

MINES @150 Retreat



COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

Colorado School of Mines
Board of Trustees
February 9, 2018

Paul C Johnson, President and Professor

Our MINES@150 Challenge

To elevate MINES to a top-of-mind, first-choice university for students, public and private partners, and faculty and staff

Context: An Era of Dynamic Change

MINIMAL PUBLIC INVESTMENT

(Increased burden to students & families; tuition & philanthropy are primary funding sources; increased emphasis on ROI)

INCREASED COMPETITION FOR THE TOP STEM STUDENTS

(STEM majors growth is key component of most universities strategic plans)

DEMOGRAPHIC SHIFTS IN COLLEGE-BOUND STUDENTS

(total number, geographic location, socio-economic background & ethnicity)

THE 4TH INDUSTRIAL REVOLUTION IS HERE

(technologies that blend the physical, digital, and biological sciences)

THE ONE CONSTANT: MINES' TIMELESS MISSION

ENGINEERS & SCIENTISTS have to be prepared for jobs that do not exist today

(85% of the jobs that will exist by 2030 have not yet been created)

MILLENIAL & POST-MILLENIAL LEARNERS

(thematic interests; motivated by context; native digital explorers; need the skills to be self-guided life-long learners)

YOU CAN BE REPLACED

(60% of all occupations have at least 30% of activities that are AUTOMATABLE)

GLOBAL EQUALIZING of education and **NEW DELIVERY & BUSINESS MODELS** are disrupting Higher Education



MINES' Timeless Mission

MINES occupies a unique position among the world's top universities; we are recognized for developing distinctive scientists, engineers, and innovations that are highly valued by industry and society, and for the impact we have through them on prosperity and stewardship of the earth and its resources

Key Words: distinctive, valued, impact, prosperity, stewardship

Our MINES@150 Challenge

To elevate MINES to a top-of-mind, first-choice university for students, public and private partners, and faculty and staff

MINES@150 Aspirational Goals

We will be:

1. A great community to learn, explore, live, and work in
2. Accessible & attractive to qualified students from all backgrounds
3. A leader in educating STEM students & professionals
4. A producer of differentiated and highly-desired graduates that go on to careers of distinction
5. A go-to place for use-inspired research and innovation needed to solve challenges facing industry & society
6. A preferred partner for talent, solutions & life-long learning
7. The exemplar for alumni affinity, visibility, and involvement

Challenge + Aspirations = MINES@150 Vision

To elevate MINES to a top-of-mind, first-choice university for students, public and private partners, and faculty and staff

**Provide
Transformational
Opportunities**

**Pursue High-
Impact Research &
Innovation**

**Produce Distinctive
& Highly-Valued
Graduates**

**Build & Leverage a
Great Mines
Community**



Tell Our Story

Supporting Efforts for MINES@150



University Design & Pathways of Distinction (AA)
University Master Plan (A&O)
MINES@150 Capital Campaign (CSMF)
Sibson Process Redesign (A&O)
Sibson Compensation Analysis (A&O)
President's Diversity, Inclusion & Access Counsel (All)
Fryrear Chairs for Innovation and Excellence (AA)
Leadership Institute (A&O)
Alumni Special Focus Groups (CSMAA)

Questions to Guide Discussions

Are you providing transformational opportunities for students, faculty, staff?

[accessibility & attractiveness; ROI for students & families; graduation rate; time to degree; job offers; career progression for faculty & staff, etc.]

What are you doing to ensure that we are producing distinctive & highly-valued graduates?

[alignment with the profile of future MINES graduates, etc.]

Are we pursuing high-impact research & innovation?

[exemplar research culture; industry and mission-oriented funding; partnerships, etc.]

What are you doing to build and leverage the broader MINES community?

[building affinity; linking across programs; leveraging alumni, etc.]

Are you generating resources to support your plans?

[new programs/students; philanthropy; industry partners, etc.]

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Backup Slides

Profiles of MINES Graduates

Distinctive & Highly-Valued Graduates

PAST:

Technical & scientific emphasis; rigorous & practical; grit & resilience; get things done.

PRESENT:

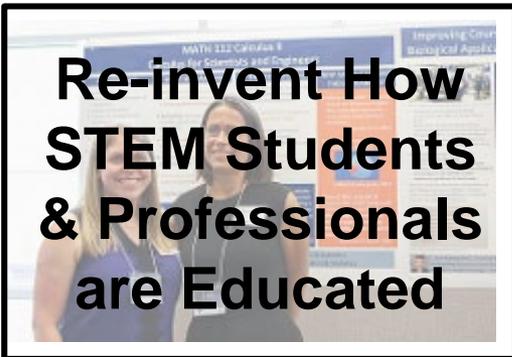
Technical & scientific emphasis; rigorous & practical; grit & resilience; get things done; problem solvers; collaborators.

