

# ANNUAL HIGHLIGHTS

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## Breaking New Ground

During 2018, IMII again illustrated its capacity to zero in on key strategic priorities. Its research initiatives were shifted toward projects that have near-term capacity for implementation. IMII's education and training projects were assessed and implemented through the lens of diversity and inclusion, again mirroring the minerals industry's strategic goals. We have every confidence that IMII's investments of 2018 will produce the type and level of results that help Saskatchewan minerals companies compete effectively in an increasingly competitive global environment.

Dwight Percy,  
IMII Board Chair

2018 was a year of firsts for the IMII and saw us break new ground on diversity & inclusion with the first projects under our \$1 million Diversity & Inclusion Challenge Program (another industry first), pulling innovations out of the minerals industry's supply chain with our first DEMOday, promoting supplier innovation with our first Innovation Award, and promoting and advancing mining's digital transformation at Let's Talk Minerals! and through our first digital mining transformation initiative with our members.

Al Shpyth,  
Executive Director



IMII held its 5<sup>th</sup> Annual "Let's Talk Minerals!" event under the theme *Innovate Your Operations*

and featured three speakers:

- ◆ Peter Jackson, Vice President Potash Operations, The Mosaic Company – Aspire, Innovations in Micronutrients
- ◆ Adrian Berghorst, Manager International Business Development, New Concept Mining – Partnering for the Commercial Application of Innovation in Underground Mines
- ◆ Brad Bechtold, National Director, Oil and Gas/Mining, Cisco Systems – Digital Transformation

Also featured was our first ever Innovation Row, a highlight of two of IMII's innovative RD&D projects and our first Innovation Award winner, Prairie Machine & Parts.

# RESEARCH, DEVELOPMENT & DEMONSTRATION



In January 2018, IMII announced funding for three new research, development and demonstration (RD&D) projects and provided a progress update on a fourth, all focussed on mining safety and productivity. They are:

- ◆ Investigation of Polymeric Reagents for Potassium Chloride Collection During Potash Flotation – University of Regina
- ◆ Preliminary Quantification of Scaling Bar Impacts for Underground Mine Safety – University of Saskatchewan
- ◆ Enhancing Mine Safety and Accuracy Through Underground Ultra-Wideband Positioning System – Saskatchewan Polytechnic
- ◆ Cigar Lake New Concept Mining Yielding Bolt Test Trial – Cameco Corporation and The Mosaic Company

The yielding rock bolt trial is IMII's first technology demonstration project. The project has already demonstrated that the different rock bolts – with the potential to stretch in response to strain while still retaining their strength and keeping rock safely in place for longer – can be installed using existing personnel and equipment, and testing is now underway to determine field performance and to compare performance of the new bolts to the old both at Cigar Lake and in the potash industry.

The budgets for the four projects total \$856,400, with IMII contributing \$267,400. The remainder of the costs are to be contributed by participating companies, government funding agencies and supply chain companies.

## *DEMODay*

On April 10th, 2018, IMII hosted its first ever DEMODay in conjunction with the 10<sup>th</sup> Annual Saskatchewan Mining Supply Chain Forum in Saskatoon – five supply chain companies presented their innovations directly to minerals industry members.



## *Innovation Award*

IMII gave out its first Innovation Award for the “Best Prototype” to originate out of the Saskatchewan minerals industry's supply chain to Prairie Machine & Parts Mfg.'s for their Hardrock Gopher prototype. The Gopher has been designed for tough mining conditions, with the objective of replacing diesel-powered vehicles with a safer, cleaner, more robust electric vehicle.

# EDUCATION & TRAINING

## *Mining Engineering Options — University of Saskatchewan*

Twenty-one students convocated with the engineering degrees from the three mining engineering options offered by the IMII-funded Mining Engineering Options (MEO) at the University of Saskatchewan, and increased the total number of MEO graduates to 41 over the five years of the project.

While IMII's funding for the MEO has concluded in 2018, the University of Saskatchewan's College of Engineering is continuing the three mining engineering options (Chemical, Geological and Mechanical) into the 2018-2019 academic year with 51 students enrolled.

