SOUTH DAKOTA MINES®

STRATEGIC PLAN

The long-term direction: mission, vision, values, strategic directions, outcomes, objectives, and indicators.

WHERE

STRATEGIC PLANNING PACKAGE
DOCUMENT TWO

I. Institutional Thesis

South Dakota Mines will become the nation's leading engineering and applied science university for experiential, industry-connected, AI-enabled professional formation.

The university will differentiate itself not by attempting to be a comprehensive institution competing broadly across every dimension of higher education, but by becoming exceptionally effective at preparing engineers, scientists, entrepreneurs, researchers, and technical leaders for a rapidly changing world.

Mines believes:

- Engineering and science education must move beyond knowledge transfer toward capability formation.
- Experiential learning should become the organizing principle of STEM education.
- Engineers and scientists should develop an entrepreneurial mindset characterized by curiosity, the ability to make connections across disciplines and contexts, and a commitment to creating value for others.
- Artificial intelligence makes the humanities and social sciences more—not less—essential to STEM education by cultivating judgment, creativity, ethical reasoning, communication, cultural understanding, and the ability to assess the human and societal consequences of technology.
- Industry partnerships should function as core academic infrastructure rather than external relationships.
- Student belonging, mentorship, wellness, and community are essential components of student learning and persistence.
- Institutional agility will become a major competitive advantage in higher education.
- Smaller institutions can move faster, experiment more effectively, and adapt more rapidly than large institutions.
- Strong faculty and staff support systems are foundational to institutional transformation.

The university will intentionally redesign elements of curriculum, operations, partnerships, faculty work, student experiences, institutional systems, and organizational structures to align with these realities.

This strategic plan is not intended to function as a static document. It is designed to be used as a living management tool for strategic decision-making, execution, prioritization, and adaptation, operationalized through the Strategic Operating System described in the companion document.

II. Mission, Vision, and Values

Mission

Our mission is to educate scientists and engineers to address global challenges, innovate to reach our creative potential, and engage in partnerships to transform society.

Vision

To be the nation's most future-ready STEM university by integrating experiential learning, research, and innovation.

Core Values

Tradition

We honor our rich history and maintain the traditions that define the Hardrocker spirit.

Rigor

We pursue excellence and maintain high standards in learning, research, and professional practice.

Ingenuity

We embrace creativity, experimentation, entrepreneurship, and adaptability.

Impact

We focus our efforts on meaningful outcomes that improve lives, industries, communities, and society.

Integrity

We act with honesty, accountability, transparency, and ethical responsibility.

Formation

We develop not only technical competence, but also judgment, leadership, resilience, character, and professional identity.

Partnership

We believe transformative outcomes emerge through collaboration with industry, government, alumni, and communities.

Belonging

We believe students, faculty, and staff thrive when they are known, supported, challenged, and connected to a meaningful community.

III. Strategic Directions

The university will organize its strategy around five long-term strategic directions.

These directions define the long-term identity, differentiation, and operating philosophy of Mines.

Strategic Direction 1: Reimagine STEM Education Around Experiential Learning and Professional Formation

Strategic Intent

Mines will become nationally recognized for engineering and applied science education built around authentic work, industry-connected learning, applied projects, research, entrepreneurship, mentorship, and professional formation.

Experiential and entrepreneurially minded learning, community, mentorship, and professional identity formation will become organizing principles of the student experience rather than supplemental activities.

Long-Term Outcomes (Five-Year Horizon)

Outcome 1.1

Every undergraduate student completes a meaningful experiential learning pathway.

Outcome 1.2

Mines graduates are nationally recognized for workforce readiness, adaptability, leadership, entrepreneurial mindset, and professional capability.

Outcome 1.3

The curriculum becomes increasingly project-based, design-centered, interdisciplinary, and industry-connected.

Outcome 1.4

Students graduate with demonstrable portfolios of work, impact, and applied problem-solving experience.

Outcome 1.5

Mines has a well-established pipeline of industry and community projects for experiential learning opportunities.

Strategic Objectives

Objective 1.1

Ensure every student participates in an integrated experiential learning pathway.

