



International Minerals Innovation Institute

2015 Project Highlights

Vision: IMII will position Saskatchewan to be the world’s most innovative and efficient minerals jurisdiction through facilitating innovative education & training and research & development partnerships.

Mission: IMII is an industry-government-post-secondary education and research institutions partnership, and leader to inform, facilitate, coordinate and financially support industry-driven research and skill development that will enhance the growth and global competitiveness of Saskatchewan’s minerals industry.

2015 Accomplishments and Highlights

Mining Engineering Options

As of December 2015, 25 students at the University of Saskatchewan’s College of Engineering have enrolled in the Mining Engineering Options. In 2013 the IMII committed \$1.67 million to the University of Saskatchewan to grow its educational and research mission in mining and better position Saskatchewan as a mining centre in Canada. This resulted in the creation of new mining courses and options in geological, mechanical and chemical engineering for undergraduate students, and the addition of three new professors in the College of Engineering. Registration into these options became available to students in June 2015, and represents the return of mining engineering to the province.

Students Engaged in Mining Engineering Options Program

	CHE MINC	GEOE MING	ME MINM	Total
Year 2	1	2	1	4
Year 3	6	3	5	14
Year 4	1	1	5	7
Grand Total	8	6	11	25

Legend:

MINC—Chemical Engineering, Mineral Processing Option

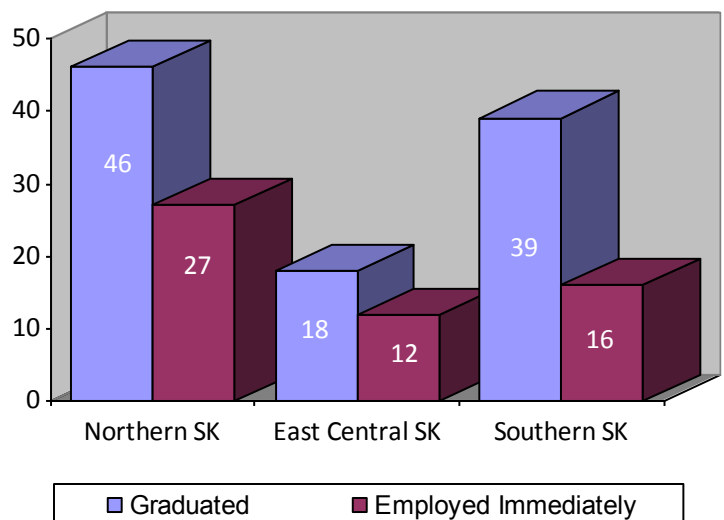
MING—Geological Engineering, Mining Option

MINM—Mechanical Engineering Mining Option

Mining Skills Training

103 students graduated from four regional colleges – Carlton Trail College, Cumberland College, Northlands College and Parkland College, in skills development training programs funded through the IMII with over 50% immediately finding employment in the mining sector. The IMII has funded \$1.3 million to these colleges to support mining-related training to ensure an adequate inflow of trained people in the industry.

2015 Skills Training Statistics by Region



IMII Quick Fact:

Industry has committed \$8.75 M to date in IMII to enhance and sustain the minerals industry in Saskatchewan

2015 Accomplishments and Highlights (Continued)

Mine School for the North

The Northlands College Mine School, funded in part by the IMII, welcomed the arrival of several heavy equipment simulators and the start of construction of the new school building. In 2014, IMII dedicated \$1.8 million to support the establishment of the Mine School and the training of northerners for jobs in northern Saskatchewan's mineral sector.

MiHR Study Released

The Mining Industry Human Resources Council, in partnership with and funded in part by contributions from the Saskatchewan Mining Association and IMII, released an updated forecast of hiring requirements in mining in Saskatchewan. The report provides data and analysis on industry needs now and into the future.

Mining Materials Research Cluster Funded

IMII signed funding agreements for the Mining Materials Research Cluster project with the University of Regina and the University of Saskatchewan for \$2.6 million. Participating in the Research Cluster and its first four projects are the University of Saskatchewan's College of Engineering – Departments of Chemical & Biological Engineering and Mechanical Engineering, and College of Arts and Science – Department of Chemistry, the University of Regina's Faculty of Environmental Systems Engineering, and the Canadian Light Source in Saskatoon. This innovation cluster will examine the corrosion of materials used in the fabrication of mineral processing and mining equipment used in Saskatchewan's potash industry.

Standardized Safety Training Developed

The Centre for Minerals Innovation at Saskatchewan Polytechnic, funded in part by the IMII, began to develop standardized training related to mining, in collaboration with members of the minerals industry.



