November 2021 MICA Launch Event Presentation

Presented by
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November 17 and 18, 2021

We would like to acknowledge that Saskatchewan Polytechnic is situated on Treaty 4 and Treaty 6 territories and the ancestral lands of the Cree, Saulteaux, Dene, Dakota, Lakota and Nakoda peoples and the traditional homeland of the Métis.

SASKATCHEWAN POLYTECHNIC

SASKATCHEWAN POLYTECHNIC ADVANTAGE


Image Credit: Saskatchewan Polytechnic

- One of **13** polytechnics in Canada and the **only** polytechnic in Saskatchewan
- Campuses in Saskatoon, Regina, Moose Jaw, and Prince Albert and extensive micro-credential opportunities
- More than **191** programs and apprenticeship training
- **14,990** students; **2,523 Indigenous** students
- **Flexible and responsive to** industry and community partners for initiating, facilitating applied research opportunities
- **Strong** collaboration background with institutions, organizations, industry and community
- **Five Applied Research Centres**
- **877% increase in applied research revenue over past 6 years**

Saskatchewan Polytechnic (SP) engages the minerals industry innovation ecosystem to deliver applied research projects with mining companies, suppliers, other researchers and innovators. Our MICA focus for training and applied research are:

- Digital transformation
- Reliability and maintenance - Internet of Things, Automation & Processes
- Environmental science, solutions and sustainability
- Supply chain development and management

Sask Polytech works with companies on innovations that can be readily commercialized as part of the Mining Innovation Commercialization Accelerator (MICA) Network.

Why we want to be part of MICA

- In order to continue growing and inventing new industries sometimes we need to also learn, accept & integrate the ideas of other innovators
- Quicker, smarter, and more efficient adaptations can come from networking, collaboration and learning from the outside world
- Proof-testing is often required to take ideas from being quirky to being smart innovations. That process works better with reviews by others.
- All of these goals can be realized with networking in the most effective ecosystems out there
- We have great ideas to bring to the rest of Canada
- We can provide our unique cross-industry networking & collaborations
- We have big hearts & work hard to be open minded

Uniqueness of Saskatchewan

- Saskatchewan is a young province with a small population & a large geography;
- We are greatly blessed with outstanding mineral resources, a big sky, interesting weather and agile/flexible people who know how to learn and innovate;
- Our love of the land & rivers, respect & interest in our original Indigenous peoples & their traditions inspire us to constantly improve
- We are home to a strong tradition of inventions & originality, related to high volume farming, O&G & Mining for example unique farm equipment; automation and an extensive equipment manufacturing culture, industry.

Uniqueness of Saskatchewan

- Modern efficient global potash mining has been underway here since the 1960's
- Created a full cycle uranium industry in the 1930's & 40's
- We continue to be a major Oil & Gas producer
- Precious minerals, like gold, along with base & energy metals are pursued here;
- Rare earth metals, diamonds, lithium exploration are ongoing in Saskatchewan & we have identified viable new claims for copper, iron ore & more;
- Per capita exports are significant and highlight a healthy & strong transportation network in a land-locked province with major international clients
- Early works in electrification, autonomous vehicles & alternative energy are underway. Our energy systems combined with world leading supply chain management systems can help lead the world toward decarbonization

Applied Research Centres That Move Innovation

Digital Integration Centre of Excellence (DICE)

Centre for Health Research, Improvement and Scholarship (CHRIS)

Sustainability-Led Integrated Centres of Excellence (SLICE)

- Innovative Manufacturing Centre (IMC)
  - Biomaterials Testing and Prototyping (B-TAP) facility
  - Research, Additive Manufacturing and Prototyping (RAMP) facility
- Hannin Creek Education and Applied Research Centre (HCEARC)
- BioScience Applied Research Centre (BARC)

