South Dakota
School of Mines & Technology
A Legacy of Excellence
Institutional Profile
History

The Dakota Territorial Legislature established the Dakota School of Mines in 1885 to provide instruction in mining engineering at a location where mining was the primary industry. When North Dakota and South Dakota were granted statehood in 1889, the institution was re-designated as the South Dakota School of Mines. In 1943, the state legislature changed the name of the institution to the South Dakota School of Mines & Technology in recognition of its expanded role in new areas of science and technology.

Governance

The nine-member Board of Regents, composed of members appointed by the governor for six-year terms, and one student regent appointed for a two-year term, provides governance for public higher education in South Dakota. The Board of Regents employs a full-time staff at its offices in Pierre. Dr. Jack R. Warner serves as executive director and CEO.

The university’s Executive Council consists of the president, provost and vice president for academic affairs, vice president for finance and administration, vice president for research, vice president for student affairs/dean of students, vice president for university relations, director of human resources, and the athletic director, who collectively provide strategic, fiscal, and administrative leadership for the university.

Academic Organization & Degree Programs

The academic organization of the South Dakota School of Mines & Technology is based on 16 academic departments administered by full-time department heads who work with the provost and vice president for academic affairs and the dean of graduate education in the Academic Leadership Council to monitor and ensure quality curricula.

Offered by the academic departments are 16 bachelor of science degree programs (Applied Biological Sciences, Applied and Computational Mathematics, Chemical Engineering, Chemistry, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Geological Engineering, Geology, Industrial Engineering and Engineering Management, Interdisciplinary Sciences, Mechanical Engineering, Metallurgical Engineering, Mining Engineering, and Physics); 14 master of science degree programs (Atmospheric and Environmental Sciences, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computational Sciences and Robotics, Construction Management, Electrical Engineering, Engineering Management, Geology and Geological Engineering, Materials Engineering and Science, Mechanical Engineering, Mining Engineering, Paleontology, and Physics); and seven doctoral programs (Atmospheric and Environmental Sciences, Biomedical Engineering, Chemical and Biological Engineering, Geology and Geological Engineering, Materials Engineering and Science, Mechanical Engineering, Nanoscience and Nanoengineering) with an eighth (Physics) pending legislative funding.

Minors are offered in Atmospheric Sciences, Computer Science, Environmental Engineering, Geology, Geospatial Technology, Materials Science-Metals, Mathematics, Occupational Safety, Physics, Robotics, and Sustainable Engineering.
Certificates may be earned in Construction Management (graduate level), Engineering Management and Leadership (undergraduate level), Global Engineering (undergraduate level), Occupational Safety (undergraduate or graduate level), Six Sigma Greenbelt (undergraduate or graduate level), and Technology Innovation (undergraduate or graduate level).

**Accreditation**

The South Dakota School of Mines & Technology is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. The undergraduate programs for all SDSM&T engineering degrees and the computer science degree are accredited by the Accreditation Board for Engineering and Technology (ABET). In addition, the chemistry program is certified by the American Chemical Society. The university has participated in the Academic Quality Improvement Program (AQIP) of the Higher Learning Commission-North Central Association of Colleges and Schools since 2006.

**Faculty & Staff**

The South Dakota School of Mines & Technology employs 144 faculty members; 51 percent are tenured. Eighty-four percent hold doctoral or other appropriate terminal degrees. The staff is comprised of an additional 203 employees.

**CAMP**

The Center for Advanced Manufacturing and Production (CAMP) is a co-curricular learning partnership for engineering education with the objectives of developing practical engineering skills, teaming and leadership skills, and self-authorship in the students. It integrates academic affairs and student affairs in a constructive, developmental, learner-centered approach based on voluntary individual contributions with students organizing themselves into teams that actively encourage participation starting in the freshman year. Development occurs through the experiences of designing, building, testing, and competing in an engineering challenge created by a national or international engineering society or through completing a service-learning project in connection with a humanitarian society. Critical values of trust, respect, deep understanding, well-being, and responsibility are stressed as essential in resolving conflicts, establishing goals, and completing a project. The level of success in achieving these values, a key teaming assessment, is determined through a reflective team discussion following their competition. The university currently has 14 CAMP teams competing regionally, nationally, and internationally.  

