



Through broad consultation, our university community has once again charted a bold and exciting course for the future of the University of Calgary.



Vision

The University of Calgary is guided by our overarching Eyes High Strategy 2017-22, which was recently renewed:

University of Calgary is a global intellectual hub located in Canada's most enterprising city. In this spirited, high-quality learning environment, students will thrive in programs made rich by research, hands-on experiences and entrepreneurial thinking. By 2022, we will be recognized as one of Canada's top five research universities, fully engaging the communities we both serve and lead.

The renewal process leading to *Eyes High* Strategy 2017-22 included over 10,000 points of engagement within our campus and local community. Overwhelmingly, the consultation showed that both the campus and local community supported an "evolutionary" rather than "revolutionary" approach to the original version of the *Eyes High* vision that was in place from 2011-16.

Eyes High Strategy 2017-22 extends three foundational commitments: Sharpen Focus on Research and Scholarship, Enrich the Quality and Breadth of Learning, and Integrate the University with the Community. It also includes two cross-cutting themes that explicitly extend our commitment to ensuring a rich and multi-faceted student experience and an inclusive and respectful campus culture.

Now that the *Eyes High* Strategy 2017-22 has been renewed and approved, it is time to refresh the

roadmaps that outline the priorities, strategies and goals that will lead us to achieving our *Eyes High* Strategy 2017-22 — the **Academic** and **Research Plans**.

The previous Academic Plan included seven priorities and the Research Plan included three priorities. Together, these ten priorities have guided human, capital, and financial resource allocations at the University of Calgary over the past five years (see Figure 1). In so doing, the University of Calgary has undergone a significant transformation as we continue to aim to meet our *Eyes High* aspirations. This transformation has been the result of the hard work of our entire campus community (see ucalgary.ca/provost/strategic-initiatives/academic-and-research-plan-2017-2022 for links to the reports of results of previous Academic and Research plans).



Figure 1 — Academic and Research Plan Roadmap



Process

The process for the renewal of the Academic and Research Plans was led by the Provost and Vice-President (Academic) and the Vice-President (Research).

During our process, data were examined and analyzed from three sources: a literature review on trends in higher education; a review of the data collected for the renewal of the *Eyes High* Strategy 2017-22; and a review of data collected and analyzed from a questionnaire developed specifically for this process that was opened during a three week period in June 2017. Over 2,400 responses were received, with responses ranging from answers addressing single questions to completed questionnaires.

The information collected indicated that the priorities, goals, strategies and actions identified in the previous Academic and Research Plans were supporting the achievement of the primary goals of our *Eyes High* vision. As well, the analysis of data collected from the questionnaire supported evolutionary, rather than revolutionary changes to the Plans. Analyses and synthesis of data and information gathered informed the decision to create an integrated model for the Academic and Research Plans (see Figure 2).

While the Plans co-exist and are linked in the Integrated Model, they also can be detached from one another. This flexibility is necessary since each Plan informs and responds to both internal and external needs and requirements. In addition to driving towards the *Eyes High* Strategy 2017-22, the Academic Plan must respond and relate to the Adult Learning Principles (access, affordability, quality, coordination, and accountability) of the *Alberta Ministry of Advanced Education*, and the Research Plan must respond and relate to the *Alberta Strategic Innovation and Research Plan* (ASRIP) and to federal government funding agencies.

The initial proposal to use an integrated model for the Academic and Research Plans was supported in over 30 consultation sessions that were held with academic staff, students, community groups, government representatives and governance committees.

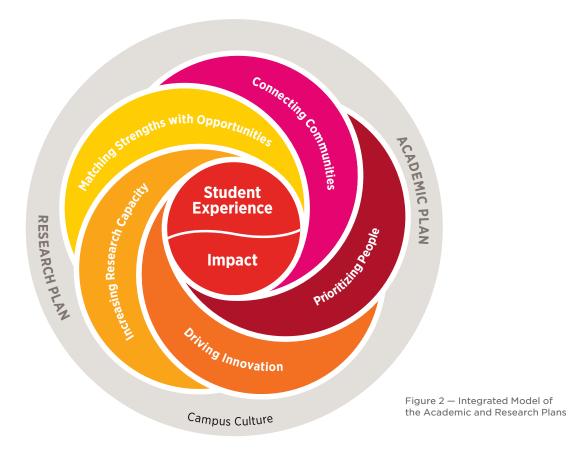
An integrated model for the Academic and Research Plans

Creating an Integrated Model for the Academic and Research Plans supports our commitment to more strongly connecting research and teaching activities.

