MINES@150

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Three Years to Go…

THE CAMPAIGN FOR MINES @ 150

January 26, 2021 Presentation to the Faculty Senate

Why is MINES@150 Important?

The world is changing. As we look around, we see threats to our future:

Competition: increasingly competitive higher education landscape

Relevance: changing needs for education and research

Complacency: believing the status quo will be successful in the future

MINIMAL PUBLIC INVESTMENT

INCREASED COMPETITION FOR TOP STEM STUDENTS

THE 4TH INDUSTRIAL REVOLUTION IS HERE

DEMOGRAPHIC SHIFTS IN COLLEGE-BOUND STUDENTS

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AUTOMATION: WE CAN BE REPLACED

PREPARING FOR JOBS THAT DON'T EXIST TODAY

GLOBAL EQUALIZING AND NEW DELIVERY/ BUSINESS MODELS

MILLENNIAL AND iGEN LEARNERS

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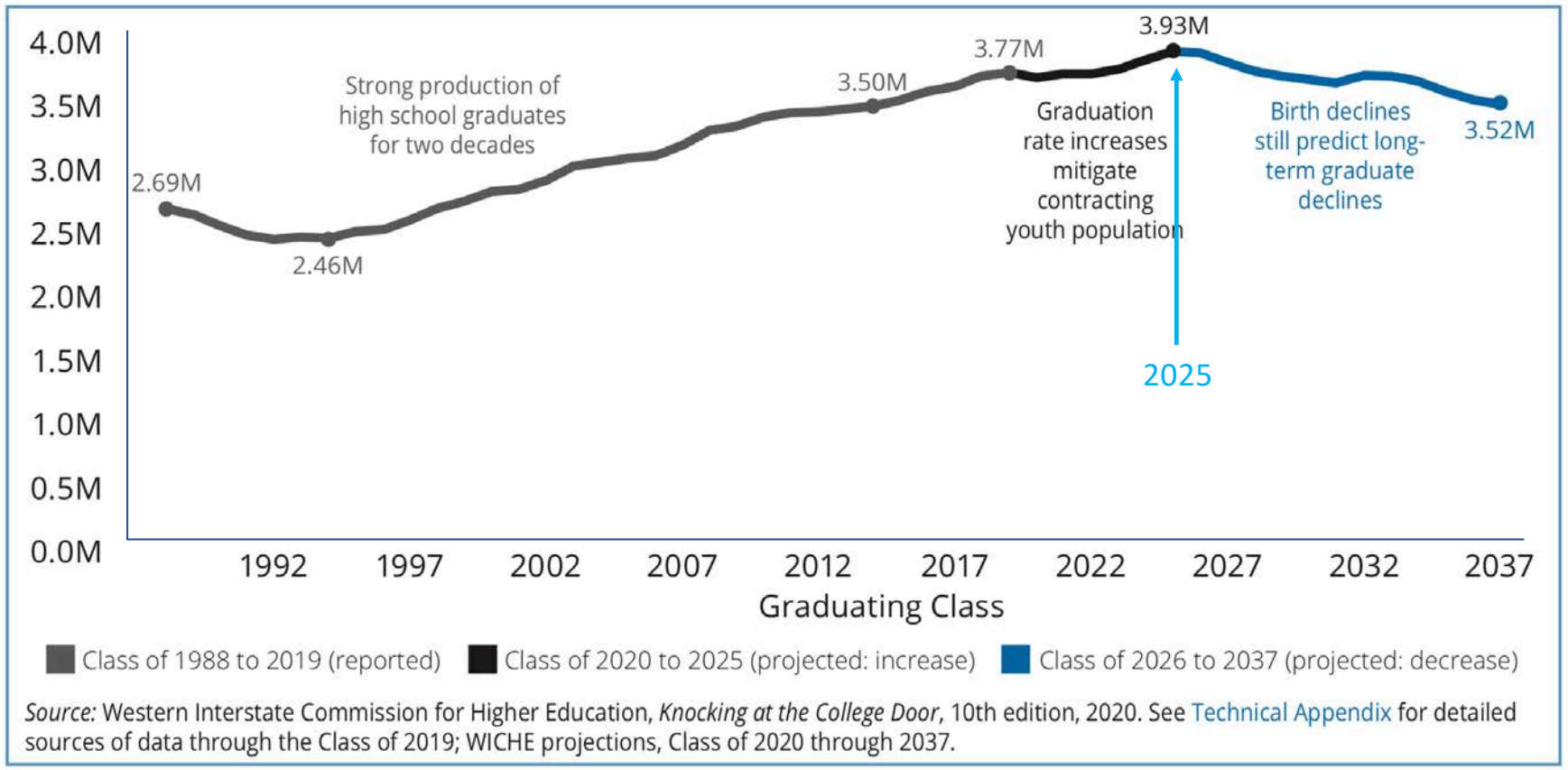
Why is MINES@150 Important?