MINES@150:

Technical & scientific emphasis + business & professional skills & societal context; rigorous & practical; grit & resilience; get things done; problem solvers; collaborators; entrepreneurs; leaders.

Produce Distinctive & Highly-Valued

Graduates



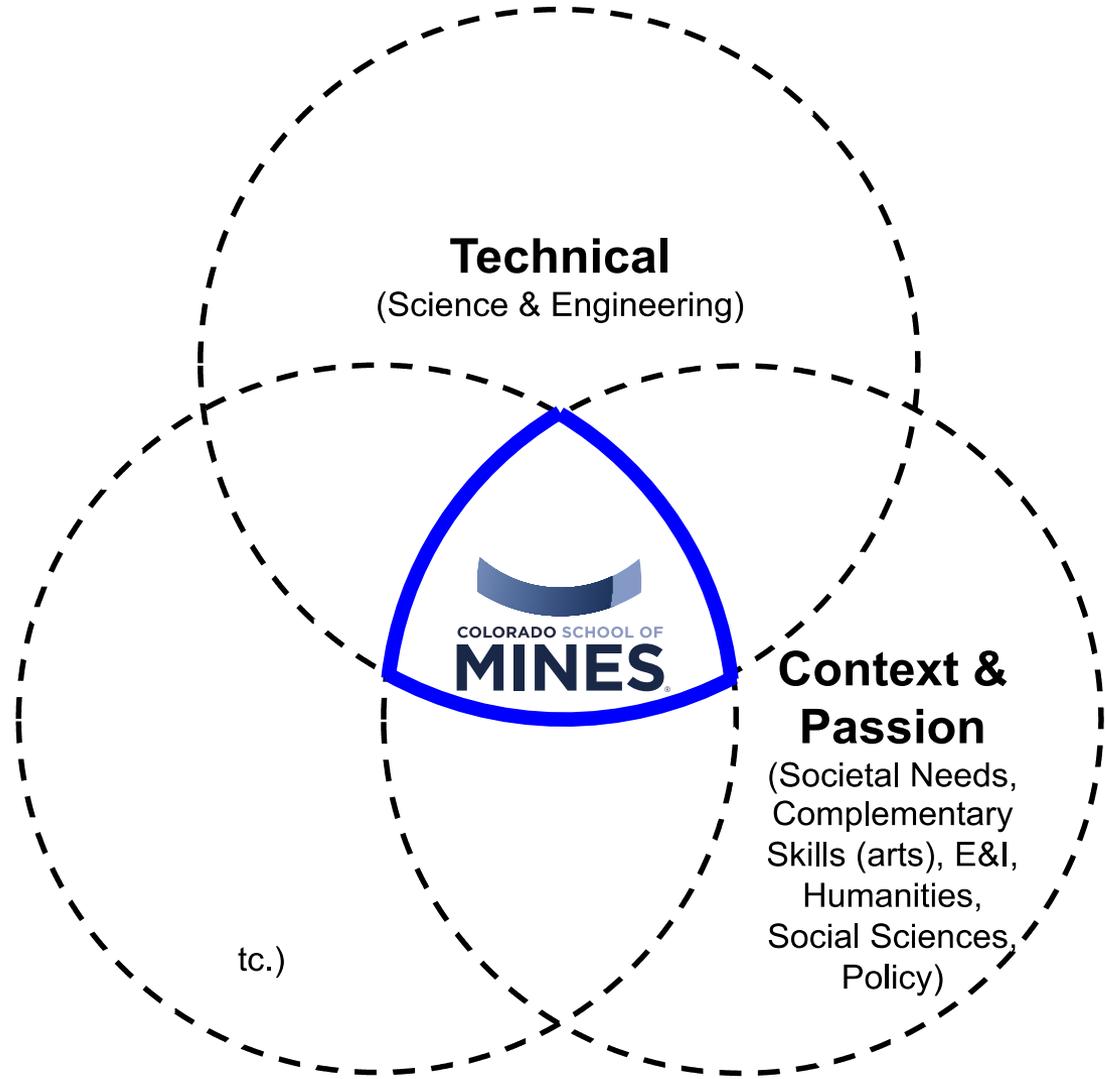
**Re-invent How
STEM Students
& Professionals
are Educated**



**Produce
Distinctive &
Highly-Valued
Graduates**



**Increase appeal
of, and diversify
access to a
Mines Education**



School A Examples



(3900 UG + 2800 Grad)