ANNUAL INDICATORS

- % of students participating in experiential learning:
  - Work-based: Internships, co-ops, WBL
  - Research-based: Undergraduate research, thesis, dissertation, research projects/problems, REUs
  - Community-based: Service learning, study/education abroad, interdisciplinary challenges
  - Problem-based: Capstone, design, IBL, Field Camp, KEEN-infused courses, project-based courses, business/entrepreneurship competitions
- % of courses in each academic program identified as experiential learning
- % of industry- and community-sponsored projects in which students identify needs, build, test, iterate, and communicate the value of their solutions
- % of multi-year relationships with companies that provide experiential learning projects
- % of classrooms, labs, and other spaces available for experiential learning

OUTCOME ALIGNMENT

- Outcome 1.1: Every undergraduate student completes a meaningful experiential learning pathway.
- Outcome 1.3: The curriculum becomes increasingly project-based, design-centered, interdisciplinary, and industry-connected.
- Outcome 1.5: Mines has a well-established pipeline of industry and community projects for experiential learning opportunities.

Objective 1.2

Develop graduates with the professional capabilities employers value most.

ANNUAL INDICATORS

- % of students participating in professional developmental programming:
  - Leadership
  - Professional identity and career planning
- % of Mines students with “Ethics” scores above ABET average on NCEES FE Exam

- Evaluation scores from internship and co-op supervisors
- Year-over-year increase in the number of unique employers participating in events and student professional development programming (e.g., pitch competitions, career fairs, mock interviews, resume reviews, design reviews, etc.)
- % of students demonstrating proficiency in the applied and ethical use of artificial intelligence in engineering and science practice

OUTCOME ALIGNMENT

- Outcome 1.2: Mines graduates are nationally recognized for workforce readiness, adaptability, leadership, entrepreneurial mindset, and professional capability.
- Outcome 1.4: Students graduate with demonstrable portfolios of work, impact, and applied problem-solving experience.

Strategic Direction 2: Accelerate Research, Innovation, and Economic Impact

Strategic Intent

Mines will serve as a major driver of regional and national growth through research, commercialization, entrepreneurship, workforce development, and engagement in strategic partnerships.

The university will function as both an educational institution and a platform for economic growth and technological advancement.

Working with Elevate Rapid City, state and federal government agencies/offices, and other regional partners, the university will help develop an Innovation District that connects research capability, technical talent, entrepreneurship, company growth, workforce development, and community prosperity.

Long-Term Outcomes (Five-Year Horizon)

Outcome 2.1
Mines is nationally recognized in selected strategic research and innovation areas.

Outcome 2.2
The university significantly expands applied research and commercialization activity.

Outcome 2.3
The university is indispensable for regional economic development.

Outcome 2.4
Research, innovation, workforce development, and experiential education are deeply integrated.

Strategic Research and Innovation Themes

The university will increasingly organize research growth and external engagement around challenge areas where Mines can develop distinctive national relevance.

Existing strengths:

- Advanced Materials and Manufacturing
- Data Science and Numerical Modeling
- Smart and Resilient Cyber Infrastructure
- Critical and Sustainable Resources
- Deep Underground Science and Engineering

Future growth:

- Discipline-based Education Research

These themes will be refined and advanced in coordination with regional and national opportunities, including Innovation District priorities in national security, medical technology, critical minerals, and deep underground science and engineering.

Strategic Objectives

Objective 2.1

Build nationally distinctive research and innovation strengths.

ANNUAL INDICATORS

- # of eligible junior faculty submitting for or receiving early-career awards
- % of tenure-track faculty submitting at least one proposal as PI or Co-PI annually (FY2027 target: 50%)
- Total value of industry-funded research
- # of students participating in:
  - Innovation-based learning
  - Entrepreneurial-related activities and competitions

OUTCOME ALIGNMENT

- Outcome 2.1: Mines is nationally recognized in selected strategic research and innovation areas.
- Outcome 2.2: The university significantly expands applied research and commercialization activity.
- Outcome 2.4: Research, innovation, workforce development, and experiential education are deeply integrated.

Objective 2.2

Position Mines as the region's primary university partner for innovation, talent development, and technology-driven economic growth.