Source: Western Interstate Commission for Higher Education, *Knocking at the College Door*, 10th edition, 2020. See Technical Appendix for detailed sources of data through the Class of 2019; WICHE projections, Class of 2020 through 2037.

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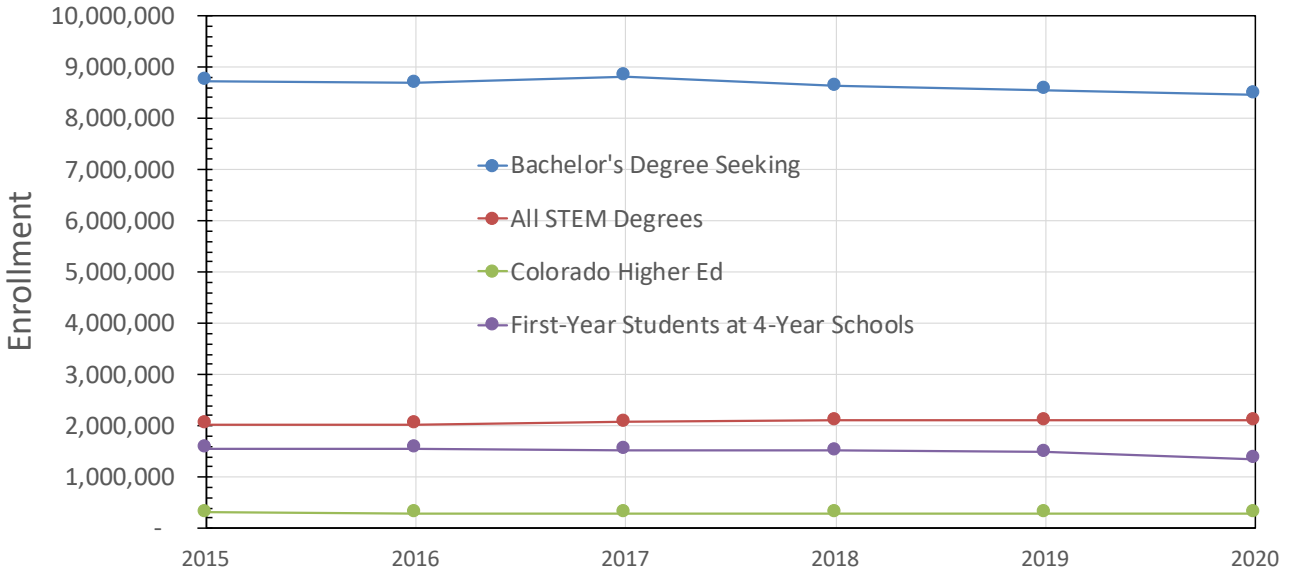

