Report documents requested by Representative Sue Peterson:


2. Annual campus reports prepared by the Director of Multicultural Affairs with e-mail distribution to the campus and available on the SD Mines website (via the following links):
   a. American Indian Summary Report;
   b. Diversity Report

3. Other documents include the Diversity Statement and diversity and inclusion are core tenants of the strategic plan developed this past year (attached).

The SD Mines reporting structures regarding diversity and diversity offices, all of whom work in close collaboration with multiple departments across campus:

- Director of Planning and Events reports to President; part of responsibilities including serving as the liaison with SD Tribal high schools
- Director, Center of Multicultural Affairs (changing to Center for Inclusion) reports to the VP for Student Development/Dean of Students and coordinates extensively with Human Resources
- Tiospaye Scholar Program reports to Campus PI of an NSF grant within Academic Affairs
- Women in Science and Engineering reports to the Student Success Center within Academic Affairs
- Veterans Resource Center reports to the VP for Student Development/Dean of Students
- Ivanhoe International Center reports to the VP for Student Development/Dean of Students

Please let me know if we can provide further information.

Regards
Jim
South Dakota School of Mines & Technology
Diversity Report
Glossary of Terms

- AAC – Academic Affairs Council, consisting of the Vice Presidents for Academic Affairs of each of the South Dakota public universities
- ABET – nonprofit, non-governmental agency that accredits programs in applied and natural science, computing, engineering and engineering technology
- ALC – Academic Leadership Council, consisting of the department and program heads at SD Mines
- Carnegie classification – framework for recognizing and describing institutional diversity in U.S. higher education
- CAAP exam – Collegiate Assessment of Academic Proficiency
- CATME – Comprehensive Assessment of Team Member Effectiveness
- COPS – Council of Presidents & Superintendents, consisting of the Presidents and Superintendents of each of the South Dakota public universities
- CPDC – Career & Professional Development Center at SD Mines
- Discipline Councils – systemwide standing committees comprised of faculty experts in the fields of communication, education, English, fine arts, general education, physical education, humanities, library, mathematics, natural sciences, and social sciences. One faculty member from each campus in each area of expertise serves on a council. Each council has a member of the AAC that serves as liaison to the AAC.
- EAB – Education & Advisory Board
- Elderhostel – a not-for-profit organization that provides educational opportunities and learning adventures to people age 55 and over
- EPICS – Engineering/Science Projects in Community Service
- EQI - Emotional Quotient Inventory
- FE exam – Fundamentals of Engineering
- GIS – geographic information system; a framework for gathering, managing, and analyzing data
- GPI – Global Perspectives Inventory
- Mines Advantage – an optional professional development program designed for all SD Mines students. Participating students will go through 30 total experiences in 6 core competency areas.
- OMA – Office of Multicultural Affairs at SD Mines
- SALC – Student Activities & Leadership Center at SD Mines
- SGEAC – System General Education Assessment Committee
- SYSA – Second Year Student Assessment
- Six Sigma – set of techniques and tools for process improvement
- SSI – Student Satisfaction Inventory
- WebAdvisor – an interactive web application that allows students to register for classes and view their individual personal information online
- WiSE – Women in Science & Engineering
Institutional self-study for the Higher Learning Commission

South Dakota School of Mines and Technology

Submitted 6/29/2018

Please note that this file contains the two Criteria / Core Components SD Mines must meet to maintain accreditation, i.e., Criterion 1, Core Component 1.C and Criterion 3, Core Component 3.B, and the self-study responses to the same. The language of the Core Components is in blue font. All Criteria and Core Components can be viewed at https://www.hlcommission.org/Policies/criteria-and-core-components.html. Links in this document are not active, but any item linked will be provided if requested.
Criterion 1, Core Component 1.C

The institution understands the relationship between its mission and the diversity of society.

1. The institution addresses its role in a multicultural society.
2. The institution’s processes and activities reflect attention to human diversity as appropriate within its mission and for the constituencies it serves.