## *Specialized Trades and Safety Training — Cumberland College*

IMII's funding for specialized trades and safety training for electrical and industrial mechanics programs at Cumberland College concluded with 51 of the 65 students who completed or graduated from these programs having found employment.

## *Gearing Up — MiHR*

The Government of Canada's Student Work-Integrated Learning Program is meant to bring industry stakeholders together to create new work-integrated learning (WIL) opportunities for students to be better positioned to secure employment in their field of study.

**Gearing Up** is the new WIL Program for Canada's mining sector. Led by the Mining Industry Human Resources Council (MiHR), **Gearing Up** will create 850 new WIL opportunities in mining over four years. Wage subsidies up to \$7,000 will be available to employers who create new WIL opportunities such as co-ops, internships, field placements, applied projects, capstone projects or case competitions.

On June 13<sup>th</sup>, MiHR and the International Minerals Innovation Institute (IMII) invited minerals companies, supply chain companies, research organizations, professional service providers (as employers) and post-secondary education institutions to a workshop in Saskatoon to explore and inform how the Saskatchewan minerals industry and education sector can work together more collaboratively and create innovative new ways to support work-integrated learning for students.



**GEARING UP**  
Developing Mining Talent Through Work-Integrated Learning

**Hiring Students?**  
Wage subsidy up to \$7,000 available!

Apply at [mihhr.ca/careers](http://mihhr.ca/careers)

**MiHR** MINING INDUSTRY HUMAN RESOURCES COUNCIL  
**Canada** Financed and supported by the Government of Canada's Student Work-Integrated Learning Program

The poster features a blue background with white and yellow text. It includes a QR code and is decorated with gear icons in various colors (blue, green, orange) along the right and bottom edges.

# DIVERSITY & INCLUSION



IMII announced the winners of its first-ever Diversity & Inclusion Challenge Program in January 2019. Five projects were selected to receive funds under this \$1 million program. CIM Magazine featured an article in their February edition recognizing the program winners.

## ***Girls in the Classroom – Unearthing Career Opportunities in Mining — RESPEC Consulting Ltd.***

Girls in the Classroom is an educational outreach pilot project that engages with elementary and high school girls and young women to educate, debunk stereotypes and raise awareness around STEM-related career opportunities in the mining and minerals industry for women. The pilot connects classrooms with the diverse female mining and minerals workforce as applied examples of the learning outcomes from the public-school curriculum.

The ambition is to feed the talent pipeline through inspirational interactions between girls and women and is reaching academically gifted, inner city, community and Indigenous schools across grades 4 to 12.



## ***Mine Your Potential Mentorship Program — Women in Mining/Women in Nuclear-SK***



The Mine Your Potential Mentorship Program was created to improve recruitment, retention and satisfaction among women in the mining industry.

This pilot project involves women from across our province's minerals industry – mining companies, supply chain companies, engineering firms and in the third cohort, students wanting to enter our industry.

## ***Indigenization of Mineral Resource K-12 Lesson Plans & Pilot Camps — Saskatchewan Mining Association***

The SMA has developed a number of curriculum-correlated lesson plans related to Saskatchewan mineral resources and will incorporate traditional knowledge and teaching methodologies into the existing lesson plans including connecting learning experiences to the land and communities.

# DIVERSITY & INCLUSION



## ***Junior & Youth First Responders Boot Camp — Saskatchewan Mining Association***

Increasing safety and fire awareness of youth will result in a safer next-generation of workers and increase community safety. Encouraging indigenous youth to participate in workshops/camps that address fire protection services may yield benefits in terms of future fire protection services in their communities, many which currently lack capacity to effectively address fire risk.



A group of 20 youth aged 13 to 17, from seven different Saskatoon Tribal Council (STC) communities, participated in a first-of-its-kind, week-long boot camp for potential careers as first responders – the boot camp was created as a partnership between the Saskatchewan Mining Association and STC and funded under IMII’s Diversity & Inclusion Challenge.

