

Ground Breaking News

CRUSH IT!

The Centre for Excellence in Mining Innovation (CEMI) is pleased to be selected as the organization of choice to undertake outreach and engagement that will enhance Canada’s mineral processing innovation ecosystem by mobilizing new and existing solver communities, building new linkages across the innovation landscape, and setting the stage for the commercialization and adoption of emerging solutions. CEMI will be working collaboratively with NRCan and Goldcorp in advancing the ‘Crush It! Mining Challenge’. We believe that by working with NRCan and the rest of the mining innovation ecosystem, we will provide the foundation for growth and expansion of the sector.

The **Impact Canada Clean Technology Challenges’ ‘Crush it!’ Challenge** was launched on **October 30, 2018**. The challenge is to develop a new clean technology solution that transforms how energy is used for crushing and grinding rocks in the mining industry. The intent is to develop new innovative solutions to reduce the energy intensity, cost, and environmental impacts of comminution-based mineral processing.

Crush It! Challenge semi-finalists will be brought to the March 2019 Goldcorp #DisruptMining event at PDAC in Toronto, in March 2019 where they will present their solutions.

ARE YOU UP FOR THE CHALLENGE?

For more information visit: <https://impact.canada.ca/en/challenges/crush-it>

The deadline for applications is January 15, 2019

Contact info@cemi.ca

**FIGHT CLIMATE CHANGE
INCREASE COMPETITIVENESS
TRANSFORM THE MINING CYCLE**



Right (left to right): Brian Bigger, Mayor of Greater Sudbury, Douglas Morrison, President & CEO CEMI, Paul Lefebvre, MP Sudbury, Amarjeet Sohi Minister NRCan, Julie Moskalyk, Science Director, Science North, Brent Bergeron, Executive VP Corporate Affairs & Sustainability Goldcorp



*Wishing You All
Peace and Joy
This Holiday Season*

UPCOMING EVENTS & PRESENTATIONS

Canadian Mineral Processors

Ottawa, Ontario, Canada
January 22 - 24, 2019

Beyond Digital Transformation 2019

Sudbury, Ontario, Canada
February 6 - 7, 2019

PDAC 2019

Toronto, Ontario, Canada
March 3 - 6, 2019

Visit us at the Northern Ontario Mining Showcase

CIM General Membership Meeting

Sudbury, Ontario, Canada
March 21, 2019

Topic: The Global Future of Mining in Northern Ontario

The Electric Mine

Toronto, Ontario, Canada
April 4 - 5, 2019

Topic: Electrification to Maximize Productivity

CIM 2019

Montreal, Quebec, Canada
April 28 - May 1, 2019

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CEMI'S 11TH ANNUAL AGM

CREATING VALUE THROUGH INNOVATION

A new strategic direction for the organization was rolled out at CEMI's 11th Annual General Meeting which was held on October 31st, 2018.

CEMI will concentrate its attention on developing SME relationships within the Canadian mining SME community supporting targeted technical developments in SMEs and providing Business Support Services to help build commercialization capacity.

During the last few years, CEMI has established a solid reputation for helping SMEs in the Canadian Mining Service

and Supply sector to complete the pre-commercial development of new products and services, and to accelerate the penetration of these innovations into the mining market, both in Canada and abroad.

Contact us at info@cemi.ca to be enrolled in our client intake process.



Validated Challenges + Vetted Solution Providing Capabilities = Improving Mine Performance

RECENT PRESENTATIONS

SAMSSA AGM

Sudbury, Ontario
December 10, 2018

Topic: Creating Value—Innovation & Commercialization

Future of Mining Americas

Denver, Colorado
October 29-30 2018

Topic: Infrastructure – A New Approach to Self-sustainable Tailing Deposition

Mines and Technology

Toronto, Ontario
October 15-18

Topic: Electrification to Produce Ore Sooner, Faster, Cheaper

Fourth International Symposium on Block and Sublevel Caving

Vancouver, British Columbia
October 15-17, 2018

Topics: Increasing Productive Capacity in Block Caving Mines (Session 2, Day 1)

A Systems Approach to Mining Innovation (Session 7, Day 2)

Smart Mining 1.0

Toronto, Ontario
September 20-21

Topic: Developing Smart Mining Testbeds Within Operational Underground Mines

EXPANDING KNOWLEDGE THROUGH GLOBAL COLLABORATIONS

GERMANY

Charles Nyabeze represented CEMI at the 1st International Conference on High Performance Mining in Aachen Germany in December. The conference showcased best-practice examples of mining operations related to high performance and increased productivity. Charles presented on the subject "High Performance via Saving Time". The Rapid Advance Shield, a mechanism to provide a safety shield at the face, which is being commercialized by Nordic Minesteel Technologies - NMT (<https://nordicminesteel.com/>) was showcased at the event. The conference was well represented by mining companies, technology providers and global consulting firms.



PERUVIAN DELEGATION

In a recent visit with the Canada-Peru Chamber of Commerce (CCCP), CEMI had an opportunity to discuss the potential of establishing a strategic alliance between the two organizations. The objective of the Innovation and Research mission is to contribute and develop potential partnerships between the research centers and participating companies.

CHILEAN DELEGATION

On November 21st CEMI hosted a meeting with ennomotive, an open innovation platform for engineering challenges, a delegation from ProChile, the Chilean export and investment promotion agency, based in Toronto and EXPANDE. EXPANDE is a public-private Open Innovation mining program, which promotes the development of high-potential solutions from technology-based companies and connects them with the mining challenges of today and tomorrow. The goal of the meeting was to create new connections between companies in order to move forward together in matters related to innovation and sustainability in the Canadian mining sector.