ANNUAL INDICATORS

- Ratio of new invention disclosures per $1 million in research expenditures
- # of start-up companies formed
- # of companies in Innovation District employing Mines students and graduates
- % of students placed in regional internships or co-ops
- % of graduates employed in South Dakota after graduation
- Survey scores from regional employers assessing responsiveness, workforce preparation, and ease of partnership with Mines
- # of regional external start-ups utilizing university-affiliated lab space, equipment, or core facilities

OUTCOME ALIGNMENT

- Outcome 2.2: The university significantly expands applied research and commercialization activity.
- Outcome 2.3: The university is indispensable for regional economic development.

Strategic Direction 3: Expand Access and Affordability While Strengthening Student and Workforce Outcomes

Strategic Intent

Mines will provide one of the highest-value STEM educations in America—pairing academic rigor with real affordability, strong support systems, and exceptional career outcomes. We will build pathways that reduce financial barriers and expand who can access a Mines education, while strengthening the systems that keep students here and moving toward graduation.

Long-Term Outcomes (Five-Year Horizon)

Outcome 3.1

Mines becomes nationally recognized for educational value and return on investment.

Outcome 3.2

Student debt burdens decrease significantly.

Outcome 3.3

Enrollment becomes more diversified and resilient.

Outcome 3.4

Graduates maintain exceptional career outcomes.

Outcome 3.5

Retention and graduation rates improve through integrated student success systems.

Strategic Objectives

Objective 3.1

Reduce financial barriers and student debt.

ANNUAL INDICATORS

- Student financial need:
  - Average $ of unmet financial need
  - % of financial need met
- IPEDS Net Price by income compared to IPEDS peer institutions
- Student enrollment, disaggregated by population
  - Traditional
  - Post-traditional
  - Transfer
  - Dual/Concurrent Enrollment conversion
  - Accelerated master's

OUTCOME ALIGNMENT

- Outcome 3.1: Mines becomes nationally recognized for educational value and return on investment.
- Outcome 3.2: Student debt burdens decrease significantly.
- Outcome 3.3: Enrollment becomes more diversified and resilient.

Objective 3.2

Ensure every student graduates prepared for long-term success.

ANNUAL INDICATORS

- DFW rates in undergraduate calculus, chemistry, and physics courses
- Retention rates, disaggregated by degree level:
  - Undergraduate and Doctoral: Year 1-2, Year 2-3, Year 3-4
  - Master's: Year 1-2, Year 2-3
- RNL SSI biennial survey data regarding student belonging, involvement, intellectual growth, and career services (Qu. 1, 39, 46, 49)
- % of students completing career readiness milestones by cohort year

OUTCOME ALIGNMENT

- Outcome 3.4: Graduates maintain exceptional career outcomes.
- Outcome 3.5: Retention and graduation rates improve through integrated student success systems.

Strategic Direction 4: Build an Agile, High-Performing Institutional Culture

Strategic Intent

Mines will build a culture and organizational model capable of adapting more rapidly than peer institutions.

The university will prioritize alignment, transparency, experimentation, accountability, authentic community, and continuous improvement.

Long-Term Outcomes (Five-Year Horizon)

Outcome 4.1

Accelerate decision making to be faster, clearer, and data-informed, positioning the university as a leader in speed, adaptability, and innovation.

Outcome 4.2

Faculty and staff engagement, support, and alignment increase.

Outcome 4.3

Resources become increasingly aligned with strategic priorities.

Outcome 4.4

Build a distinctive campus culture rooted in the identity and creativity of the Mines community.

Strategic Objectives

Objective 4.1

Build an operating model that enables faster, more adaptive decision making.

ANNUAL INDICATORS

- $ of operational budget reallocated toward strategic priorities
- Average time it takes to:
  - Launch new initiatives
  - Launch new academic programs
- # of process improvement projects utilizing AI or other technologies to improve efficiency and effectiveness
- Survey scores from students, faculty, and staff measuring speed of resolution and clarity of communication from operational units

OUTCOME ALIGNMENT

- Outcome 4.1: Accelerate decision making to be faster, clearer, and data-informed, positioning the university as a leader in speed, adaptability, and innovation.
- Outcome 4.3: Resources become increasingly aligned with strategic priorities.

