Maria Velez (Geology)
- Donald Stanley (Mathematics & Statistics)
- Mauricio Barbi (Physics)
- Douglas Farenick (Acting Dean of Science)

Approval

Approved by the Faculty of Science Council on September 19, 2016