

Vision 2023

Clayton H. Riddell Faculty of Environment, Earth, and Resources
University of Manitoba
Strategic Plan 2018 – 2023

A Faculty strategic planning meeting was held in February 2018. This document incorporates what was learned from faculty and staff members at that time while recognizing the larger resource, economic, political, and socio-cultural contexts in which we conduct our scholarship and educate our students. Thus, the strategic plan outlined here aims to guide the Faculty over the next 5 years as we work to make impactful contributions to our understanding of the Earth, our changing environment, and people.

Strategic Planning – The Global Context:

Listening to the media about current economic, political, and socio-cultural changes, particularly where it involves resources and the state of the environment, it is clear that these present all of us with considerable challenges. Perhaps as never before, the scholarship with which we are engaged is increasingly relevant locally, regionally, nationally and internationally.

Back in 2003 when the Faculty was created, Europe saw a deadly summer heat wave. Today in the summer of 2018, significant and deadly heat records, drought, and highly destructive forest fires around the world are in the news daily. World energy consumption was ~400 quadrillion BTU in 2003, and is now ~600 quadrillion BTU, with much of this increase consumed in less developed non-OECD countries. At the same time, world carbon emissions rose by 2% in 2017 to a new record and demand for oil globally rose by 1.6% (more than twice the average annual rate) while Arctic sea ice forms later in the Fall and melts earlier in the Spring. International accords such as the Paris Agreement (UN Framework Convention on Climate Change) are under threat due to a widespread international rise in nationalism and protectionism.

In 2003, there was no Facebook (established 2004), YouTube (established 2005) or iPhones (introduced 2007). Today they and many other technological innovations have become part of our daily lives, and many more new innovations continue apace. Infrastructure and critical resources to build and support the increasing amount of technologies that define modern society are in high demand, creating numerous resource and environmental pressures. This is happening at the same time as wealth and control of resources is held by an ever shrinking minority, war and environmental disasters generate refugee crises around the world, and here in Manitoba problems of poverty, homelessness and poor living conditions (e.g. boil water advisories and housing overcrowding on reserves) are regularly news features despite the fact that Canada is supposedly in a time of economic recovery.

Contrasting needs exist between meeting continuing demand for fossil fuels, and developing mineral resources required for renewable and low carbon energy use and generation, including wind, photovoltaics, grid scale storage and electric vehicles. Further tensions exist between providing sufficient food and water for a growing global population, and setting aside land for

vulnerable ecosystems and cultures. These conflicts and complexities have broad implications for our research, teaching, and outreach, but as a uniquely interdisciplinary Faculty we are well placed to meet these challenges. Natural systems are under increasing pressure, and it is our responsibility to monitor these systems, evaluate the impacts of resource development on these systems and human populations. This vital work informs and guides policy and governance to sustain and protect these environmental systems while ensuring equitable access to resources.

Strategic Planning – The Faculty Context:

Founded in 2003, the Riddell Faculty brought together the Department of Geological Sciences and the Department of Environment and Geography with the Natural Resources Institute. In its first 10 years it awarded 1,369 degrees; in the most recent 5 years a further 878 degrees have been awarded. Of these, 194 or 22% were graduate degrees; currently graduate students are 26% of the Riddell Faculty student body. When compared to other Faculties (e.g., Arts 9%, Science 7%, Agriculture 24% and Engineering 22% graduate students), clearly our graduate programs are a strong indicator of our research ethos.

There are demographic shifts in our student population to which our faculty, staff, and students will need to respond. In 2004, the international student population in the Riddell Faculty was 9.4% of our undergraduate student body, and 22% of our graduate students. Currently these proportions are 27% and 34% respectively. To compare to other faculties, Arts has 21% and 23% respectively, Agriculture has 20% and 54% respectively, Science has 23% and 49% respectively, and Engineering has 15% and 65% respectively. While many factors can influence the number and origin of our international students, we will need to find multiple ways to support, teach, and work with this significant and diverse student population.