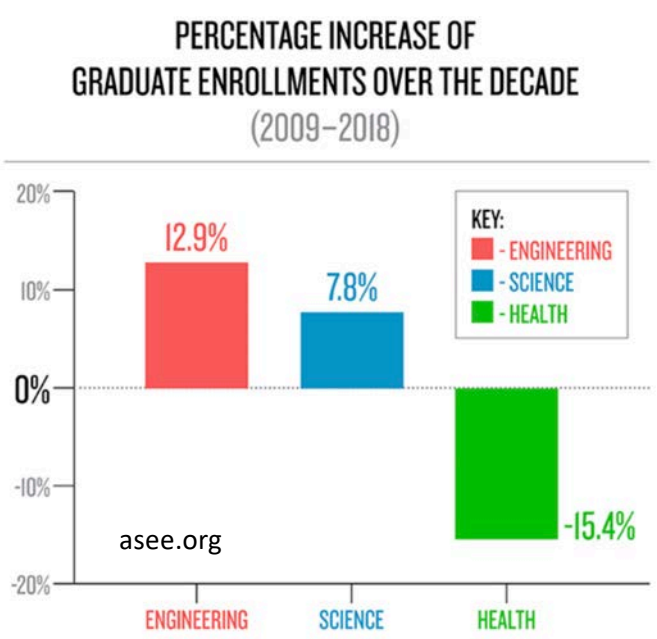

	2015	2016	2017	2018	2019	2020
Bachelor's Degree-Seeking	8,735,162	8,680,309	8,814,333	8,626,366	8,548,717	8,470,450
First-Year (all 4-year institutions)	1,554,191	1,554,206	1,525,834	1,517,142	1,480,532	1,356,484
Colorado Higher Ed	303,777	292,738	291,986	294,234	292,738	291,986
All STEM Degrees	2,022,114	2,035,788	2,079,530	2,105,960	2,103,272	2,105,144

NATIONAL STUDENT CLEARINGHOUSE RESEARCH CENTER https://nscresearchcenter.org

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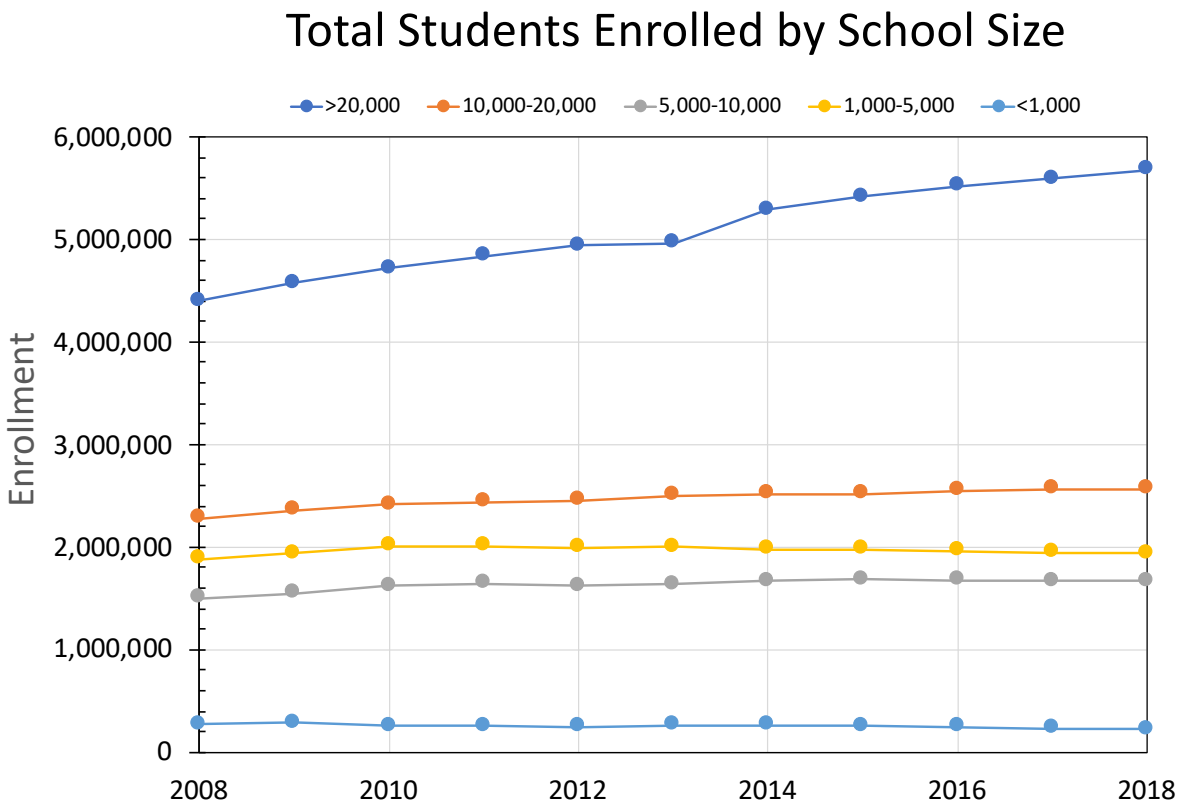
Why is MINES@150 Important?



