

# Cultivating Innovation

College of Engineering | 2018-2025 Strategic Plan

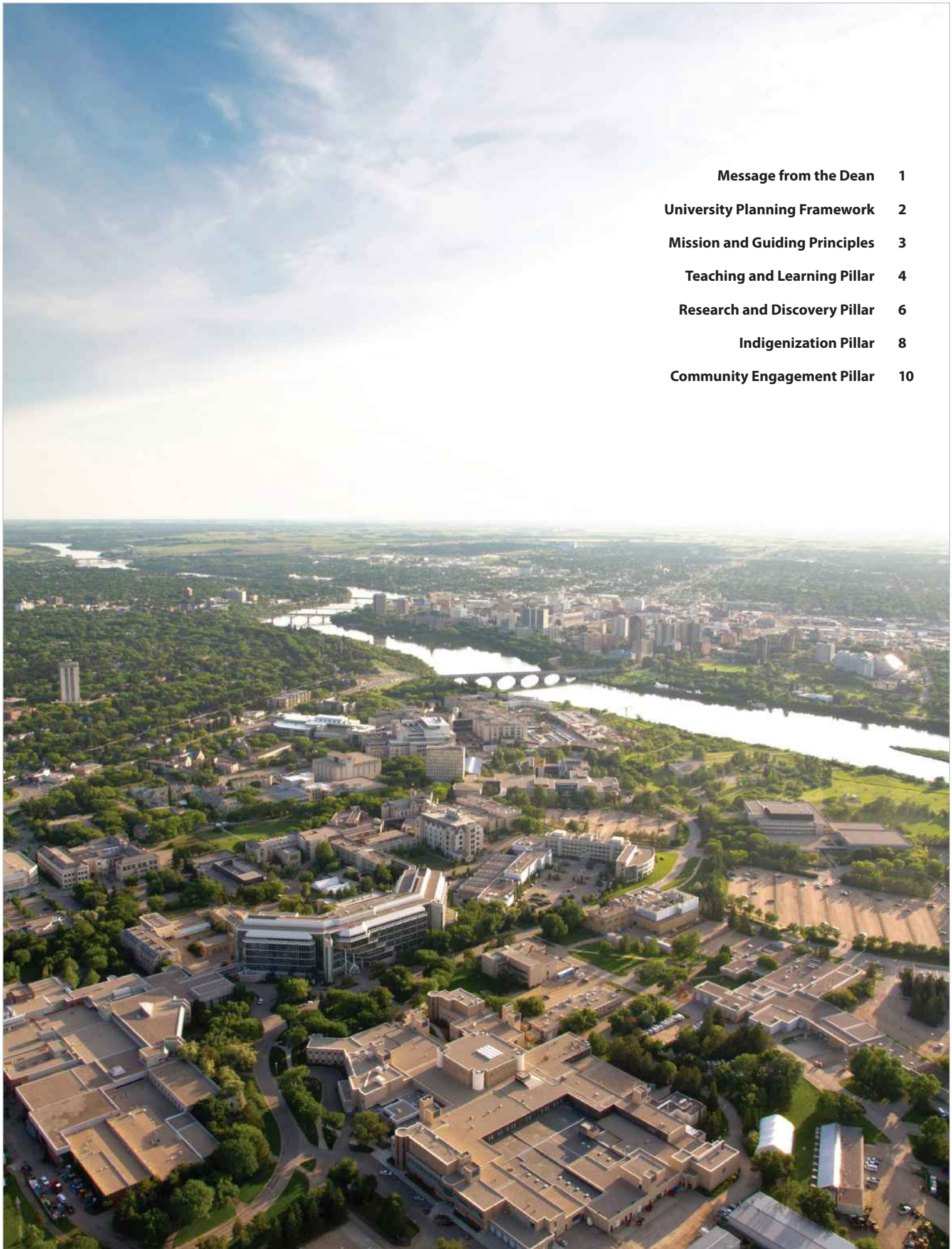


UNIVERSITY OF SASKATCHEWAN

College of Engineering

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# Message from the Dean

## The Dean's Bridge

The College of Engineering at the University of Saskatchewan is emerging into a new decade with great possibility on the horizon. Harkening back to the "Dean's Bridge" – built by CJ MacKenzie on a one-year leave from the University in 1932 – the college has built bridges out into the campus community. While we live in a time when building walls is a popular rhetoric, we recognize that bridges which bring people together are more powerful than walls, and our plan is built around this idea.

