MINES@150

Campus Update: Three Years to Go...

February 19, 2021 Presentation to Campus
Topics

The “Why” of MINES@150
The Essence of MINES@150
The Essentials of MINES@150
Pandemic – plans altered?
Progress – Specific Examples:

• Campus Master Plan
• Faculty Senate Signature Student Experience Grants
Why is MINES@150 Important?

The world is changing. As we look around, we see threats and opportunities...

**Competition:** increasingly competitive higher education landscape

**Relevance:** interests and needs of students, industry, and society have changed
National Trends: High School Graduation Class

Graduating Class

- Class of 1988 to 2019 (reported)
- Class of 2020 to 2025 (projected: increase)
- Class of 2026 to 2037 (projected: decrease)

National Trends: Higher Ed Enrollment

Declines were already happening pre-pandemic. Why?

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</thead>
<tbody>
<tr>
<td>Bachelor’s Degree-Seeking</td>
<td>8,735,162</td>
<td>8,680,309</td>
<td>8,814,333</td>
<td>8,626,366</td>
<td>8,548,717</td>
<td>8,470,450</td>
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<tr>
<td>First-Year (all 4-year institutions)</td>
<td>1,554,191</td>
<td>1,554,206</td>
<td>1,525,834</td>
<td>1,517,142</td>
<td>1,480,532</td>
<td>1,356,484</td>
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<tr>
<td>Colorado Higher Ed</td>
<td>303,777</td>
<td>292,738</td>
<td>291,986</td>
<td>294,234</td>
<td>292,738</td>
<td>291,986</td>
</tr>
<tr>
<td>All STEM Degrees</td>
<td>2,022,114</td>
<td>2,035,788</td>
<td>2,079,530</td>
<td>2,105,960</td>
<td>2,103,272</td>
<td>2,105,144</td>
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National Student Clearinghouse Research Center
https://nscresearchcenter.org
National Trends: Enrollment by School Size

<table>
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<tr>
<th>School Size (# of students)</th>
<th>% Enrollment Change 2010-2018</th>
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<tbody>
<tr>
<td>&gt;20,000</td>
<td>21%</td>
</tr>
<tr>
<td>10,000-20,000</td>
<td>6%</td>
</tr>
<tr>
<td>5,000-10,000</td>
<td>3%</td>
</tr>
<tr>
<td>1,000-5,000</td>
<td>-4%</td>
</tr>
<tr>
<td>&lt;1,000</td>
<td>-13%</td>
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Big schools get bigger

Small schools struggle

Where is growth happening?

<table>
<thead>
<tr>
<th>University</th>
<th>Growth %</th>
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<tbody>
<tr>
<td>CU Boulder</td>
<td>+15%</td>
</tr>
<tr>
<td>Purdue</td>
<td>+8%</td>
</tr>
<tr>
<td>CU Engineering</td>
<td>+56%</td>
</tr>
<tr>
<td>Purdue Engineer</td>
<td>+43%</td>
</tr>
</tbody>
</table>
National Trends: Graduate Enrollment


CU Engineering +44% (2010-2018)
Purdue Engineering +45% (2009 – 2018)

Mines Total Graduate Enrollment

Mines -6% (2011-2018)
National Trends: Strategic Plans

Typical Strategic Plans
- Growth (large schools)
- Increase STEM majors (all schools)

Typical Pressures
- Increase Student Success (publics)
- Decrease Student Debt (publics)
- Workforce Skills (liberal arts)
The “Why” for MINES@150

Declining HS graduates + changing demographics + changing attitudes

Competition for the students we want at Mines will increase

Lessons-learned from 2020-2021 (2.5% higher education enrollment decline)

“Top-of-Mind/First-Choice” schools with a differentiated, relevant, and attractive value proposition will thrive in the new environment

We need to be one of those

(...and soon)
We won’t compete based on cost (CO + STEM programs), so we have to offer something unique and relevant with great ROI.

Many offer accredited engineering and science degrees – but few focus on deliberate professional development.

As programs grow, they lose hands-on components – we can double-down.

We have the potential to be more nimble.

Our Alumni are an untapped resource.
The Essence of MINES@150: Our Aspirations

To thrive as a mid-sized and uniquely STEM-focused university, MINES will need to be top-of-mind and first-choice for students, public and private partners, and faculty and staff.

A Top-of-Mind First-Choice University

A leader in educating STEM students and professionals

An inspiring and caring community in which to learn, explore, live and work

A producer of differentiated and highly desired STEM-educated leaders

A preferred partner for talent, solutions and life-long learning

Accessible and attractive to qualified students from all backgrounds

A go-to place for use-inspired research and innovation needed to solve challenges facing industry, society, and the environment

The exemplar for alumni affinity, visibility and involvement
To achieve our MINES@150 aspirations, we must:

- **grow to 7500 students** (5000 undergraduate + 2500 graduate/post-bac students)
- **expand pathways** for, and be **attractive and accessible** to students we want at Mines
- offer a **unique signature student experience** with **deliberate professional development**, and achieve **best-in-class student success outcomes and ROI**
- produce **distinctive graduates**: highly-valued, future-prepared and adaptable
- re-align our portfolio with the future; expand offerings and diversify delivery
- grow the reach and impact of our R&D and E&I efforts
- build/acquire the **infrastructure** needed for MINES@150
- grow/acquire the leaders, faculty, and staff needed for MINES@150
- strengthen **affinity** for MINES among our students, alumni, and external partners
- attract **investment** to support our strategic initiatives
MINES@150 Priorities/Initiatives

**Pathways to Mines – Expand Opportunity**
(Increase the ways that students get attracted to and prepared for Mines)

**Signature Student Experience**
(distinctive coupled curricular + co-curricular preparation for future success)

**Student Success**
(>94% retention, 75%/85% 4/6 year graduation, >95% post-graduation placement)

**Living & Learning Community Expansion**
(housing for 1st and 2nd year students and thesis-based graduate students)

**Scholars Communities**
(all students are members of vertically-connected & supportive communities)

**Financial Accessibility & ROI**
(manageable student debt at graduation)

**DI&A Plan & Initiatives** (woven into many initiatives)
MINES@150 Priorities/Initiatives

offer a unique signature student experience with deliberate professional development, and achieve best-in-class student success outcomes and ROI.

Faculty Senate Signature Student Experience Grant Program

Oredigger Camp

Thematic Scholars Communities (Harvey, Grewcock, Vanguard, etc.)

*excite*inspire*engage* programs (Thorson, Cornerstone, etc.)

Vallejo-Irvine (VIP) Program (deliberate professional preparation)

E&I Ecosystem (Labriola Innovation Complex, Beck Venture Center, McNeil E&I programs)

Preparing Future Alumni (owned/delivered by alumni)
**MINES@150 Priorities/Initiatives**

**re-align our portfolio with the future; expand offerings and diversify delivery.**

**grow enrollment in post-bac credential programs** (non-research-based).

**Launch Thematic/Interdisciplinary/Leading Edge Programs**

- Advanced Energy Systems (NREL+MINES)
- Space Resources (aerospace industry+MINES)
- Advanced Manufacturing (industry+MINES)
- Quantum Engineering
- Others (30+ new post-bac options; data sciences, etc.)

**Business Engineering & Mgmt Sciences**

**Construction Engineering & Mgmt**

**Stackable Credentials** (certificates, micro-masters, etc.)

**Remote 4+1 Completion** (while working 1st job)

**MINES Online**
MINES@150 Priorities/Initiatives

Attributes of Mines Graduates

- Hard-working, creative, persistent, resilient & collaborative problem solvers
- Technical competency
- Hands-On Experience
- Best Professional Preparation
  - Business competency
  - Communicating & selling ideas, solutions, etc.
  - Leadership
  - Organizational understanding
- Strong Affinity to Mines
- Pay it forward attitude

Pathways of Distinction
(distinctive & differentiated programs)

Econ Alternative
(finance, accounting, etc.)

Vallejo-Irvine (VIP) Program
(deliberate professional preparation)

E&I Ecosystem
(Labriola Innovation Complex, Beck Venture Center, McNeil E&I programs)

Expanded Honors Tracks
(beyond McBride)

Harvey, Grewcock, Vanguard Scholars
(thematic scholars communities)

Preparing Future Alumni
(owned/delivered by alumni)

produce distinctive graduates: highly-valued, future-prepared and adaptable.
MINES@150 Priorities/Initiatives

Grow the reach and impact of our R&D and E&I efforts

- build thematic strengths,
- expand partnerships,
- diversify funding sources,
- increase tech transfer.

The Frontiers Initiatives

- Materials and Advanced Manufacturing
- Earth and Space Exploration, Technology, and Engineering
- Others (TBD)

Global Energy Future Initiative
Meeting the Net Zero Challenge
Fryrear Endowed Chairs for Innovation & Excellence

Each distinguished endowed chair and award offers the most highly-accomplished faculty recognition for demonstrating exceptional teaching and/or research AND for the important leadership roles they take to drive a strategic initiative and/or program that furthers the vision and mission of Mines.

New MINES@150-specific Leadership Positions

Vice Provosts for X
Presidential Faculty Fellow for X
Vice President for Global Initiatives

Formal Leadership Development Programs

Administrative Leaders
Campus Leaders

MINES@150 Priorities/Initiatives

Grow/acquire the leaders, faculty and staff needed for MINES@150
Strengthen affinity for MINES among our students, alumni, and external partners

MINES@150 Priorities/Initiatives

- **Oredigger Camp**
  (new students welcomed by upper class students)

- **MINES Traditions**
  (M-Climb, E-Days, Homecoming, etc.)

- **Developing Future Alumni**
  (alumni owned/delivered)

- **MINES Climbs Together**
  (Orediggers supporting Orediggers)

- **Signature Student Experience**
  (if done right, it will accomplish this imperative...)

- **Department/Program-Level Initiatives**
  (TBD)
Attract investment to support our strategic initiatives

MINES@150 Priorities/Initiatives

- Investment in Students
- The Mines Signature Student Experience
- Entrepreneurship, Innovation, and Business Programs
- The Pursuit of Excellence and Distinction