The image below represents the Integrated Model, demonstrating how the two plans align. The left half of the model highlights the Research Plan, while the right half highlights the Academic Plan. They are connected through the value propositions of **Student Experience** and **Impact**, and share a common priority, **Driving Innovation**. Each plan has three priorities with identified major goals and strategies that, once achieved, will allow us to deliver on the value propositions of the university and the *Eyes High* Strategy 2017-22. The priority of Driving Innovation reflects the *Eyes High* vision of being an entrepreneurial university. Within each plan that priority will have mutual elements as well as unique strategies. Collectively, the five priorities will

drive human, capital, and financial resource allocations on our campus over the next five years.

The centre circle captures the value propositions of the university — *Impact* and *Student Experience*. It is clear from our engagements with external stakeholders that these value propositions of research-intensive universities are not always well known, obvious, or understood. Thus, we have taken the opportunity to highlight the inherent value of being part of a research-intensive university through these value propositions. The entire model is surrounded by the *campus culture*, one that is inclusive, curiosity-driven, and respectful.





Value propositions of the university

Impact

Our purpose as a university is to contribute to the body of world knowledge while simultaneously engaging our students in learning guided by processes of discovery, creativity, and innovation. The knowledge we create promotes cultural understanding and social justice, improves quality of life, and helps to secure a prosperous and sustainable future.

A research university plays a special role in our society. We use our scholarly expertise to discover, create and innovate. We evaluate ideas critically and continually grow our understanding of phenomena across diverse academic disciplines and subjects. We foster informed debate and objective approaches for understanding, unpacking, and solving complex problems. Most importantly, we design relevant, meaningful learning experiences for our students that enable them to develop curiosity, communication skills, critical thought, perspective, and disciplinary excellence.

Our university is viewed as a trusted organization that generates objective information and promotes critical discussion for public benefit. In this era of alternative facts, societies need evidence-based decision- and policy-making. Our knowledge creation can be laser-focused to solve important problems within prescribed disciplines, or we can open new doors for inquiry and expression not currently appreciated or anticipated by society.

We create this knowledge through the research activities of our academic staff, students, postdoctoral scholars, and staff. Each person comes to our university with a unique world view, and through our research we continually challenge and advance perspectives. We are a dynamic collaborative with each individual scholar on a life-long journey of personal growth and professional development.

With the privilege of being a scholar at a research university comes important responsibilities — to strive for excellence in research endeavours, to lead by example, to use expertise to advance societal goals,

to commit to life-long learning, and to impart the knowledge gained through research to society. We also have a responsibility to engage our communities that we serve and lead in discussions about important issues where evidence is required to better understand those issues or even resolve them. At every level of our engagement — local, provincial, national, global - we strive to understand how our scholarly work can be meaningfully applied and integrated, and also how our research and teaching activities can be informed by those communities. Our community engagement significantly influences our research directions. The goals and aspirations of Calgarians and Albertans feature prominently in those discussions, but as a global intellectual hub, our community also includes and extends well beyond the many academic communities in which we actively participate throughout the world.



Student Experience

At the University of Calgary, we take a comprehensive view of student experience — one that supports and promotes intellectual, social, emotional, mental and physical growth and development.

Our view of student experience encompasses the journey from applicant to alumna/us, and includes all aspects of students' university engagements, including outstanding curricular and co-curricular learning experiences. Our undergraduate and graduate students benefit from pursuing their education at a university where discovery, creativity, and innovation intersect to form the central vision and mission.

Our students are stimulated by inspiring academics who create exceptional learning experiences using pedagogies designed to challenge and nurture in a wide variety of settings. Students are given opportunities to engage in a multitude of co-curricular opportunities and experiences — from student clubs, to active living courses, to volunteering with various community agencies. We value both disciplinary knowledge and skills, as well as the transferable skills that prepare graduates to thrive in the workplace. Students develop ways of thinking critically, creatively, and entrepreneurially, allowing them to create their own futures.

At the University of Calgary, we are committed to ensuring a safe, inclusive, and equitable environment for our students. In order to achieve a distinctive student experience, we create opportunities for students to:

- develop as people, professionals, and leaders in their communities;
- explore, take risks, and push boundaries, even if this makes them uncomfortable;
- build resiliency and a growth mindset through overcoming adversity and learning from challenges;



- be self-reflective, appreciate the perspectives of others, and develop relationships that are cultivated through everyday interactions; and,
- appreciate the world around them and understand sustainability principles at a broad level.