## Laying the Foundation

Over the past year, college leadership has invested in three foundational planning and consultation processes: Strategic Enrollment Management, led by our Associate Dean Academic, Bruce Sparling; Research Planning, led by our Interim Associate Dean Research, Terry Fonstad; and Indigenous Peoples Initiatives, led by our Indigenous Peoples Initiatives Coordinator, Matthew Dunn. In addition to these college-wide plans, there are plans for seven units within the college: our four departments, the Ron and Jane Graham School of Professional Development, the external relations team, and our college operational team. Without any one of these parts, the college could not function – but taken together, we are robust, resilient, and pragmatic – much like the province of Saskatchewan. This strategic plan extracts highlights from each of these important units to give you a picture of who we are today – and who we hope to become by the end of this decade.

## Identifying What We Value

For the first time in recent history, we have also spent time exploring what values are most important to the college – what identifies us as unique and distinctive. When I speak with our alumni and the people who employ our graduates, they talk about our no-fuss pragmatism and a willingness to roll up our sleeves and get the job done. They also tell me about how our students can work with anyone and build a community and a team. We want to keep those values alive and well in our college. We also want to move into the future and be part of the innovation enterprise that drives the economy of Saskatchewan, working effectively with Indigenous communities to build a future that works for everyone. We believe that our four guiding principles – Inspiring Success; Cultivating Innovation; Building Respect; and Delivering Value – will provide all of us with focus as we move forward.

## Building For Our Future

Many of you who are familiar with the college will recognize that we need new infrastructure to achieve these goals. Our students, who have a long history of tramping across campus to go to classes in the Thorvaldson Building, continue to do so – in increasing numbers. Our young researchers struggle to work in labs that can barely accommodate their equipment and their needs for ventilation. We need space that will serve the college well for the next 40 years – not just temporary solutions that we can creatively pull together for another academic year. As the Rutherford Rink and the curling rink are demolished in the fall of 2018, you can expect to hear more from our college about plans for building for our future.

"We believe that our four guiding principles – Inspiring Success; Cultivating Innovation; Building Respect; and Delivering Value – will provide all of us with focus as we move forward."

I very much look forward to sharing these plans with all of you as we move forward.



