

Introduction and Background

MIAC and U of A Mining

Industry Research

Training and Education

Creating Talented People

Research Enabler

- **5 Departments with 21 Specializations**
 - Chemical and Materials Engineering
 - Civil and Environmental (School of Mining & Petroleum)
 - Electrical and Computing Engineering
 - Mechanical Engineering
 - Biomedical Engineering (joint with Medicine)
- **200 Faculty members**
- **4500 undergrads, 1500 grad students**

The Faculty of Engineering hosts:

- 16 NSERC Industrial Research Chairs — more than any engineering faculty in Canada
- 1 Canada Excellence Research Chair
- 14 Canada Research Chairs
- 5 Foundation Supported Chairs
- 11 Endowed Chairs and Professorships

Team

8 Professors

50+ Masters and Ph.D. students

7 Industrial research chairs related to mining

Research Groups/Labs

Center for Computational Geostatistics Research
(CCG)

Mining Optimization Laboratory (MOL)

Oil Sands Tailings Research Facility

Surface Mining Laboratory

MIAC and U of A Mining

- **1991-Present**
- **1991 Save the Mining Program**
- **1992-1997**
 - Strengthen Undergrad Program, Focus on Prairies/North, Centre of Excellence long term
 - Undergrad Program: accreditation, attracting undergrads, curriculum improvements.
 - Sustainability: attracting faculty, industry collaboration/support, research Centre of Excellence goal.
- **1997-2000**
 - Maintain Undergrad Program & Succession Planning,

- **2001-2004**

- Clarity of Leadership & collaborative structure (esp Research & Grad studies), drop Centre of Excellence
- assess changes; establish Mining Chair and Research & Grad Studies subcommittee;
- address facilities for the future

- **2005-2011**

- Global Leadership in Mining Education, Expertise and Innovation
- Grow to 40 students/yr by 2010; increase diversity; full employment

- **2011-2014**

- Grow to 80 students/yr by 2014; focus on student placement & industry collaboration

- **2015-2017**

- Focus is on execution excellence to sustain the 2012 BP Gold Standard through the market downturn

Responding to Research Needs

- **CCG 1999**
- **MOL 2009**
- **Alberta Machine Intelligence Institute 2003
(Formerly AICML)**
- **Surface Mining Laboratory 2003**
- **Centre for Intelligent Mining Systems 2005
(Computing Science)**
- **Rock Mechanics Laboratory**
- **Oil Sands Tailings Research Facility (Civil)**
- **Center for Design of Advanced Materials 2015
(CDAM) (Mech)**
- **Robotics for Mining Applications (Mech)**

• **5 Departments with 21 Specializations**

- **Chemical and Materials Engineering**
- **Civil and Environmental (School of Mining & Petroleum)**
- **Electrical and Computing Engineering**
- **Mechanical Engineering**
- **Biomedical Engineering (joint with Medicine)**

Training and Education

CCG

- **40+ Shorts courses since 2013**
- **Australia, China, Brazil, Malaysia, South Africa, Canada, US, Peru, Chile**

MOL

- **15 Short Course since 2013**
- **Chile, Brazil, Canada, US, Australia**

Thirteen Learning Seminars 2000-2014

- **2000- Computer Mine Planning Workshop**
- **2000-Information Needs of Mining**
- **2001 Large Heavy Haulers**
- **2002 Mining HS&E**
- **2003 Maintenance and Operations**
- **2005 Risk Management**