**Students**

In the fall of 2012, SDSM&T enrolled 2,424 students. Of those, 2,101 were undergraduate students and 323 were graduate students. Fifty-three percent of SDSM&T students are from South Dakota. Nearly a quarter of the students come from Colorado, Iowa, Minnesota, Montana, Nebraska, North Dakota, and Wyoming. Nearly 10 percent of SDSM&T students are minorities, and approximately 6 percent are international. The institution is particularly committed to the success of Native American students. The student/faculty ratio is approximately 14:1.
Student Activities

More than 80 activities and organizations are available for SDSM&T students. Opportunities abound for participation in academe, Greek life, honor societies, professional and leadership development, the Center of Excellence for Advanced Manufacturing & Production (CAMP), community service, multicultural and international organizations, student government, media (newspaper and radio station), choral and instrumental music, intramural sports, special interest, and religious organizations. SDSM&T offers a full array of intercollegiate sports and is in the final stages of transitioning into NCAA II. Army ROTC Military Science is also available.

Support services for students include Ivanhoe International, Tech Learning, Career and Professional Development, Multicultural Affairs, Student Activities and Leadership, and Veterans Resource Centers, Counseling, Wellness, health services, and child care among others.

support.sdmines.edu/studentactivities

Campus & Facilities

The beautiful SDSM&T 118-acre campus has 23 major buildings, constructed from 1928 to 2010, which surround the historic arch on the campus quad. Future expansion and growth are reflected in the 30-year Campus Master Plan completed in 2011. The plan details recommendations for buildings, open space, roadways, and utilities infrastructure to meet the intended growth in enrollment, faculty, and research as described in the university’s Mines 2020 strategic vision and plan.

president.sdsmt.edu/159948/; president.sdsmt.edu/183643/

Recent capital projects include the James E. Martin Paleontology Research Laboratory that houses a $7.7 million research facility, and the Chemical & Biological Engineering/Chemistry Building with $19.1 million in additional classrooms, laboratories, and student spaces. SDSM&T is pursuing projects included in the Campus Master Plan that includes a student recreation center and field house, a major research facility, and a proposed university district reaching toward downtown Rapid City.

The Museum of Geology consists of free exhibits for the public that highlight the rich paleontological and mineralogical resources of the West River region of South Dakota. The James E. Martin Paleontology Research Laboratory currently holds over 500,000 specimens in the mineralogy, paleobotany, invertebrate paleontology, micropaleontology, neontology, and vertebrate paleontology collections. It hosts facilities for sediment sample processing, geochemical sample preparation, fossil preparation, specimen and display fabrication, and 2D and 3D digital imaging.

The Apex Gallery offers changing exhibitions designed to reflect a cross section of cultural expressions and perspectives. On view are contemporary works of artists and scientists, many of whom are either nationally or internationally recognized.

The Devereaux Library’s collection supports the entire range of academic disciplines, with a primary focus on science and engineering. Resources include print and audiovisual materials, as well as access to more than a dozen major electronic databases. Special collections include the South Dakota Collection and extensive federal government collections. The Devereaux Library is the state’s official Patent and Trademark Depository Library.

Location & Community

The SDSM&T campus is located east of downtown Rapid City along the expanding Highway 79 economic corridor. It enjoys a close relationship with the community. The Downtown
Campus houses additional classroom/laboratory space and conferencing availability. In addition, the Rapid City Economic Development Foundation built the Black Hills Business Development Center on campus. The 40,000-square-foot facility serves as a technology-based business incubator and offers business and economic development services.

A gateway to the American West, Rapid City lies nestled between the Badlands National Park and the Black Hills National Forest at an elevation of 3,241 feet in western South Dakota. Rapid City's population is over 68,000 with over 126,000 in the metro area. Ellsworth Air Force Base is located east of Rapid City and is home to the 28th Bomb Wing and the B-1B Lancer aircraft. The nearby Sanford Underground Research Facility lies 4,850 feet underground in the former Homestake Gold Mine in Lead, South Dakota.

Home to the Mount Rushmore and Crazy Horse Memorials, the Black Hills offer a variety of year-round recreational pursuits: scenic drives, waterfalls, streams, lakes, abundant wildlife, acclaimed recreational trails, skiing, fishing, hunting, camping, and rock climbing. Protection offered from the adjacent mountains offers unexpectedly mild winters and more sunshine on average than Honolulu or Miami.