This student experience is facilitated by:

- high-quality academic education enriched by research and experiential learning opportunities;
- access to services, resources and opportunities required for them to flourish academically and personally in school, which provides preparation for life following graduation;
- a sense of being valued and respected through active student inclusion in processes of consultation and governance leading to decisions that affect them;
- interactions with the facilities and environment that surround students every day and welcome them to spend time on our campuses;
- a sense of belonging to a community of peers that generate pride in their affinity to the University of Calgary;
- establishment of a fair and just campus where policies and regulations are in place to ensure a safe, welcoming and respectful environment where everyone is held accountable for their actions;
- an acknowledgement and acceptance of diversity and an emphasis on equity and inclusivity.

(continued)



We provide a vast array of opportunities and activities on our campuses to ensure that each student has the opportunity, ability and responsibility to create and shape their own student experience, and we acknowledge the importance of the autonomy of each student in generating their own personalized path.

University of Calgary graduates bring a spirit of curiosity, inquiry, creativity and collaboration to the opportunities and challenges they encounter. They have the knowledge, skills, ambition, determination and integrity to make a difference in a complex and changing world. They are entrepreneurial thinkers, demonstrating the intellectual courage to critically examine information and to explore creative ways to integrate their knowledge, research skills and experiences to grow ideas into innovative solutions. They communicate effectively across audiences and value and engage diversity, integrating new perspectives and multiple ways of knowing to enrich all of their interactions. University of Calgary graduates are skilled collaborators and engaged citizens who through their thoughts and actions — demonstrate a commitment to sustainability in the ways they use their leadership skills to strengthen the social, natural, economic, and cultural fabric of their communities.

Impact and Student Experience value propositions are mutually reinforcing. By creating a positive student experience, we will create graduates who will positively impact society as engaged citizens and lifelong learners. The new knowledge we create through cutting-edge research results in societal impact, which produces an environment where students can achieve their potential and flourish. They develop critical thinking, and communication skills and leadership attributes that promote impact and build influence.

Campus Culture

Our energized *Eyes High* Strategy 2017-22 highlights that an inclusive, curiosity-driven and respectful campus culture is key to our success.

Campus culture creates an enabling backdrop that propels our Academic and Research Plans. During the process to energize *Eyes High*, we asked the question "What does campus culture mean to us?"

Our campus response: It means collaborating across groups and embracing meaningful two-way communication that is honest and open. It also means overcoming structural, social and cultural barriers to create a safe, inclusive, healthy and respectful environment — one that values diversity and the dignity of every person. It means we work and learn in a sustainable manner, developing new skills, seeking balanced lifestyles, building our careers, taking initiative, and recognizing one another for our accomplishments. We value a culture that encourages us to listen to one another, enriches our understanding of other perspectives and voices, inspires us to engage purposefully, and welcomes open dialogue and debate (*Eyes High* Strategy 2017-22).





The Research Plan

Our three Research Priorities — Matching Strengths with Opportunities, Increasing Research Capacity, and Driving Innovation — combined with a commitment to nurturing campus culture will propel the University of Calgary forward in our quest to achieve our refreshed *Eyes High* Strategy 2017-22 over the next 5 years.

We will demonstrate through discovery, creativity, and innovation the impact a research-intensive university can have on societal goals and aspirations, and we will create a student experience that will produce the next generation of leaders.

As with Eyes High, our Research Plan is an evolution of the previous plan that enabled us to advance on the national stage in almost all research competitions, including major programs such as Canada Excellence Research Chairs, Canada First Research Excellence Fund, Canada Foundation for Innovation, Banting Fellowship and Vanier Scholarship Competitions, and Tri-Council competitions. Our clear articulation of research priorities, reflecting our scholarly excellence, and our institutional investments in them, were key components in our success.