The proportion of our students who identify as Indigenous has also increased; in 2010, Indigenous students represented 3.4% of the total student population, increasing to 6.2% in 2013, and currently 7.1% of the Riddell student population. The University of Manitoba's strategic enrollment management (SEM) plan to date has had the goal of having 10% of undergraduate students and 20% of graduate students identify as Indigenous by 2018. The Riddell Faculty's most recent SEM (2015) separates undergraduate and graduate data; 6.8% of the undergraduate population, and 2.7% of the graduate student population identified as Indigenous. However, with a Manitoba Indigenous population at 18% of the provincial population (2016 Census), and expected to rise to 19% by 2026, we must address our place in working with Indigenous leadership and communities to meet the educational needs of this growing segment of our province. We therefore need to do more to support Indigenous students, meet the challenges and connections of Indigenous lands with the science and scholarship of the Earth, environment, and resources, and build a place where together Indigenous and non-Indigenous students can become informed citizens.

Institutionally, all faculties must respond to funding and budget changes depending on the state of the Province's economy, other societal needs, and political factors. The provincial budget of 2018 saw a decrease of 0.9% for post-secondary education that has been met at the University of Manitoba with increased tuition fees. The University of Manitoba is also introducing a new budget model that will allocate revenue from tuition, the provincial operating

grant, and other sources of revenue to faculties based on a series of drivers. The goal is to incent revenue growth by providing a direct budgetary benefit to academic units that undertake activities that generate income. There are a variety of possible activities that faculty and staff might consider to build upon budgets such as new course offerings, additional course sections, or offering summer institutes to educators or professionals; laboratory and other facilities may also offer potential opportunities, personnel and time allowing. In addition, the Faculty will need to continue to manage the Riddell Endowment Fund to address the funding areas identified in the Memorandum of Understanding. These areas are long-term planning, grant leveraging, retention and recruitment, program and curriculum development, and scholarships and awards.

Strategic Planning Priorities: Vision 2023

After engaging in a daylong session of activities and discussions including a ‘Vision 2023’ exercise, clear themes emerged providing a well-defined set of directions for the Faculty as it looks to the future. Faculty, staff, and students will need to participate in committees developed to meet the goals outlined below. Five distinct areas emerged as the key priorities on which to focus:

- Research
 - Indigenous partnerships
 - Communication
 - Teaching and Programming
 - “4Cs” (collaboration, communication (inter), community (inter) and collegiality)
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Research:

The Riddell Faculty has a strong research ethos, and finding ways to support this is important. The Faculty also has significant interdisciplinary and collaborative research that will continue to be encouraged and supported. We also apply to a number of granting agencies and in recent years have been very successful to the point that we are the highest grant funded unit per FTE on the Fort Gary Campus. This significant effort can be enhanced with additional support.

Our Faculty also supports important infrastructure that is used by researchers and their students from across campus and from around the world; this needs to be maintained and, in time, replaced. Our faculty network with a variety of groups across campus, and with rural and northern communities. These include campus groups such as the Manitoba Institute for Materials and the Critical Environments Research Cluster, the Food Systems Research Group, and communities such as Dunnotar in the Interlake, Norway House, University College of the North (UCN) in northern Manitoba, and Pimachiowin Aki (UNESCO World Heritage site).

Internationally, faculty and students travel extensively, notably to Arctic regions to investigate climate change, to African nations to explore community learning, or to Asia to undertake disaster and sustainability research.

Actions:

- Hire and retain a full time research facilitator.
 - Funding opportunities occur year round that need to be promoted and coordinated (the especially with Office of Research Services). In addition, there are emerging opportunities for network and group grants, as well as non-traditional sources such as Non Government Organizations, private industry, and Indigenous partnerships.
 - Early career faculty will especially benefit from this mentorship and support.
 - Responsibility for research overheads and bridge funding will reside within the Faculty; ORS is withdrawing from emergency forms of funding.
 - Research overheads will be enforced to maintain infrastructure with reference to the new budget model. Any partner-required overhead limits (e.g. with government agencies) need to be declared early and considered in the overall project budget.
 - Small amounts of bridge and emergency funding will continue to be available from the Faculty
 - Promote and communicate faculty, and student (undergraduate and graduate) research and interaction
 - Reinvigorate and diversify the Faculty seminar series to showcase Riddell Faculty research including faculty and students. Alternative formats could include accessible background seminars on current topics, multiple speakers/panels on multi-partner projects, or a Riddell Faculty 3 Minute Thesis opportunity; such events could be followed by social events. Support and encourage wide participation.
 - Update content on monitors in the Wallace Building. Update and develop other displays in Wallace and Sinnott.
 - Develop a strategic hiring plan for faculty and instructors to enhance areas of growth and development
 - Examine for example the hiring of new faculty to address environmental economics, resource development (e.g. water, minerals, natural resources), Indigenous peoples and resource development. Consider cross-unit appointments where appropriate.
 - Considering the new budget model, examine the potential to hire an instructor to cover core environmental programming (see “Programming”).
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Indigenous Partnerships:

The Riddell Faculty has participated individually and collectively to engage with Indigenous communities, issues, and concerns. As noted in our revised Values (see Appendix: Faculty Purpose, Mission, and Values), this Faculty is committed to reconciliation, and to the educational recommendations of the Final Report of the Truth and Reconciliation Commission (<http://caid.ca/DTRC.html>). Collectively we seek to renew and revitalize relations with Indigenous individuals, groups, and

communities. This entails listening, learning, sharing, and promoting diverse practices and views in all aspects of our work.

The recent Provincial Manitoba – First Nations Mineral Development Protocol recognizes traditional lands and Treaty Land Entitlements (TLE) but also recognizes the pressing need to build community capacity to support decision-making connected with resource development. The Faculty has engaged in informal discussions with the First Nations Mining & Economic Development Inc. (a branch of AKI Energy Social Enterprise) and with the University College of the North (UCN) on how we may assist. This builds on our relationship with UCN given our 2 + 2 articulation agreement in Environmental Science and has the potential to build links with other programs. The Faculty has participated for many years with the Verna J. Kirkness Science and Engineering Education Program that brings Indigenous high school students onto campus to experience hands-on research. Providing such activities in northern communities could also leverage that experience and bring greater engagement for Indigenous high school students.

Actions:

- Hire and retain an Indigenous Facilitator/Coordinator
 - This individual will assist with developing and maintaining community contacts, will help imbue Indigenous values to the Riddell Faculty, and will advise on how our programming can meet the needs of Indigenous students and communities.
 - This individual will help us lay the foundation of a “GEO-AP” bridge similar to the Engineering Access Program (ENGAP) program in Engineering and in collaboration with UCN; fund raising for the GEO-AP program will be added to the Faculty fundraising priorities.
 - This individual will help coordinate the Verna J. Kirkness Science and Engineering Education Program.
- Reinvigorate the Indigenous Pathways Network committee
 - Recruit faculty to engage with communities in association with the Indigenous Facilitator/Coordinator to examine potential outreach to Indigenous communities identifying community and school needs and interests
 - Individuals and small teams to travel to communities to build relationships, interact in schools, and contribute to community and research projects.

Communications:

The strategic planning session identified the need to develop a comprehensive strategy to inform communications with individuals, communities, Provincial and Federal Governments. Moreover, as we are now firmly entering a time whereby we will be again be recruiting directly from high schools, we need a coordinated strategy to ensure high school students understand the role of the Faculty, understand the opportunities offered by the Faculty, and are aware of our entrance and performance requirements. This will build on existing visits to high schools,

tours of our facilities, University of Manitoba recruitment events and unique initiatives such as the Schools on Board program.

Actions:

- Develop a comprehensive communication strategy for the Riddell Faculty (though hiring an external company)
 - Meet to establish goals and objectives, audiences (e.g. general public, high schools, alumni), and communications channels.
 - Ensure that design contractors are aware of not only the University of Manitoba's branding initiatives but especially the character, priorities, and values of the Riddell Faculty
 - Develop a calendar and guidance on workflow regarding how, when, and who is responsible for outgoing communications. Ensure that information about events and changes in the Faculty are regularly and effectively communicated to faculty and staff.
 - Develop clear guidelines on formats for communications by faculty and staff
 - Establish regular quarterly meetings with representatives from the Marketing and Communications Office
 - Request information on upcoming activities for each quarterly period from faculty, staff, and students
 - Request any additional information not identified for each prior quarterly period from faculty, staff, and students
 - Establish small and rotating groups of faculty and students to visit and present to high schools and alumni events
 - Coordinate with Faculty student organizations to organize visits to their own high schools.
 - Coordinate with the University of Manitoba's Recruitment Office to offer and publicize a roster of speakers and topics to visit schools each year.
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Teaching and Programming:

The teaching and programs (undergraduate and graduate) in the Riddell Faculty foster the student community, incorporate hands-on learning, and meet professional accreditation/registration requirements. Our goal is for our programs to be transparent and comprehensive and encourage students to explore and learn in their chosen fields. However we know that students still periodically express concerns with their experience in the classroom and with facilities, and we need to be responsive and engage with students to ensure they understand program and course goals and objectives.