## ***Indigenous Student Success Program — College of Engineering, University of Saskatchewan***

As part of the Indigenous Peoples Initiatives Community (IPIC), the Indigenous Student Success Program will support Indigenous students during every part of their journey toward completing their engineering degrees. Two components of this program are the Summer Bridging Program – to help transition students into life in Saskatoon and the university, and the Student Success Program – in which students receive social, academic and financial supports.

Student ambassadors for the project are Dannielle Brewster, Connor Theoret and Harrison Bull (L-R)



*IMII released a second set of Diversity & Inclusion Challenges in 2018 in the areas of enhancing workplace cultures, opportunities for career progression for Indigenous employees, and encouraging career choices and success for women in non-traditional occupations.*

# INNOVATION

## *A Digital Mining Future—The Digital Mining Transformation Initiative*

The digital transformation of Saskatchewan’s minerals industry has been identified as a priority for IMII’s mineral company, government and academic members. The IMII was charged by its members with developing and delivering on a special project to not only help digitally transform their Saskatchewan mineral operations, but also to facilitate the development of a vision for digital mining in the province.

An expected key deliverable would be a “framework” through which key partners – such as government departments and agencies, post-secondary education institutions, applied research institutions, and supply chain companies, could establish platforms/mechanisms for collaborating with minerals companies to realize the industry’s digital innovation needs (e.g., help researchers and supply chain companies understand and prepare for the emerging technical landscape, help PSE institutions develop and offer new educational resources in response to digital employment profiles). This framework will need to support the digital transformation of existing operations, and the needs of the next generation mines and mills that will be built.



## *Innovation Video Series*

To recognize the innovative nature of its mineral company members, IMII has developed a series of videos to profile innovations that matter to mining in Saskatchewan.

The first three videos are focused on innovative approaches in education and training. IMII’s member companies are committed to having a diverse and inclusive workforce reflective of the communities in which they operate in Saskatchewan.

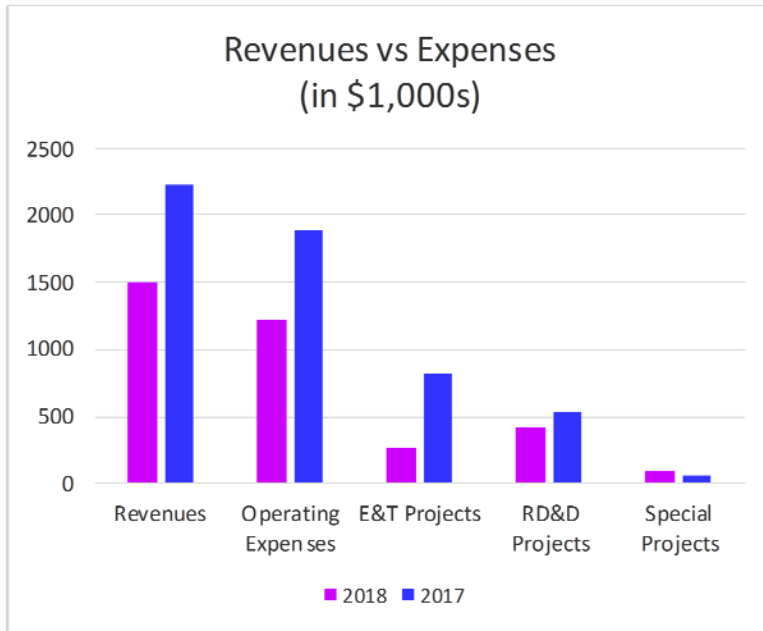
The first video – Introduction to Mining, highlights a first-of-its-kind entry-level program jointly offered by Parkland and Carlton Trail Regional Colleges which provided foundational training and hands-on learning experiences for Indigenous people in jobs in the mining industry and environmental monitoring.

The second video – Mine Your Potential Mentorship Program, profiles the first comprehensive, cross-industry mentoring program to empower women for great careers in the mining industry. This program has been organized by Women In Mining/Women in Nuclear - Saskatchewan (an IMII member) with IMII’s financial support and the participation of IMII’s major minerals company members and others.