Objective 4.2

Build a culture where faculty and staff are equipped and empowered to advance the strategy.

ANNUAL INDICATORS

- % of staff and faculty performance goals that explicitly tie to at least one strategic plan objective.
- % of staff and faculty completing professional development training in leadership, agile project management, change management, continuous improvement, entrepreneurial mindset, or innovative pedagogy/research.
- Engagement survey scores from faculty and staff
- % of faculty and staff participating on strategic plan initiative implementation teams
- % of faculty and staff participating in strategic investment fund proposals

OUTCOME ALIGNMENT

- Outcome 4.2: Faculty and staff engagement, support, and alignment increase.
- Outcome 4.3: Resources become increasingly aligned with strategic priorities.
- Outcome 4.4: Build a distinctive campus culture rooted in the identity and creativity of the Mines community.

Strategic Direction 5: Strengthen Mines' Reputation Through Storytelling and Engagement

Strategic Intent

Mines will become nationally recognized as one of America's most distinctive STEM universities by telling a compelling and authentic story of academic rigor, hands-on experiential learning, entrepreneurial innovation, student success, and workforce impact.

The university will intentionally strengthen its reputation through coordinated communications, strategic marketing, alumni and donor engagement, and public outreach that elevates awareness of the Mines experience and reinforces its value to students, employers, communities, and society.

By celebrating its traditions, showcasing its outcomes, and amplifying the achievements of students, faculty, staff, and alumni, Mines will build enduring pride, deepen stakeholder engagement, and increase enrollment, philanthropic support, and national visibility.

The university will work with Elevate Rapid City and other partners to position Rapid City and the Black Hills as a nationally recognized hub for engineering talent, applied research, entrepreneurship, and technology-driven growth.

Long-Term Outcomes (Five-Year Horizon)

Outcome 5.1

Mines develops a nationally recognized and differentiated brand centered on academic rigor, experiential learning, innovation, academic and athletic accomplishments, and exceptional career outcomes.

Outcome 5.2

The university becomes the leading public voice for experiential learning, entrepreneurial mindset, and education innovation in the region while increasing state, national, and industry visibility.

Outcome 5.3

Alumni, donors, employers, and community stakeholders demonstrate increased engagement, pride, advocacy, and investment in the university.

Outcome 5.4

The traditions, culture, student, and alumni achievements of Mines are more visible and celebrated, strengthening institutional identity and community connection.

Strategic Objectives

Objective 5.1

Build a nationally distinctive South Dakota Mines brand.

ANNUAL INDICATORS

- Nationally recognized rankings.
- Click-through and conversion rates from national campaigns.
- Engagement rates of digital content showcasing unique Mines differentiators and accomplishments, including career placement, experiential learning, rankings, ROI, research, innovation, and athletics.

OUTCOME ALIGNMENT

- Outcome 5.1: Mines develops a nationally recognized and differentiated brand centered on academic rigor, experiential learning, innovation, academic and athletic accomplishments, and exceptional career outcomes
- Outcome 5.2: The university becomes the leading public voice for experiential learning, entrepreneurial mindset, and education innovation in the region while increasing state, national, and industry visibility.
- Outcome 5.4: The traditions, culture, student, and alumni achievements of Mines are more visible and celebrated, strengthening institutional identity and community connection.

Objective 5.2

Deepen lifelong engagement with the Mines community.

ANNUAL INDICATORS

- # of faculty, staff, and students involved in local and regional organizations
- # of alumni or industry partners serving as guest lecturers, panel speakers, student org advisors, competition judges, etc.
- $ value of contributions to any CARA campaign by previously unengaged alumni or friend
- # of corporate and industry partnerships that convert to philanthropic support

OUTCOME ALIGNMENT

- Outcome 5.3: Alumni, donors, employers, and community stakeholders demonstrate increased engagement, pride, advocacy, and investment in the university.

IV. Institutional Success Metrics

Board-Level Institutional Metrics

The following ten measures constitute the primary institutional scorecard reviewed by the Board of Regents and reported publicly. The broader set that follows provides the supporting detail behind them.