**Suzanne Kresta, PhD, P.Eng., FEC**  
**Dean**  
**College of Engineering**  
**University of Saskatchewan**

# Framework

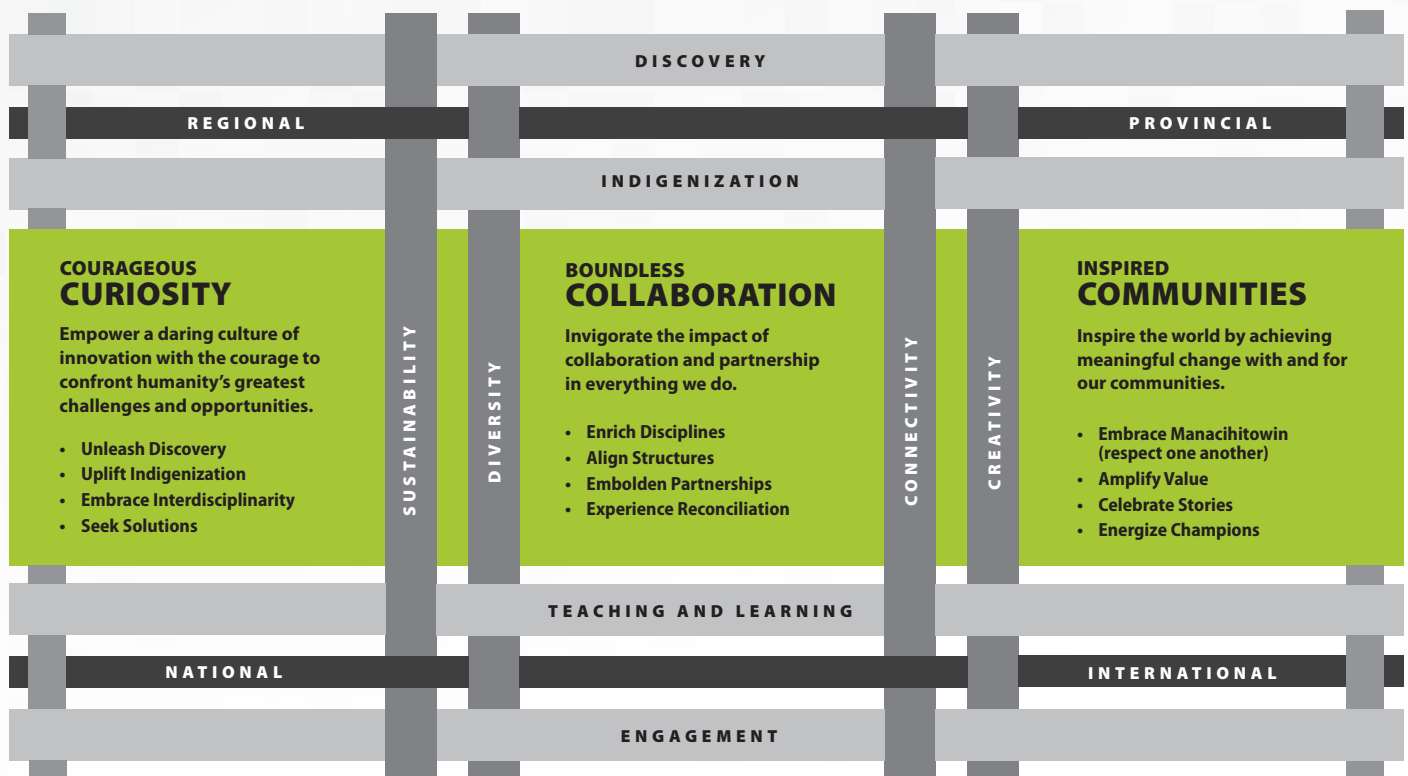
## UNIVERSITY PLAN

### THE UNIVERSITY THE WORLD NEEDS

Nikānītān manācihitowinihk  
Ni manachīhitoonaan

#### INTENT OF THE UNIVERSITY PLAN:

Through this plan, the University of Saskatchewan will be the university the world needs.



#### 2025 ASPIRATIONS

**Transformative Decolonization Leading to Reconciliation.** Indigenous students, faculty, staff, and communities are holistically strengthening the spirit and methodologies we inhabit.

**Productive Collaboration.** Community, private-sector, and international partnerships animate every facet of our research enterprise.

**Meaningful Impact.** Our knowledge, discoveries, and innovations are helping communities achieve their social, cultural, and economic goals.

**Distinguished Learners.** Our graduates are among the most inventive, collaborative, and sought-after in Canada and around the world.

**Global Recognition.** Our research, graduates, academic programming, and reputation are recognized as world-class.



# Mission and Guiding Principles

## Mission

In our teaching, research and day-to-day work, we inspire and celebrate success, cultivate innovation, build respect, and deliver value. We address important problems to engineer a strong future for Saskatchewan. We know that our actions and our graduates have the potential to change the world.

## Guiding Principles

### **Inspiring Success:**

We inspire and celebrate success in our college community and the engineering profession.

### **Cultivating Innovation:**

We encourage innovation in teaching, research, and college operations. Both our students and our scholarly work are essential ingredients of a strong future for Saskatchewan. Through our graduates and our research, we can change the world.

### **Building Respect:**

We build respect through our actions and words. We honour the strengths of diverse perspectives and skills. We are constructive with feedback and listen with humble curiosity.

### **Delivering Value:**

We deliver value to our stakeholders through outstanding programs, engaging leadership, and research that addresses important problems and delivers practical solutions.



STRATEGIC PILLAR

# Teaching and Learning



Undergraduate students were proudly inducted into their chosen discipline during the annual Hard Hat Ceremony.

## STRATEGIC PILLAR

# Teaching and Learning

## Vision

We offer a transformative learning environment that engages and excites our students, helping them gain the knowledge, skills, and attitudes they need to thrive as engineers.

## Aspirations

### 1.1

Offer exceptional academic programs that distinguish our graduates as well-rounded leaders whose technical, professional, and people skills create positive change in the world.

### 1.2

Cultivate effective, evidence-based methods in teaching and learning to deliver an innovative, high-quality engineering education and an exceptional student experience.

### 1.3

Embrace continuous program improvement to enhance learning outcomes and ensure relevance for our external stakeholders.

### 1.4

Provide meaningful work-integrated and experiential learning opportunities for all students, positioning them for success in their careers.

### 1.5

Diversify and grow our student body using strategic and effective enrollment management practices.

## Commitments

Build an accredited engineering co-operative education program that connects students with opportunities in industry, government, and our community.

Implement a revised first-year engineering program that will be recognized as the most innovative and effective program in Canada.

Introduce new academic programming in these key areas: bioproducts and bioprocessing; sustainable energy and power; robotics and mechatronics; project management with Indigenous communities; and biomedical engineering.

## On the Horizon

We will continue to develop academic programming that meets the needs of our province and the profession. Expansion of access programs, post-graduate certificates, graduate student enrollment, and continuing professional development will be explored.