The third video highlights the activities of the first Junior & Youth Responders Boot Camp held in July 2018.

The fourth video celebrating the innovative nature of its minerals company members, featuring The Mosaic Company in the “Path to Innovation. The video gives insight into the role innovation plays in making Saskatchewan home to a world-class minerals industry. From processes to product development, innovative ideas are developed through the teamwork of the company and the minerals industry’s innovation ecosystem.

# FINANCIAL HIGHLIGHTS

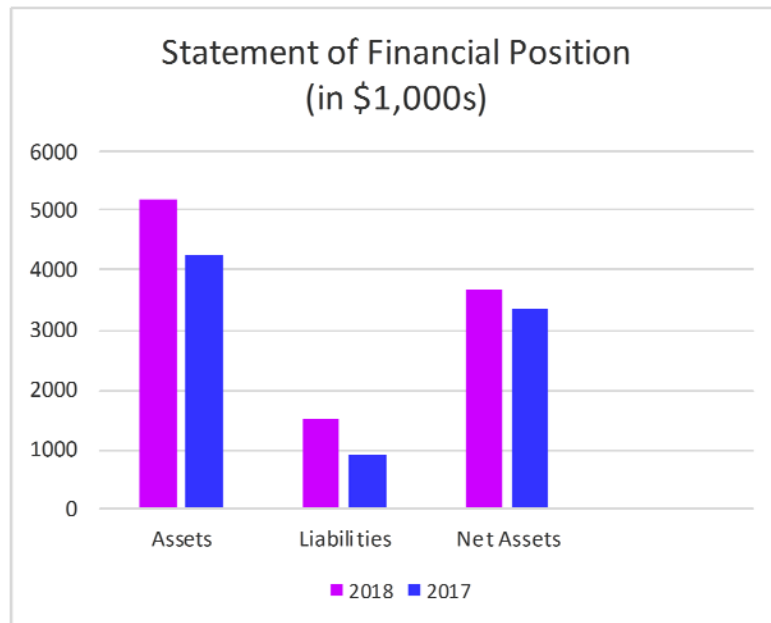


IMII concluded 2018 with lower revenues and expenses. Operations expenses were closely monitored and decreased for the 5th year in a row.

The Government of Saskatchewan, through Innovation Saskatchewan, committed \$1.2 million to IMII in the 2018-2019 Provincial budget.

Special projects for 2018 included the Digital Mining Transformation Initiative, the IMII Innovation Video Series and IMII Competition Law Training sessions.

Total RD&D and E&T projects funded in 2018 is \$678,655.



\$1.7 million of IMII’s net assets at the end of 2018 was committed to fund approved projects for 2019 to 2021.

\$1.9 million was available to fund new projects.

# PARTNERS



## *Our Members*

### **Minerals Companies – “Company A” Category**

BHP  
Cameco Corporation  
K+S Potash Canada GP  
Nutrien Ltd  
Mosaic Company

### **Supply Chain Companies**

New Concept Mining

### **Government of Saskatchewan**

Innovation Saskatchewan  
Ministry of Advanced Education



### **Post -Secondary Educational Institutions and Research Providers**

Canadian Light Source	Carlton Trail College
Cumberland College	First Nations University of Canada
Genome Prairie	North West Regional College
Northlands College	Parkland College
Prairie Agricultural Machinery Institute (PAMI)	Saskatchewan Indian Institute of Technologies (SIIT)
Saskatchewan Polytechnic	Saskatchewan Research Council (SRC)
University of Regina	University of Saskatchewan

### **Associates**

Saskatchewan Industrial & Mining Suppliers Association Inc. (SIMSA)  
Saskatchewan Literacy Network  
Saskatchewan Mining Association (SMA)  
Saskatoon Regional Economic Development Authority (SREDA)  
Women in Mining and Women in Nuclear Saskatchewan Inc. (WIM/WiN-SK)