STEM student growth is central to many schools' strategic plans

School Size (# of students)	% Enrollment Change 2010-2018
>20,000	21%
10,000-20,000	6%
5,000 - 10,000	3%
1,000 - 5,000	-4%
<1,000	-13%

Can we compete?

https://nces.ed.gov/ipeds/SummaryTables

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How Competitive Are We?

Q1: Which School Would You Attend?

Metrics	School A	School B	School C
Undergraduate Enrollment	4500	4500	24000
US News National University Ranking	20	82	74
US News Undergraduate Engineering Ranking	8	44	16
Student:Faculty Ratio	8:1	17:1	18:1
Average Net Price	$31,356	$24,297	$16,951
Freshmen Retention	96%	94%	93%
4-Year Graduation	76%	49%	46%
6-Year Graduation	91%	77%	76%

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Audience Polling (2016):

School A is most preferred (>90%)

School B is least preferred

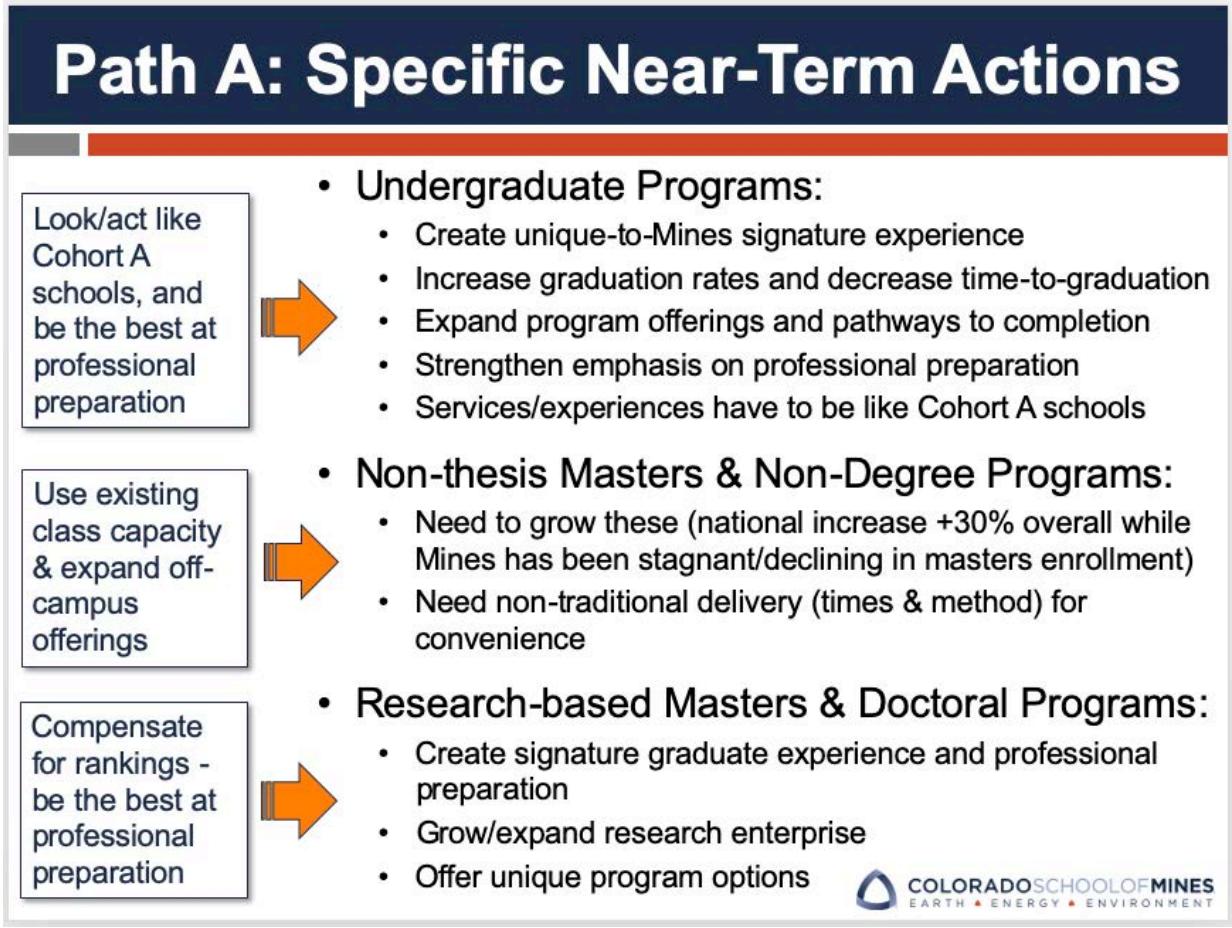
Desirable Attributes:

Medium-size • Highly Respected • Selective • Great student outcomes • Great ROI

Lessons-learned from recent admit & yield data?

Why is MINES@150 Important?

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.



MINES@150 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

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

Accessible and attractive to qualified students from all backgrounds

A leader in educating STEM students and professionals

A producer of differentiated and highly desired STEM-educated leaders

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

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

The exemplar for alumni affinity, visibility and involvement

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Mid-Sized: Macro-Level University Design

The **MINES@150** plan includes **macro-level design parameters** that define our size in the future.

These reflect program input, review of our financial model, benchmarking and our goals.

	Fall 2018 Values	Mines@150 Aggregate Design
Undergraduate Students	4908	5000
Masters/Non-Degree Students	670	1600
Doctoral Students	550	900
T/TT Faculty	223	250
Teaching Faculty & Professors of Practice	88	90
Research Grants & Contract Awards	$66M	$85M

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"Top-of-Mind & First-Choice" Imperatives

To achieve our MINES@150 aspirations, we must:

- become **more accessible and attractive** to the students we want at Mines (affordability, success metrics, living/learning, culture, demographics)
- produce **distinctive graduates: highly-valued, future-prepared and adaptable.**
- **re-align our programs portfolio with the future; expand offerings and diversify delivery**, grow the professionally-oriented pre- and post-graduate education.
- **grow the scale and impact of our R&D and other innovation activities:** build thematic strengths, expand partnerships, diversify funding sources, increase tech transfer.
- **build/acquire the infrastructure** needed for MINES@150.
- **grow/acquire the leadership** needed for MINES@150.
- **strengthen affinity** for MINES among our students, alumni, and external partners.
- **attract investment** to support our strategic initiatives.

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MINES@150 Priorities/Initiatives

Become more attractive and accessible to the students we want at MINES

A great community to learn, explore, live and work in

Attractive and accessible to qualified students from all backgrounds

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)

Financial Accessibility & ROI

(manageable maximum student debt at graduation ($40K?))

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)

Pathways to Mines – Expand Opportunity

(Increase the ways that students get attracted to and prepared for Mines)

DI&A Plan & Initiatives (woven into many initiatives)

MINES@150 Priorities/Initiatives

Produce distinctive graduates: highly-valued, future-prepared and adaptable

A leader in educating STEM students and professionals

A producer of differentiated and highly desired STEM-educated leaders

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)

Thorson/Honors & 1st Year Programs
(context: excite, inspire, engage)

Harvey, Grewcock, Vanguard Scholars
(thematic scholars communities)

Preparing Future Alumni
(owned/delivered by alumni)

MINES@150 Priorities/Initiatives

Re-align our programs portfolio with the future; expand offerings and diversify delivery

A leader in educating STEM students and professionals

A producer of differentiated and highly desired STEM-educated leaders

Launch Thematic/Interdisciplinary/Leading Edge Programs

- **Advanced Energy Systems**
(NREL+MINES)
- **Space Resources**
(aerospace industry + Mines unique expertise)
- **Advanced Manufacturing**
(additive manufacturing; materials+AI, etc.)
- **Quantum Engineering**
- **Others** (30+ new post-bac options; data sciences, etc.)