We need to ensure consistency in our core programming to support each of the disciplines represented in the Faculty. In addition, we can also examine

interdisciplinary opportunities that reflect our changing environment with respect to how society views and uses resources and reflect on where there may be changing or evolving imperatives. Some of these interdisciplinary courses (such as EER 1000 “Earth: A User’s Guide”) provide general instruction for all students at the University of Manitoba to be better informed about “Environment, Earth, and Resources”.

The importance of teaching in the Riddell Faculty needs to be acknowledged and supported. Faculty need to have the support of their departments to develop their teaching activities and approaches, and to establish their teaching strengths and priorities, keeping in mind the needs of the relevant programs. Faculty are encouraged to avail themselves of not only University of Manitoba teaching supports and development but to also be guided by their scholarly and professional identities, networks, and associations. The Riddell Faculty has also acknowledged the importance and contribution of the scholarship of teaching and learning in our tenure and promotion guidelines, and will support endeavours to build initiatives to raise the quality of teaching and learning in the Faculty and beyond.

The Faculty and academic units have curriculum review committees; these committees are primarily charged with program reviews (of which there have been several) and the periodic administration of course introductions and modifications. On the whole there has been a tendency for these reviews to be somewhat inward looking. Ideas put forward at the strategic planning meeting indicated that it is time now to be more integrated and outward looking in our program development, and encompass the following:

- Create opportunities for graduate students to experience teaching
- Find ways to connect undergraduates with graduate opportunities
- Provide opportunities for students in the Faculty to take courses more broadly within the Faculty, particularly at the intersection between the disciplines
- Create professional development opportunities for students
- Engage in basic tracking of alumni activities and employment.

The Faculty of “Environment, Earth, and Resources” has both responsibilities and opportunities to address critical environmental and societal issues. Furthermore, with the experience gained from EER 1000 “Earth: A Users Guide”, and our currently strong undergraduate enrolments we see there is an appetite amongst students generally within the University to be better informed about “Environment, Earth, and Resources”, without necessarily taking a degree in our Faculty. Proselytizing in these key areas will not only result in better-informed students and future public, but also will have a marked impact on our Faculty revenues. Here, in contrast to the recent past, undergraduate enrollment has again become a critical factor in the success of our Faculty.

Actions:

- The Faculty Review Committee will review and recommend from a Faculty-wide perspective the opportunities that exist for:
 - Our students to take courses within the Faculty, but outside their program.

- Graduate students to experience teaching.
 - The creation of courses at the intersection between the disciplines.
 - Professional development opportunities for students.
 - The creation of a suite of courses for broad consumption particularly in the areas of energy, climate, and natural resources
 - Intensify the promotion of courses and programs including undergraduate and graduate programs
 - Depending on capacity, pedagogy, and location (field courses, for example) promote low enrolment courses
 - Promote irregularly offered courses and special topics courses that may go unseen
 - Alumni Tracking and Networking
 - Develop comprehensive databases of our undergraduate and graduate alumni to organize communication, understand their career paths, and to potentially create mentoring opportunities for students
 - Create alumni events on campus and elsewhere to appeal to the specific interests and activities of alumni
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“4Cs” – Collaboration, Communication (inter), Community (inter), and Collegiality:

Also expressed at the strategic planning session was a desire for improved communication and interaction within the faculty, between departments, and between faculty, students, and staff. While there is some overlap here with the more general area of communications, this desire was often expressed in concert with the views that we have “too many talks”, that “these talks are aimed at narrow audiences” and “we don’t know what each other does”. There is work to do in this regard and while it is little consolation, similar concerns have been expressed within and about the broader University community.