Figure 3 — The Research Plan

Looking forward, our Research Plan will play an important role in identifying areas where we can make significant contributions to the Alberta Research and Innovation Framework (ARIF). This framework, launched in December 2017, "sets out shared outcomes and aspirational innovation targets for government, and provincially-supported research and innovation organizations, such as Alberta Innovates and postsecondary institutions. The shared focus inspired by the *Framework* and an accompanying ARIF Action Plan will help Alberta achieve economic, environmental and social prosperity, enabled by research and innovation." [ARIF, 2017]. The University of Calgary can contribute significantly to achieving the outcomes in the Framework: Engaged Individuals and Communities for a Healthy Alberta, Environmental Stewardship and Climate Leadership, Effective Resource Management, and Economic Diversification and Job Creation. We will contribute through all three of our priorities and engage with provincial partners to achieve innovative advances in the areas of health, energy and GHG mitigation, environment and climate adaptation, food and agriculture, and fibre and bioindustry. We will also lead in the development of emerging technologies that support "Growing Alberta's Green Economy", "Advanced Materials and Manufacturing" and the "Digital Economy".

Of course, our collaborations and partnerships extend well beyond Alberta and we will engage with our national and international communities to mobilize our research capacity on major initiatives. Our Research Plan provides suggestions and approaches for participating in these collaborations.

The three priorities in our Research Plan must also reflect and implement the Foundational Commitments from our Eyes High strategy — Sharpen Focus on Research and Scholarship, Enrich the Quality and Breadth of Learning, and Integrate the University with the Community. In each section, we highlight how our priorities help to deliver on these commitments. in the next section we provide an example.

Sharpen Focus on Research and Scholarship

Society benefits when scholars focus their collective effort in areas of strength. We create synergies that energize our researchers around issues that are globally relevant and of great importance to our stakeholder communities. We demonstrate leadership in areas of strength and monitor all areas of the academy for emerging ideas. We will also refine the ways in which we measure the impact of our work and share our scholarship.

In our previous research plan, our university identified six priority areas where we had national and international scholarly excellence, and we could bring together scholars from many disciplines to tackle some very important research themes. By building a Confederation of Scholars from the ground up in each of the Strategic Research Themes, our scholars were able to identify grand challenges where they felt the University of Calgary could make big advances. Each multidisciplinary team developed their own research strategy for achieving results and the strategies were endorsed through our processes. Once approved, our institution invested to help the groups achieve their goals. The six research themes were launched in different years because it took time for the Confederation of Scholars to discuss and formalize their strategies. They are now being implemented and, through our dashboards, we are monitoring our progress. This is an example of 'focus' that also captures the other attributes included in this foundational commitment of Interdisciplinary Partnerships, Support and Recognition, and Knowledge Translation, Implementation, and Engagement.

Our scholars have made significant advances in each of these Strategic Research Themes, but we heard loud and clear via our consultations that while these themes have been and continue to be successful, there are new emerging research strengths across our university and new major opportunities that we must capture and nurture. Our expertise is evolving with the recruitment of new faculty, our faculties have identified new priorities that we can build upon, and we have new support systems that enable collaborations and efficiencies across our campus community. The updated priority 'Matching Strengths with Opportunities' addresses this changing research landscape.

Strategic Research Themes

Energy Innovations for Today and Tomorrow Infections, Inflammation and Chronic Diseases

Human Dynamics in a Changing World Engineering Solutions for Health

New Earth-Space Technologies

Brain and Mental Health

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Matching Strengths With Opportunities

As a Comprehensive Academic and Research Institution (CARI), the University of Calgary's Research Plan reflects the goals and aspirations of scholars across 14 different faculties and the School of Public Policy. Scholarly excellence is paramount as we strive to support the future of our local, provincial, national and international communities. We promote and assist our excellent individual scholars by creating an environment that enables each and every person to explore new ideas along their academic journey, to foster open dialogue and engage in critical discussions with partners, to mentor each other on best practices, to participate in cutting-edge disciplinary discussions, to take risks, and to help scholars navigate the cultural features of their individual disciplines. In short, we create a diverse respectful community of scholars bound by the pursuit of individual excellence in their chosen academic disciplines.

Each individual scholar is best placed to identify opportunities or challenges in their field. Our university supports each faculty member to strive for a leadership role in their discipline by encouraging them to explore opportunities with other academics, academic societies, as well as partner organizations. Herein lies a tremendous opportunity for our faculty to shape the future of their disciplines through their cutting-edge research contributions, participation in national and international dialogues, and partnering where appropriate with community organizations,

non-governmental organizations, industry, and governments at all levels — municipal, provincial, national, and international. Through matching their individual strengths with opportunities, faculty enrich and accelerate their own academic journey, and also open new doors for students to participate in real-world research experiences and become part of important research conversations earlier in their careers. The ability of our individual scholars to recognize and engage in exciting opportunities is the foundation of our academic enterprise, and the application of their excellent research skills differentiates the University of Calgary as a community of leaders.