Innovative Manufacturing Centres

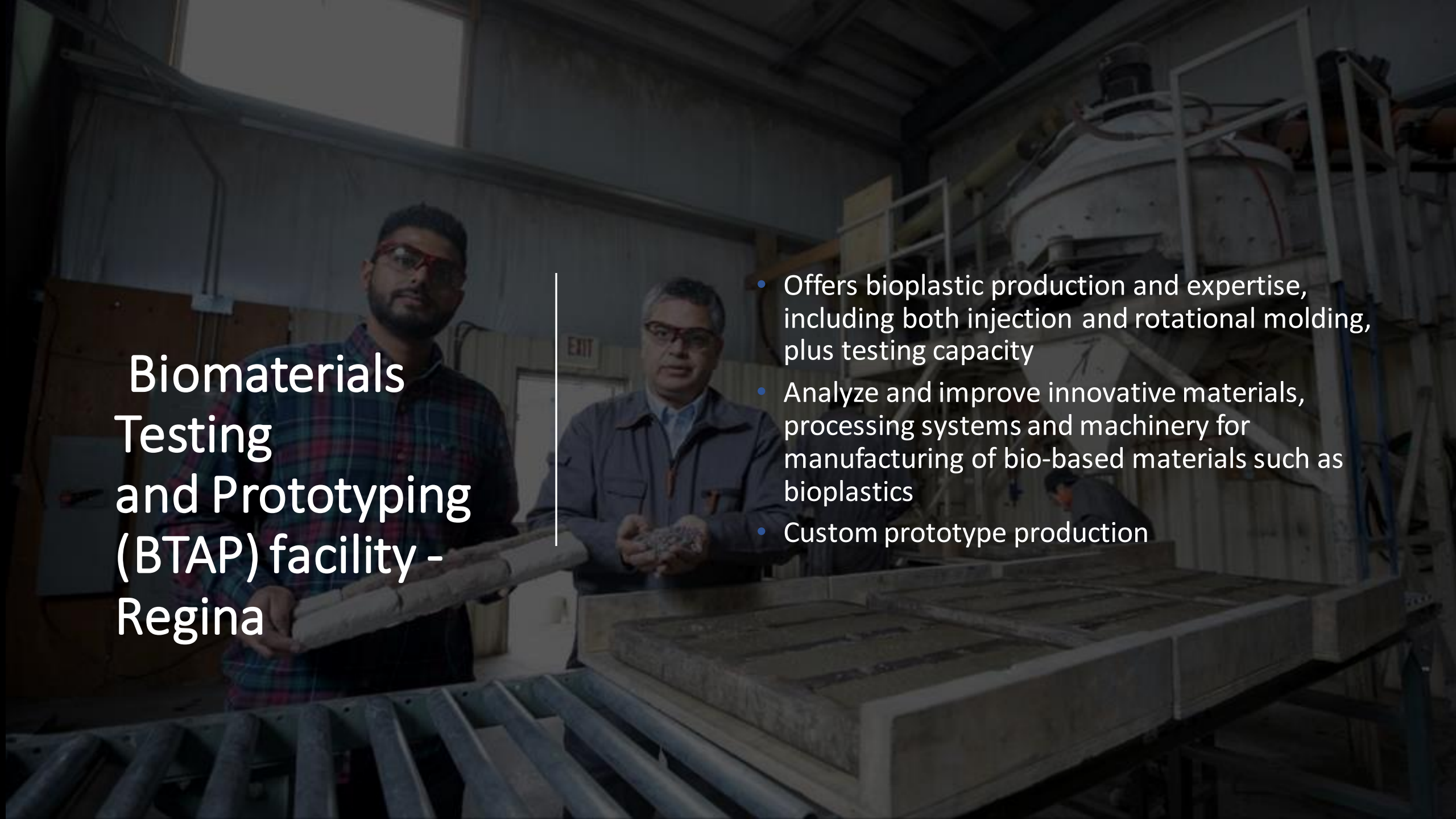
Research, Additive Manufacturing & Prototyping Facility (IMC-RAMP) - Saskatoon

- Saskatchewan's most extensive 3D printing & CNC facility
- Capacity to print more than 25 different materials, including metals
- Capacity to print large commercial parts, including for aerospace applications
- Sintering & resistance research furnaces for various materials, including metals

Innovative Manufacturing Centres

Biomaterials Testing and Prototyping (B-TAP Facility)

-Regina-



Biomaterials Testing and Prototyping (BTAP) facility - Regina

- Offers bioplastic production and expertise, including both injection and rotational molding, plus testing capacity
- Analyze and improve innovative materials, processing systems and machinery for manufacturing of bio-based materials such as bioplastics
- Custom prototype production

Hannin Creek Education and Applied Research Centre

- International acclaim
- Recognized by the United Nations University for its role in addressing the UN's Sustainable Development Goal (SDG) #15 - Life on Land: to protect, restore and promote sustainable use of terrestrial ecosystems.

BioScience Applied Research Centre (BARC) - Saskatoon

Offers experts access to applied research expertise to discover solutions to everyday problems. The BioScience Technology program at Sask Polytech is home to a team of instructors and research personnel whose strengths include:

- Molecular Biology
- Agricultural Bioscience
- Analytical Chemistry
- Analytical Instrumentation
- Biochemistry Microbiology

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Focus is on the Mining and Agriculture sectors

- Data Integration
- Data Integrity
- Data Analysis
- Data Storage

DICE
Digital Integration Centre of Excellence
SASKATCHEWAN POLYTECHNIC

- Asset Management and Monitoring
- Time Sensitive Networking
- Mesh Communication and Control
- Internet of Things
- Cybersecurity

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Sustainability-Led Integrated Centres of Excellence (SLICE)

- Industry centric
- Solutions-oriented
- Development and deployment centre

- SLICE will:
  - Advance sustainable resource management with a full life-cycle lens on economic activities in key fields of expertise including renewable energy, bio-materials, agri-food, and forestry.
  - Bring sustainable development to Saskatchewan and Canada through local technology solutions with global application potential.

SLICE

- Is home to a collaborative, integrated, transdisciplinary approach that is focused on understanding the relationships required to address complex issues related to sustainability.
- That approach will be achieved through innovative integration of multiple disciplines to address environmental challenges involving climate change and carbon-reduction strategies
- The center's pursuit of the integration of renewable energy, bio-materials, agri-food and forestry to find sustainable solutions is in itself a revolution that will tackle sustainability in its broadest sense.

Regional Innovation Partners

- Saskatchewan Research Council
- University of Saskatchewan
- University of Regina
- Prairie Agricultural Machinery Institute (PAMI)
- Canadian Light Source (CLS) Synchrotron
- International Minerals Innovation Institute (IMII)
- Fedoruk Centre for Nuclear Innovation
- Innovation Saskatchewan
- And many more

Thank you

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mahsi cho

marsee

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pidamaya

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