Responses

1.3: Academic Program Design

SD Mines is challenged to build diversity on campus; however, we are attuned to underrepresented groups and strive to address their needs. A few charts depict our challenge regarding diversity clearly. The largest underrepresented group on campus is women, and they are served through the WiSE program. The largest racial minority is Native Americans, and they are served through the Office of Multicultural Affairs (OMA). The OMA serves additional underrepresented, but nonetheless significant, groups on campus (e.g., domestic students of color, first-generation, low-income, LGBTQ).

Data from the Chronicle of Higher Education Almanac on employee diversity show that, at SD Mines, women are represented in administrative positions and as graduate assistants nearly on par with other 4-year public colleges and universities in the US. However, the only other category in which SD Mines performs well in diversity is among graduate assistants, many of whom are international students.

The SD Mines Inclusion Committee was created after a 2014 study of the level of “cultural competence” among employees. Cultural competence can be understood as one’s ability to communicate, collaborate, and work across cultural frames of reference without bias.

The Inclusion Committee promotes intercultural competence on campus and serves as an advisory group for other diversity-related goals and initiatives. The Committee assesses cultural competency and identifies programming to improve campus climate regarding diversity and inclusion.

An initial accomplishment for this Committee was to formulate a campus Inclusion Statement that appears alongside the Mission and Vision and is promulgated across campus via signage and videos. Every year, a highly detailed and readable Diversity Report (see page 3) and a separate Programming to Support Access and Success of American Indian Students report are published and distributed in print and online.

Recent national developments and awareness of institutional challenges related to inclusion and diversity prompted the Faculty Senate to pass a resolution in 2017 to support of the work of the Inclusion Committee and all members of the campus community.

Women, our single largest underrepresented group have long been served through the WiSE (Women in Science and Engineering) program, a mentoring program, a dedicated Center, and co-curricular activities.
Unaffiliated white males form an over-represented but under-served group that is gaining attention. In 2015, data analysis showed retention of male students was the lowest in 10 years, at 74%. Furthermore, first-generation college students, as well as those who place into remedial math courses like college algebra or trigonometry, are among the lowest-retaining populations, and there is significant crossover between these student populations.

These observations prompted a study of ‘points of contact’ or affiliations (e.g., clubs, centers, such as the Veterans’ center, etc.), which confirmed that the single largest group of students lacking targeted support was “unaffiliated white males.” In 2017, the staff of the Success Center tackled this issue by emulating aspects of the women’s program (WiSE) to create a peer mentoring program for men.

1P3.2

The two major key stakeholder groups SD Mines takes into consideration when developing and updating academic programs (aside from students) are employers and research partners.

Unlike many institutions, SD Mines does not provide much customized training for business and industry beyond the offering of GIS workshops, specialized workshops in topics such as mine ventilation, and certificates in Six Sigma.

Aside from STEM youth outreach, we do not offer community education or related activities, such as Elder Hostel. Black Hills State, a comprehensive university 45 miles from SD Mines, offers this type of programming and services and maintains a ‘university center’ in Rapid City.

Research partners of SD Mines include businesses and industries as well as Federal agencies (e.g., Department of Defense, National Science Foundation, National Institutes of Health), state agencies (e.g., Geological Survey and water resources, Department of Transportation), regional research centers, such as the Sanford Underground Research Facility, and the Ellsworth Airforce Base.

A current listing of employers is provided to give reviewers a sense of the scope and nature of this category of stakeholder.

As they organize the semi-annual Career Fairs, staff in the Career and Professional Development Center (CPDC) maintain close contact with employers and remain cognizant of employer needs in managing the coops and internship placements that 77% of all undergraduates' experience. During the Career Fairs, CPDC staff interview recruiters about their needs and survey all recruiters regarding the quality and preparation of students they interview. Consultations with employers were an important element of developing the learning outcomes of the Mines Advantage professional development co-curricular program.