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

Offer Remote 4+1 Completion (complete while working 1st job)

Business Engineering & Mgmt Sciences; Construction Mgmt

MINES Online + MINES Marketing (expand interest and access and delivery beyond the Denver area)

MINES@150 Priorities/Initiatives

Grow the scale and impact of our R&D and other innovation activities

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

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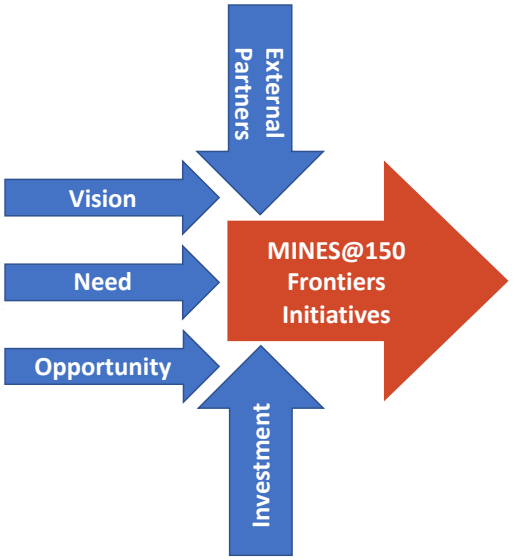
The Frontiers Initiatives

Positioning MINES for leadership at future S&T frontiers

Research & Education Frontiers at MINES



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

MINES@150 Priorities/Initiatives

Build/ acquire the infrastructure needed for MINES@150

Spruce Hall

1750 Jackson

Mines Park?

Beck Venture Center

Labriola Innovation Complex

McNeil Hall

MINES@150 Priorities/Initiatives

Grow/ acquire the leadership needed for MINES@150

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

Strengthen affinity for MINES among our students, alumni, and external partners

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)

MINES@150 Priorities/Initiatives

Attract investment to support our strategic initiatives

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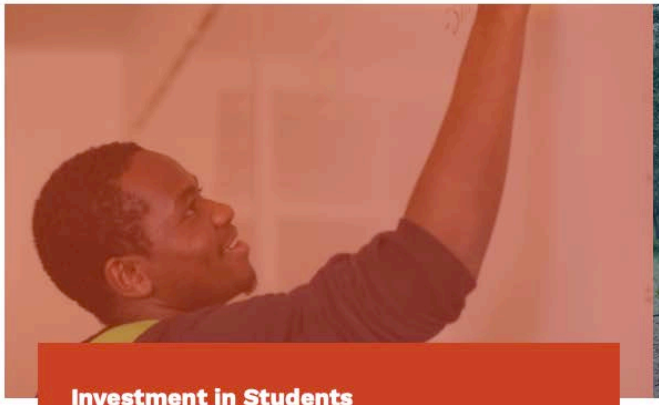

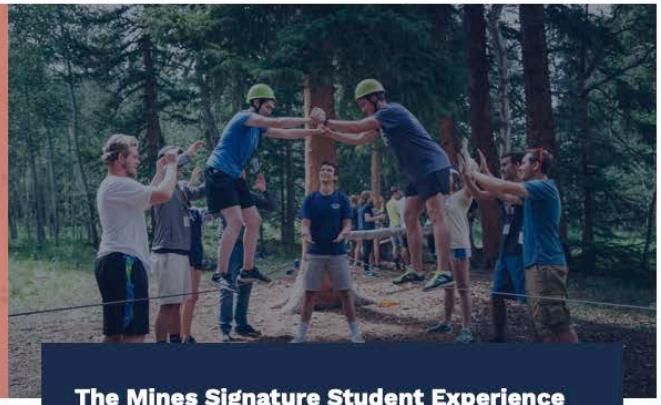

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