- Total enrollment, disaggregated by degree level
- First-to-second-year retention rate
- Six-year graduation rate
- Placement rate in field, graduate school, or military service
- Median student debt at graduation
- Experiential learning participation rate
- Total research expenditures
- Industry-funded research expenditures
- Net tuition revenue and operating margin
- Faculty and staff engagement survey score

Supporting Institutional Metrics by Category

Student Success

- Total enrollment
- Retention rates
- Graduation rates
- Placement rates
- Student debt at graduation
- Student earnings outcomes
- Student belonging and engagement measures

Educational Differentiation

- Experiential learning participation
- Industry-sponsored project participation
- Internship and co-op participation
- Undergraduate research participation
- Student portfolio completion

Research and Innovation

- Research expenditures
- Industry-funded research
- PhD graduates
- Startups launched
- Licensing activity
- Invention disclosures
- Strategic partnership growth

Financial and Operational Health

- Net tuition revenue
- Philanthropic support
- Operating margin
- Administrative efficiency measures
- AI integration measures
- Strategic resource allocation percentage

Reputation and Impact

- Employer satisfaction
- Faculty and staff satisfaction
- Alumni engagement
- Partnership growth
- National visibility measures
- Economic impact measures
- K-12 outreach participation

V. Conclusion

Mines believes the future of engineering and science education will belong to institutions that:

- Develop capabilities in their students rather than simply transmit knowledge
- Integrate learning with authentic work and experience
- Adapt rapidly to technological and societal change
- Maintain rigor while increasing flexibility and access
- Build strong partnerships with industry and communities
- Create distinctive institutional identities
- Intentionally design for the future rather than optimize the past
- Integrate student success, belonging, mentorship, and professional formation into the educational experience
- Support faculty and staff through intentional investment in institutional capacity and leadership

This strategic plan is intended to function not simply as a document but as a living management tool, put into practice through the Strategic Operating System.

Its purpose is to help Mines continuously align:

- Vision and execution
- Resources and priorities
- Innovation and accountability
- Institutional identity and decision-making
- Present operations and future direction

The university will remain grounded in its historic strengths while intentionally evolving to meet the needs of the next generation of engineers, scientists, innovators, entrepreneurs, and leaders.

Appendix: Glossary of Terms and Acronyms

- ABET — The accrediting body for postsecondary programs in applied and natural science, computing, engineering, and engineering technology.
- AI — Artificial intelligence.
- BOR — South Dakota Board of Regents, the governing body for the state's public universities.
- CAMP — Center for Advanced Manufacturing and Production, the Mines co-curricular program in which student teams design, build, and compete.
- CARA — Center for Alumni Relations and Advancement, the Mines alumni and philanthropic organization.
- DFW — The rate at which students complete a course with a grade of D or F or withdraw from it.
- EECS — Department of Electrical Engineering and Computer Science.
- EIR — Entrepreneur in Residence.
- EMGE — Engineers Make Great Entrepreneurs, the Mines entrepreneurship speaker series and competition.
- FE Exam — Fundamentals of Engineering examination, administered by NCEES, typically the first step toward professional engineering licensure.
- IBL — Innovation-Based Learning, in which students identify an unmet industry need, define the problem, prototype, test, and communicate results to partners.
- I-Corps — The National Science Foundation Innovation Corps program, which trains researchers to assess the commercial potential of their work.
- IPEDS — Integrated Postsecondary Education Data System, the federal higher education data collection used for peer comparison.
- KEEN — Kern Entrepreneurial Engineering Network, a national network focused on developing an entrepreneurial mindset in engineering students.
- M&R — Maintenance and Repair funds.
- NCEES — National Council of Examiners for Engineering and Surveying.
- OSE — Office of the State Engineer, which oversees state facility projects.

- PI — Principal investigator, the lead researcher on a sponsored project.
- REU — Research Experiences for Undergraduates, a National Science Foundation undergraduate research program.
- RNL SSI — Ruffalo Noel Levitz Student Satisfaction Inventory, a national student experience survey.
- ROI — Return on investment.
- SIF — Strategic Investment Fund.
- WBL — Work-Based Learning, in which students apply technical and professional skills in an authentic workplace setting.