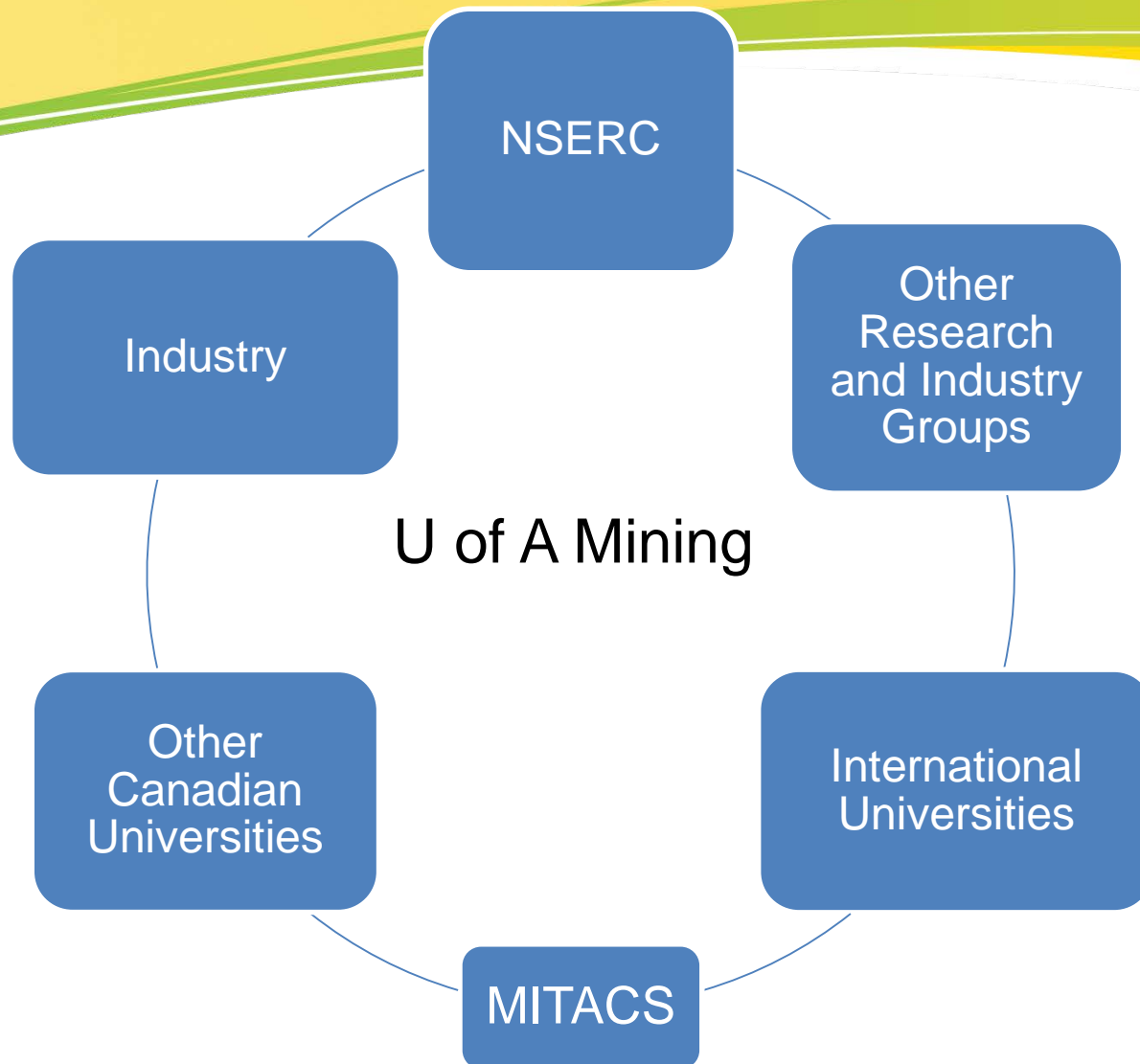
Learning Seminars

- **2008 Learning From the Best**
- **2009 Better Strategies for Fewer Resources**
- **2010 Safe Healthy Mining**
- **2013 Water and Mining**
- **2014 Standards and Benchmarking for Operational Excellence**

Creating New Talent

- **We graduate highly qualified undergraduates**
- **Our Masters and Ph.D. graduates go on to support both industry and academia**
- **Feedback from MIAC on program (curriculum review) and how are students compare to other schools.**

Research Enabler



How do we work together?