Carnegie Mellon University

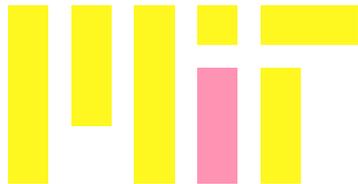
(6000 UG + 6900 Grad)

 Worcester Polytechnic Institute

(4300 UG + 2300 Grad)



(5900 UG + 1100 Grad)



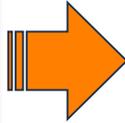
(4500 UG + 6800 Grad)



(4800 UG + 1300 Grad)

Specific Near-Term Actions

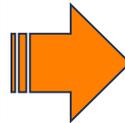
Look/act like other ToM schools, and be the best at professional preparation



- **Undergraduate Programs:**

- Increase graduation rates and decrease time-to-graduation
- Expand program offerings and pathways to completion
- Create unique-to-Mines signature experience
- Strengthen emphasis on professional preparation
- Services/experiences have to be like other ToM schools

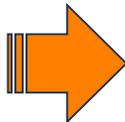
Use existing class capacity & expand off-campus offerings



- **Non-thesis Masters & Non-Degree Programs:**

- Need to grow these
- Offer 4-year BS + 1 year MS (distance) while working
- Need non-traditional delivery (times & method) for convenience and accelerated programs

Compensate for rankings - be the best at professional preparation



- **Research-based Masters & Doctoral Programs:**

- Signature graduate experience w/ professional preparation
- Interdisciplinary and thematic opportunities
- Emphasize unique programs

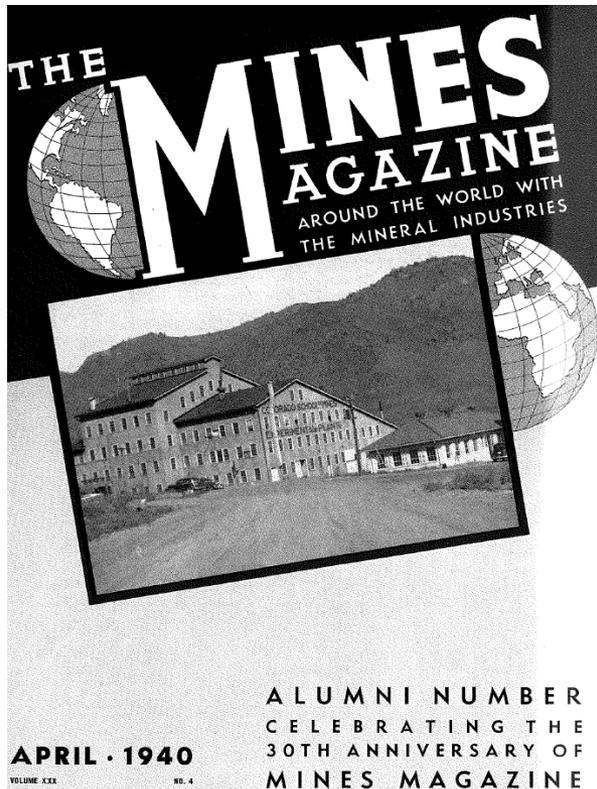
Educational Philosophy

WHAT "MINES" HAS TO OFFER THE YOUNG MAN

"One of the ideas uppermost in the mind of a virile young man is "When I finish my training can I get a job?" In 1939 of a class of 133, every graduate had been offered a job by September first. There is always a job for the well trained, willing, and reliable individual.

This training at Mines consists of the basic fundamentals of engineering together with a practical application in the field which gives especially effective results.

The major portion of three summer vacations is spent in field work where students learn to do as well as to think. This work is organized and supervised by faculty men, who are not only thoroughly trained academically, but who are recognized by industry as men who are superior in their fields."



Mines Pillars – Constants as We Change



- Focused Public Mission
- Unique Among Elite Institutions
- Challenging Practical Education & Professional Preparation
- Collaborative Pursuits of Use-Inspired Innovation & Discovery
- Connections & Partnerships, Particularly with Industry & Mission-Oriented Agencies
- Honest Broker of Information
- Great People (students, faculty, staff, alumni)
- Immense Pride

The Mines Community is bound by:

Brand Identity	MINES
Mission	educate • inspire • advance • impact
Tag Line	earth • energy • environment
Core Values	inquiry & innovation • inspiration • challenge • collaboration • openness • diversity • respect • compassion • integrity
Expectations	Mines Pillars • promotion and tenure guidelines • faculty handbook • productivity guidelines