VisitRapidCity.com

Travel

Rapid City Regional airport hosts commuter airlines Allegiant, American/American Eagle, Delta and United with service to Chicago, Dallas/Fort Worth, Denver, Houston, Las Vegas, Mesa/Phoenix, Minneapolis/St. Paul, and Salt Lake City. Interstate 90 gives Rapid City’s residents easy driving access to all parts of the state and region.

Finance

In FY12, state appropriations totaled approximately 23 percent of actual revenues. Tuition and fees were approximately 29 percent and federal funds 20 percent. These three areas funded approximately 72 percent of SDSM&T’s total budget for FY12. Other major sources of funding include foundation support and auxiliary services.

Research & Development Activities

Total awards from grants and contracts have ranged from a low of about $10 million in FY08 to a high of about $35 million in FY10, with awards in FY12 at about $14 million. Major funding sources for FY12 include, in order of award size: Department of Energy, Department of Defense, NASA, National Science Foundation, and the state of South Dakota.

The research agenda for the School of Mines focuses on four broad topics: Energy and Environment, Materials and Manufacturing, Underground Science and Engineering, and Science, Technology, Engineering and Mathematics (STEM) Education. These topics include most of the current research and provide a structure for future growth of the research enterprise.
SDSM&T is home to numerous advanced technology laboratories, providing the infrastructure needed to conduct large research projects: the Arbogast Materials Processing and Joining Laboratory (AMP), which includes unique capabilities and equipment for laser additive manufacturing and friction stir welding; the Composites and Polymer Engineering Laboratory (CAPE), which houses significant equipment for polymer-related research; the Experimental and Computational Mechanics Laboratory (ECML), which houses a laboratory and classrooms dedicated to high-end computer modeling; and the Engineering and Mining Experiment Station (EMES) supporting public and private research endeavors through an extensive array of multi-user instrumentation.

In addition to these major infrastructure components, the university has been awarded four major research centers: two state of South Dakota-funded Governors Centers—the Repair, Refurbish and Return to Service Applied Research Center (R3S-ARC) and the Center for Bioprocessing, Research and Development (CBRD); and two NSF-funded Industry/University Cooperative Research Centers (I/U CRCs)—the Center for Friction Stir Processing (CFSP) and the Center for Bioenergy Research and Development (CBERD), both of which involve major collaborations between multiple universities and industries.

**Distinctions**

- SDSM&T faculty members and students have been the recipients of numerous prestigious awards including Fulbright fellowships, National Science Foundation CAREER awards, and NASA Space Technology Research Fellowships, among others.
- Named a 2012 Fulbright Top Producing Institution.
- Four SDSM&T professors have been named US Professors of the Year by the CASE and the Carnegie Foundation for the Advancement of Teaching.
- Starting salaries for the 2010-2011 graduating class equaled $56,723 with a 97 percent placement rate. These starting salaries are higher than those of graduates from Harvard. Over 76 percent of graduates have internship and/or co-op experience.
- Dr. Umesh Korde, the Pearson Professor of Mechanical Engineering, developed an active systems approach to enable efficient, cost-effective electric power generation from ocean waves. Korde’s approach, funded by the US Navy, represents a major breakthrough directly related to the nation’s energy security and the United States’ energy future.
- One of “America’s 100 Best Buys” for 15 consecutive years.
- Awarded the “Seven Seals Award” by the Department of Defense and Employer Support of the Guard and Reserve for “meritorious leadership and initiative in support of the men and women who serve America in the National Guard and Reserve.”

**Collaborative Programs with System Institutions**

The School of Mines offers joint master’s and doctoral programs in biomedical engineering in collaboration with the University of South Dakota (USD). SDSM&T also offers a bachelor’s degree in physics with USD and South Dakota State University, and a master’s degree in physics with USD.

**SDSM&T Foundation & SDSM&T Alumni Association**

The SDSM&T Foundation and the SDSM&T Alumni Association are each separate tax-exempt 501(c)(3) organizations. The Foundation’s total assets exceed $53 million and FY12 donations totaled $6.9 million. In July 2012, the School of Mines Foundation completed its “Building the Dream” capital campaign and reported raising a total of $53.6 million for scholarships, faculty, and student support, and infrastructure. foundation.sdsmt.edu

The Alumni Association represents approximately 15,000 living alumni—one fifth of whom reside in the state of South Dakota, and almost 1,800 who reside nearby in the Black Hills. alumni.sdsmt.edu