Construction Begins on Mine School—Fall 2015



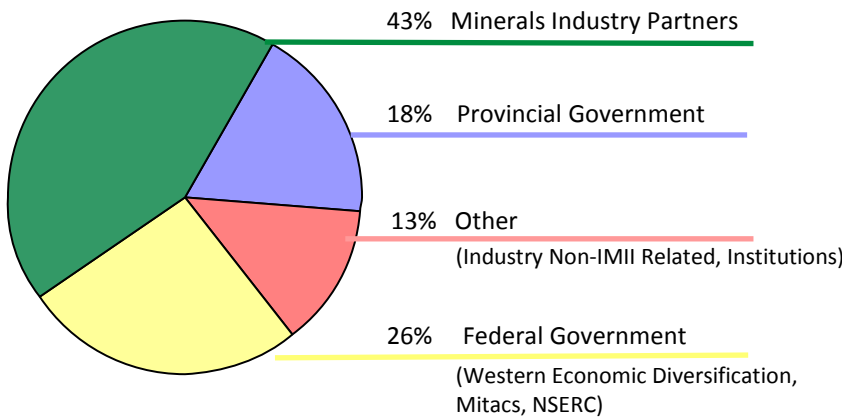
Mine Tech Program Graduates—June 2015
Northlands College



SESEMI Research Team at PCS Allan Mine Site
November 25, 2015

IMII Projects: 2012 - 2015

Project Funding Sources



Current Funding Partners

- ◆ Agrium
- ◆ BHP Billiton Canada Inc.
- ◆ Cameco Corporation
- ◆ K+S Potash Canada
- ◆ The Mosaic Company
- ◆ Potash Corporation of Saskatchewan
- ◆ North Rim Exploration Ltd..
- ◆ Government of Saskatchewan
- ◆ Mitacs
- ◆ Western Economic Diversification

Cumulative Project Funding

Research and Development	\$ 4,230,000	30%
Education and Training	\$10,089,000	70%
Total Project Budgets	\$14,319,000	

IMII Quick Fact:
 IMII involvement creates
 \$8 to \$10 of Research and Development for
 every \$1 that an industry member invests.

Improving the Value Chain for Industry	Better Serving the Interests of the Public
<ul style="list-style-type: none"> ◆ Exploration ◆ Mining ◆ Processing ◆ Economics of commodities 	<ul style="list-style-type: none"> ◆ Workplace health and safety ◆ Environmental sustainability ◆ Social license ◆ Policy research

Outcomes and Impacts

- ◆ Re-established mining options for engineering students in Saskatchewan and laid the groundwork for a future mining engineering degree
- ◆ Expanded capacity at four regional colleges for mining-related skills and workforce development
- ◆ Increased collaboration between industry and academia with 129 people involved in activities related to IMII funded R&D projects, including 20 industry subject matter experts, 69 faculty members and scientists, and 40 graduate and undergraduate students
- ◆ Developed an innovative research cluster that creates the basis for a provincial and national authority for mining-related materials research while training highly-qualified professionals for the province's minerals industry
- ◆ Created an applied research partnership between the University of Saskatchewan and Saskatchewan Polytechnic



2016 Project Outlook

- ◆ Construction of the expanded laboratory facilities for the Northlands College Mine School, funded by the IMII, will be well advanced. Renovated facilities are expected to be in use by fall 2016, and a new one completed in 2017, allowing Northlands to offer additional programs in partnership with Saskatchewan Polytechnic.
- ◆ Results from the research project on Enhancing Cultures of Safety in the Mining Industry, the IMII's first R&D project and a collaboration between Saskatchewan Polytechnic, the University of Saskatchewan and IMII industry members, will be received.
- ◆ Results from the second R&D project funded by the IMII and its members, the Salinity Mitigation project, will also be released. This project has the potential to provide improved environmental protection technologies to the potash industry and other industries using clay barriers for containment.
- ◆ The first four projects under the new Mining Materials Research Cluster, a collaboration between the University of Saskatchewan, the University of Regina and the Canadian Light Source, will be underway.
- ◆ The Mining Engineering Options at the University of Saskatchewan will see its first graduates in May 2016.
- ◆ Regional Colleges will be operating the second year of their mining skills training programs.
- ◆ Two new R&D projects will be launched—one focused on hydrogeological research related to brine management in the potash industry, and the second studying rebar shear in the potash industry. Both projects were identified as industry priorities.
- ◆ One new E&T project featuring a “geological short course”, which focuses on the geology for both the potash and the uranium industries, will be undertaken. This interactive digital platform will provide baseline technical information on the province's geology, stratigraphy and commodities, scalable to various educational levels and customizable to technical and non-technical audiences, and will provide a basis for public and professional education.

IMII Members

Agrium
BHP Billiton Canada Inc.
Cameco Corporation
K+S Potash Canada
The Mosaic Company
Potash Corporation of Saskatchewan
North Rim Exploration Ltd.
Saskatchewan Mining Association
Advanced Education
Innovation Saskatchewan
Canadian Light Source
Carlton Trail College
Cumberland College
First Nations University of Canada

Genome Prairie
Northlands College
North West College
Parkland College
Prairie Agricultural Machinery Institute
Saskatchewan Indian Institute of Technologies
Saskatchewan Industrial & Mining Suppliers Association
Saskatchewan Literacy Network
Saskatchewan Polytechnic
Saskatchewan Regional Economic Development Authority
Saskatchewan Research Council
University of Regina
University of Saskatchewan