STRATEGIC PILLAR

# Research and Discovery



**Mechanical Engineering Professor Daniel Chen (left) supervised graduate student Mohammad Izadifar (right), who developed a heart patch that, in experimental animal research, regrew damaged heart tissue.**



## STRATEGIC PILLAR

# Research and Discovery

## Vision

We are leaders in creating knowledge and providing effective solutions that build a healthy and sustainable society, environment, and economy – for our province, the Prairies, and our Peoples.

## Aspirations

### 2.1

Distinguish ourselves for research excellence, particularly in areas of strategic importance to our province: engineering for agriculture, environment, health, sustainable energy, and mining and minerals.

### 2.2

Recognize and advance unique opportunities in engineering for sustainable infrastructure, particularly for rural, remote, and Indigenous communities.

### 2.3

Actively engage with industry, government, and the Peoples of Saskatchewan to foster genuine and mutually beneficial partnerships.

### 2.4

Collaborate with university colleagues to co-create dynamic and impactful knowledge, expand our faculty and graduate student complement, and deliver a superior graduate student experience.

### 2.5

Support, communicate, and celebrate outstanding research undertaken by individual researchers and interdisciplinary teams.

## Commitments

Develop and implement an external engagement strategy that creates clear linkages between community, industry, government, and the college.

Support the success of individual researchers while providing incentives for them to contribute towards college-wide research goals.

Expand research capacity by supporting and establishing research chairs and functional research clusters in each of our areas of preeminence.

## On the Horizon

We will reimagine and invigorate the ways in which we investigate, discover, and undertake research. A broad spectrum of approaches, methods, and types of research will help us create value for our communities, our province, our Peoples, and the world.

STRATEGIC PILLAR

# Indigenization



Duncan Cree, an Assistant Professor in the Department of Mechanical Engineering, does research in the area of materials science; he has helped establish access to engineering programs for Indigenous people.

## STRATEGIC PILLAR

# Indigenization

## Vision

We provide meaningful access to engineering for Indigenous Peoples, while building and maintaining respectful relationships with Indigenous communities.

## Aspirations

### 3.1

Build respectful and reciprocal relationships between the college and Indigenous communities.

### 3.2

Partner with Indigenous communities to share knowledge and explore solutions that achieve their social, cultural, and economic goals.

### 3.3

Facilitate access to engineering for Indigenous Peoples through innovative pathways and holistic student supports.

### 3.4

Provide an inclusive environment in the college that welcomes Indigenous Peoples, highlighting and celebrating Indigenous understanding.

### 3.5

Increase awareness of engineering opportunities and expand Indigenous enrollment through outreach and recruitment.

## Commitments

Create an Indigenous Resource Centre that is open to all students, staff, and faculty, and designate a space in the building for smudging.

Secure sustainable funding for the Indigenous Peoples Initiatives Community (IPIC) Engineering Access program and increase the number of students that participate.

Implement a community engagement strategy that facilitates meaningful Indigenous engagement and co-creation of knowledge with various First Nations in Saskatchewan.

Develop a Certificate in Project Management with Indigenous Communities program in collaboration with both industry and indigenous community leaders.

## On the Horizon

We will celebrate, share, and embed Indigenous content and ways of knowing in everything we do.



STRATEGIC PILLAR

# Community Engagement



Engineering alumni Myron Stadnyk (left) and Jonathan Wright (right) returned to the college to share with students their experience as leaders and CEOs.

## STRATEGIC PILLAR

# Community Engagement

## Vision

We value authentic engagement and relationships. Through collaboration, we will enhance our partnerships to strengthen our reputation, student and alumni experiences, and our overall success.

## Aspirations

### 4.1

Build a respectful, inclusive, and diverse culture where people are welcomed, supported and encouraged to thrive.

### 4.2

Build and maintain relationships between faculty, staff, students, alumni, industry, government, and our community partners.

### 4.3

Communicate, celebrate, and advance the college's reputation and accomplishments.

### 4.4

Foster an understanding and appreciation for the need to nurture mutually supportive relationships with our stakeholders.

### 4.5

Serve as leaders in our community who are responsible and contributing members of the engineering profession.

## Commitments

Establish a Dean's Advisory Council composed of external partners who provide perspective and advice on strategic directions and opportunities for the college.

Develop and execute communications, branding and marketing plans that engage our stakeholders and reinforce our role, contributions, and value.

Establish an alumni lifecycle engagement plan that interacts with our partners and alumni, from Sci-Fi to Planned Giving.

Endorse and support the Engineers Canada commitment to reach or exceed 30 percent female EIT registrants by the year 2030.

## On the Horizon

We will deliver value by listening, responding, and building opportunities for our college and community stakeholders.

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