MEXICAN DELEGATION

CEMI hosted a meeting with visitors from Mexico in early November. The delegation is working on building their local mining supply, service, and R&D ecosystem. They came to CEMI to learn about our model and to investigate areas that we can synergize efforts.

UDMN IMPACT OVERVIEW	TARGET	ACHIEVED
Jobs Created/Retained	80	146
Investment	\$46M	\$35M
Prototypes	8	17
Product & Services	8	8
Patents, Standards	15	9
Brokered Deals	5	8
UDMN PARTNERS	TARGET	ACHIEVED
Mining Companies	7	20
Supply and Service (SMEs)	18	42
Academia & Other	5	15
Total	30	93

ULTRA-DEEP MINING NETWORK

Since 2013, the UDMN has enabled network solution teams to accelerate and develop technologies that are needed in deep-mining operations All this while ensuring that Canada’s investment in deep mining enhances the innovation agenda, improves economic growth, trains the next generation of innovators, creates jobs and improves equity, diversity and inclusion in the industry. Despite a major downturn in the industry the UDMN helped create an opportunity for collaboration across the mining sector. SMEs, mining operations and academics came together to advance innovation and help close the commercialization gap. The UDMN has exceeded growth targets in HQP, business and exports because of the commitment of SMEs to push their innovations forward.

The success of the UDMN has proven that a lean, connected, impact driven Network with sufficient start up funds and built to be financially self sustaining can turn Canadian innovators into global leaders.



KEY SUCCESS FACTORS

- ↪ Team
- ↪ Network Advisory Committee
- ↪ Industry Consultation Group
- ↪ Pan Canadian Call for Proposals
- ↪ Project Management Practices
- ↪ Communications + Events

TESTIMONIAL

Pat Dubreuil, UDMN Theme Leader and R&D Program Director re-marks...

“It is companies like Maestro that quickly become successful because of their ability to identify a real problem, develop a viable solution and quickly commercialize a working product.”

Maestro, with the support of the UDMN, designed and developed a digital gas sensor that can be calibrated on surface in a stable controlled environment. Vigilante AQS™ environmental stations have now been installed in some of the deepest mines in the world.

This is just one of the success stories that highlights the importance of supporting mining innovations that advance the productivity and safety in the mining industry.

UDMN AWARD OF EXCELLENCE WINNERS

Jannatec Technologies

Thermal Garment

MIRA Geoscience

4-D Real Time Geotechnical Hazard Assessment & Reporting for Ultra Deep Mining

FVT Research

Battery Powered Underground Utility Vehicles 150-250 HP

Electrale Innovation Ltd.

/MIRARCO/ Laurentian University Hydraulic Air Compressor (HAC)

Maestro Mine Ventilation

Environmental Air Quality Stations for Deep Mining

CENTRE FOR EXCELLENCE IN MINING INNOVATION

WHY ENGAGE CEMI?

CEMI helps solve mining industry challenges. We accelerate the delivery of commercially viable innovations to improve operational performance. Simply said, our services are designed to bridge the gap between a challenge and a solution.

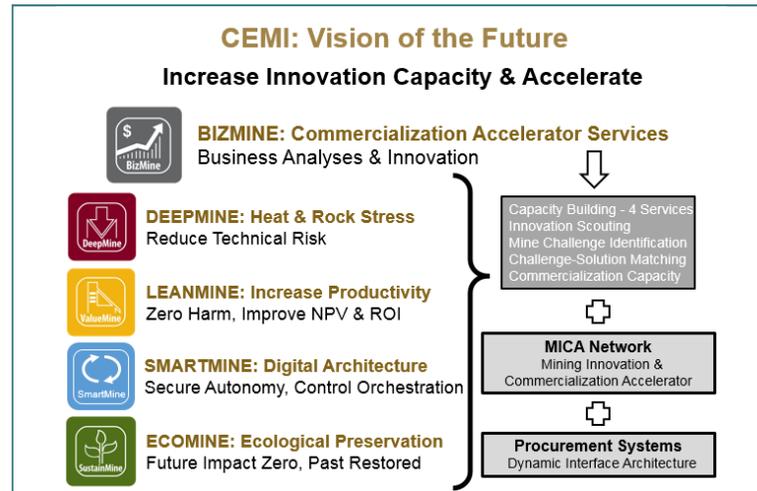
OUR SERVICES

- Innovation Scouting**
 Global search for current and emerging pre-commercial solutions
- Challenge Identification**
 Review of existing challenges from technology road maps and uncovers hidden challenges using a systems analysis process
- Challenge Solution Matching**
 Matches current and emerging pre-commercial solutions with validated industry challenges
- Commercialization Services**
 CEMI conducts innovation and commercialization gap analysis assessments and offers services to bridge identified gaps

CEMI's objective is to help the mining sector achieve step-change improvement in performance by accelerating the adoption of innovations in mines and by increasing the innovation capacity of the mining service companies that deliver techniques and technologies to the industry. There is no shortage of good ideas, or partially developed solutions to the very real problems that confront mining operations, but the process of converting these into commercially viable products and services that mining companies can adopt, is slow and difficult. The need for mines to achieve step-change improvement in operational performance is urgent and we are finding ways to make this happen more quickly and efficiently.

We focus on:

- Accelerating the commercialization of technical solutions to be market ready — **Viable Products & Services**
- Managing networks of technical solution providers and innovative SMEs — **Sector Collaboration**
- Systematically target issues relevant to the global mining industry as well as regional and national ones — **SME Export Market**
- Searching globally for solutions to locally critical operational bottleneck — **Industry-Identified Priorities**



LOCATION

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IF YOU ARE INTERESTED IN DOING BUSINESS WITH CEMI, PLEASE CONTACT US AT INFO@CEMI.CA TO BE ENROLLED IN THE CLIENT INTAKE PROCESS.

www.cemi.ca