Society has no shortage of complex problems, and we have an insatiable appetite to increase our fundamental knowledge of the world around us. Our institution has incredible research capacity when we combine our collective research expertise to tackle major issues that are vital to the wellbeing of our societies.

This integration of expertise spans different levels of disciplinary, interdisciplinary, or multidisciplinary research. We encourage the natural coalescence of groups of scholars from a particular discipline to both identify important challenges they wish to confront and also to influence the direction of their discipline. These groups form primarily at the level of departments and/or faculties. At another level, scholars from different disciplines have recognized that to advance solutions to some complex problems we need contributions, critical thought, and research methodologies drawn from a breadth of areas of inquiry. Great universities promote these multidisciplinary research approaches both within their own institution and through their scholars participating in provincial, national, and international collaborations.

1.1 Ensure that our existing six Strategic Research Themes achieve their potential and evolve

- Evaluate the successes of the six Strategic Research Themes in year four of their implementation and communicate advances.
- Call together the Confederation of Scholars for each theme to revisit progress on solving the original grand challenges and identifying additional major problems.

1.2 Identify potential cross-cutting emerging areas that meet our institutional criteria

- Convene multi-faculty teams to discuss emerging areas where the University of Calgary has significant research capacity and excellence to lead research initiatives.
- Coordinate discussions with faculties to support the development of their research strategies.
- Explore emerging cross-cutting campus initiatives, such as child health, cybersecurity, one health, and precision medicine and precision public health.

1.3 Establish seed funding mechanisms and mentorship to promote research leadership in building disciplinary and/or multidisciplinary research consortia for local, provincial, national, and international opportunities

- Create new web-based tools or apps for scholars to identify strategic research opportunities, partnerships, and funding opportunities.
- Create teams who can mentor individual scholars on building new major research initiatives and delivering successful programs.

1.4 Engage external communities to identify emerging opportunities where our institutional research capacity could have a major impact by creating new knowledge

- Host a series of evening or weekend events to exchange information with external partners on important issues.
- Create pitch competitions on thematic problems and invite external partners to evaluate potential solutions.



Increasing Research Capacity

To reach our Eyes High goals, we will expand our capacity by tapping into new approaches for conducting research and ensure that students, application of these new methods. Our scholars can that increase the 'number of eyes' gathering new and important information from around the world. We can work with individuals outside our university applications including early detection of diseases that would represent a huge societal benefit. We can explore novel avenues for cultural understanding, such as 'performance as research', and promote stage. We can explore how design principles from architecture and engineering can produce advances digital revolution that is impacting many disciplines. While we can't add hours to the day, we can ensure that our processes supporting research activities meet the highest standards of operational efficiency and compliance that enables our scholars to focus on tremendous infrastructure assets at the University of Calgary and we must ensure the sustainability and access to these facilities for both our present and future generations of scholars.

The combination of exploring new research methodologies and paradigms, along with the priority in our Academic Plan of attraction and development of world leading scholars, ensures that we will increase our research capacity for both curiosity-driven and solution-oriented research.

2.1 Create cross-cutting initiatives on new research methodologies, modalities, and paradigms

- Explore new approaches for discovery and creativity, and fund workshops to evaluate approaches.
- Explore new ways for collaborating on research initiatives that strengthen or link disciplines, or groups from different areas of the world.

2.2 Create avenues to access shared major infrastructure across our university

- Ensure that IT resources enable advances in all domains of research.
- Coordinate campus-wide investments in computing infrastructure, access to software, and data management.
- Create a council of scholars from different disciplines to monitor global trends in computing, analysis, and visualization.

2.3 Support a new round of *Eyes High* postdoctoral scholars and graduate students

- Launch funding competitions for Eyes High postdoctoral scholars and graduate students.
- Expand access to professional development programs for postdoctoral scholars and graduate students.

2.4 Create more time for discovery and creativity by streamlining processes while ensuring compliance

 Implement a research management system for efficient processing of electronic documentation and approvals for grants.