At the planning meeting the promotion of more social events within the Faculty was suggested and to an extent this is what the University was attempting to do with its “Pop Up Socials”. In addition, meet and greet events (faculty-wide, and possibly annual) were proposed with tours so people could get to know facilities, laboratories, equipment, etc. and these could include break-out sessions for groups to interact. Other suggestions included an open house for students (undergraduate and graduate) poster sessions to highlight research or research group “cafes” to promote collaboration for new funding initiatives or new course development.

Putting on such events is not without costs in time, effort, and funds, and considering some of the specifics of the suggestions, there appears to be two scales: Faculty wide, and local groups such as support, technical staff, and students.

Actions:

- Establish a '4Cs' Committee to assist with coordination of faculty events.
- While student groups are well funded and have some capacity to run their own events, if necessary, additional funds may be provided from the Faculty. We should establish a joint Faculty - Student Committee to recommend and coordinate student social/academic events; such events might include speakers and conferences.
- Support staff events have been run in the past with some success. These should continue and will be coordinated through the Dean's Office.
- Strike an ad-hoc committee to recommend on a Faculty-wide event. The Research Committee has suggested in the past a Faculty-wide event could take the form of a poster event showcasing our research.
- Allocate a central social space for graduate students and develop events in which graduate students can come together to share challenges and success.

Appendix: Faculty Purpose, Mission, and Values

It was decided at the strategic planning meeting held in Feb 2018 that the purpose and mission remain unchanged. However, it was agreed that statements on equity and reconciliation be added to the values section. This change is indicated below via boldface type.

Purpose

To contribute to understanding the changing earth, environment, and human condition and to disseminate and apply this knowledge for the benefit of the present and future.

Mission

To create an intellectual community conducive to becoming a premiere teaching and research faculty in the broad areas of earth, environment, sustainable development, resources and human activities. We will accomplish this by using the unique synergies of our inter-dependent disciplines; by developing academic programs that respond to the needs of students, changing societal conditions, and worldviews; and through opportunities for research and outreach.

Values

The Clayton H. Riddell Faculty of Environment, Earth, and Resources recognizes that its strength is its people and that the most important measure of its success is the educational achievement of its students. The Faculty will strive to offer all students, staff, and faculty a healthy, safe, open, friendly, supportive, consultative and stimulating environment conducive to individual intellectual growth, personal fulfillment and career progress. We embrace the principles of academic freedom and responsibility, education for its own sake, integrity, inclusion, respect for others, equity, fairness, and accountability. More specifically, the Riddell Faculty holds, promotes, and demonstrates the following guiding values:

- Learning – at the centre of what we do, we promote learning as a lifelong process – in our Faculty, staff, students, and communities – for individual enrichment and the sustainability and betterment of society and our Earth.
- Discovery – we promote research and the creation of new knowledge and its application to societal and environmental problems.

- Sharing – we openly collaborate with others to acquire new knowledge and share discoveries with others to forward its development and application.
- Leadership – we aspire to intellectual, moral, and environmental leadership and to promote environmental responsibility in the University and our communities, from local to global scales.
- Diversity/Inclusiveness – we promote and celebrate diversity and open access to education and knowledge and we embrace difference; we value the diverse contributions of the disciplines, cultures, fields, and professions that comprise the Faculty; we actively seek participation of groups not well represented in the Faculty, especially the Indigenous peoples of Manitoba and Canada.
- Equity – we interact with individuals, groups, and communities in fair and just ways to address disadvantage and promote quality of life.
- Reconciliation – we seek to renew and revitalize our relationships with Indigenous Canadian individuals, groups, and communities and to listen, learn, share, and promote diverse practices and views.
- Ethical practice – we promote ethical practice and integrity and respect for individuals, cultures, and ecosystems in all of our activities.
- Inter-disciplinarity – to understand the complexities of human-environment interactions in all ecological, social, economic, cultural dimensions, we seek to integrate and synthesize knowledge across the disciplines – in the Faculty, University and beyond.
- Excellence – we are dedicated to promoting and rewarding excellence in teaching, research, and service.
- Service/Responsiveness – we seek to identify, respond to, and serve the needs of our students, University, professions and communities – local to global.
- Sustainability – we strive to demonstrate our environmental values in all our activities and promote the sustainability of our communities, ecosystems and the Earth.
- Innovation – as a new Faculty, we shall adopt responsive and innovative approaches, methods, and technologies in education, curricula, research and service.