Driving Innovation

Innovation has many meanings and interpretations, as it is both a process and an outcome. Irrespective of any interpretation, driving innovation has two key parts: a) a recognized need and b) a novel idea. Linking these two parts at our university through entrepreneurial thinking as described in the Eyes High Strategy 2017-22 will be very exciting for creative endeavors championed by all units. Our university interprets a recognized need very broadly reflecting our highly diverse cultures and enterprises. The 'need' could be reaching students at risk through new teaching approaches, reducing wait times for health treatments, increasing employability of Canadians, improving quality of life for families caring for aging parents, producing new treatments to improve our mental health, promoting cultural understanding, creating new technologies to improve personal efficiencies in work or play, or even improving enterprise solutions for our systems that are cumbersome and time-consuming. Given that we are a community of 40,000 people always scanning for ways of making improvements, the list of potential needs is boundless. We also have virtually unlimited capacity to generate new ideas to address those needs. We are a community composed of creative individuals always willing to pursue new challenges, especially when it benefits our societies and environments, and as a research university we have engaged scholars, facilities and leveraging opportunities with partners from industry, not-for-profit organizations, governments, and philanthropists who can help us move ideas rapidly from conception to application.

The most enterprising universities do an excellent job of linking need(s) with great ideas through supporting processes that help to drive innovation. These processes could be related to creative and entrepreneurial activities, technology transfer, or idea diffusion, and apply across the entire spectrum and breadth of our university from Arts to Vet Med, or from administration to University Relations, from first-year students to professor emeriti. Whatever stage of development or area of application, our university is equipped to mentor and advance the objectives of the individual entrepreneur or groups on their journey. Some of our innovations will be disruptive, some will create new wealth, but many will not. All however, will create value through lessons learned, improvements for society, and growth of creative, critical, and entrepreneurial thinking by our students, faculty, and staff that will deliver long-term benefits.

3.1 Create research competitions for prizes that solve major societal or community issues

- · Involve community in establishing major topics for investigation and criteria for success.
- 3.2 Create cross-campus programs to support entrepreneurial thinking and initiatives
- Create the Hunter Hub for Entrepreneurial Thinking and facilitate programs and activities across our campuses.
- Create and coordinate venues for entrepreneurial activities.
- 3.3 Explore the expansion of facilities that support the diverse needs of students and faculty for the development of ideas
- 3.4 Create pathways and support mechanisms for knowledge translation and commercialization, and lead discussions about diversity of approaches that reflect the comprehensive nature of our scholarship
- 3.5 Transform the university into an 'early adopter' and 'test bed' for research ideas and technologies





Summary

Our Academic and Research Plans are the roadmaps that will guide us as we strive to achieve the vision of the Eyes High Strategy 2017-22.

These documents are mutually supportive and can be linked in an integrated model or detached from one another to respond to internal and external needs and requirements. Each Plan contains three overarching priorities, with one being shared (Driving Innovation). Together, these five priorities (Prioritizing People, Connecting Communities, Matching Strengths with Opportunities, Increasing Research Capacity, and Driving Innovation) will drive human, capital and financial resources allocations on our campus over the next five years. The goals and objectives relating to each of these priorities in our plans are bold and

ambitious, and they will be implemented systematically through our collective action. We will not only fulfill these goals and objectives, but we will also advance the value propositions related to *Student Experience* and *Impact*. These value propositions were supported by our students, faculty and staff through our consultation process to develop our plans. By championing and communicating these value propositions, we will support and build our campus culture so necessary to achieve the goals set out in the *Eyes High* Strategy 2017-22.

Enhancing our Value Propositions

Student Experience

Impact

Champion and Communicate

- Recruitment of excellent researchers and teachers
- Support for teaching and research
- · Enabling intellectual curiosity
- Provision of opportunities for undergraduate research
- Provision of support services, including those for mental health
- Provision of leadership and professional development opportunities, including experiential learning and work-integrated learning opportunities
- Value, appreciate, and understand diversity in all forms
- Opportunities for the development of communication skills
- Outstanding infrastructure

- New knowledge (discovery) has inherent value(s), develop channels to explain and promote these values
- Individual scholars pursue unfettered disciplinary excellence
- Recognize and reward research by scholars that has significant social and cultural value
- Assist our scholars to focus research on identifying and addressing needs of our societies
- Explore new ways of engaging with communities for outreach and provide funds to build communityengaged research partnerships
- Create incentive structures to promote multidisciplinary collaborations across our university
- Create incentive structures to promote collaborative research with NGOs, associations, and industry
- Develop communities of practice that can rapidly translate our fundamental discoveries into benefits for societies and our community — engage our alumni to advise on best practices
- Discuss and develop relevant metrics that can assess our progress on all types of research impacts

Our focus on creating a culture where entrepreneurial, creative, and critical thinking are valued and supported will help to respond to future opportunities and challenges.