The needs of research, business, and industry partners are monitored, in part, through Research Affairs and by the Associate Vice President for Research-Economic Development. However, the needs are too various and too rapidly changing for any one office to monitor. Close monitoring occurs via the many contacts and collaborations between specific stakeholders and the researchers and personnel in the many specialized research laboratories and research centers at SD Mines. These laboratories and research centers are listed below by way of illustration.

Laboratories

1. Arbegaast Materials Processing and Joining Laboratory (AMP)
2. Composites and Polymer Engineering Laboratory (CAPE)
3. Experimental and Computational Mechanics Laboratory (ECML)
4. Engineering and Mining Experiment Station (EMES)
5. Shimadzu Environmental Research Laboratory

Research centers

1. Composite and Nanocomposite Advanced Manufacturing (CNAM)
2. Security Printing and Anti-Counterfeiting Technology Center (SPACT)
3. Surface Engineering Research Center (SERC)
4. Center for Friction Stir Processing
5. Center for Bioenergy Research and Development
6. Center for Repair, Refurbish, and Return to Service
7. Biochemical Spatio-temporal NeTwork Resource Center (BioSNTR)

1P3.3

As cited under 1P2.4, all academic programs have established methods for monitoring the relevance of curricula. All but a few specialized programs, such as nanoscience and nanoengineering, rely on academic advisory boards as a critical source of ideas for program enhancements or new program development.

The high degree of integration of the SDBOR system needs to be understood as context for institutional processes. The SDBOR plays an important role in broad environmental scanning by conducting institutional research (at a regional level) and retaining consulting services the campuses cannot afford. In 2017 for example, the SDBOR retained the Education Advisory Board (EAB) to study and report on trends in skills and occupations for South Dakota.

The SDBOR office closely manages program array to avoid duplication and to ensure new programs are closely aligned with the institution’s mission and are meeting demonstrated needs.

A new program is reviewed in two distinct processes: 1) an Intent to Plan, followed by 2) a Program Plan. As the examples provided illustrate, both stages of planning require extensive market analysis and justification based on student benefit and program viability.

Any proposed program, minor, or certificate program must pass through all the campus-level review entities (i.e., the program curriculum committee, the university curriculum committee, the Council on Graduate Education [if applicable], and the Faculty Senate). Then it is vetted at the system level by the Academic Affairs Council (AAC) and the Council of Presidents (COPS) before it can be put on the agenda for the Regents to review and decide on. Any campus may object to the proposed program on the grounds that it impinges upon, duplicates, or unnecessarily competes with existing programs or lies outside the proposing campus’ mission.

At SD Mines, the Academic Leadership Council (ALC) is an important thinktank for new program ideas. The provost puts ‘new program ideas’ on the agenda for the ALC regularly and has emphasized this topic of late as SD Mines seeks to develop new programs (within our mission) that could provide alternatives to students interested in STEM but not suited for the multiple advance math courses currently required. At present, any student who cannot master calculus and higher math must leave SD Mines.

1P3.4 and 1P3.5
All academic programs are reviewed at least once every seven years according to SDBOR guidelines. Program reviews include a self-study and review by one or more external evaluators selected by the provost and approved by the system office. Program reviews are transmitted to the SDBOR office along with a comprehensive analysis of the external reviewers’ input and plans for improvement. For ABET-accredited programs, the six-year accreditation review serves as program review.

SD Mines has taken the unusual step of creating program review standards (one for undergraduate programs and one for graduate programs) modeled closely on the ABET self-study standards. Examples of completed reviews for Master’s in Electrical Engineering and in Computational Sciences and Robotics were provided under 1P2.1. Since few of the undergraduate programs are not accredited by ABET, we do not yet have an example undergraduate review from a non-ABET program; however, the standards are provided by way of illustration.

As cited under 1P2.4, both graduate and undergraduate programs have established methods for monitoring the relevance of curricula. All but a few specialized programs, such as nanoscience and nanoengineering, have industrial or academic advisory boards.

The importance of advisory boards in ensuring the currency of programs is seen in an Action Step included in the strategic plan: Action Step 6-B-4: “Evaluate and strengthen all university and department advisory committees to engage key alumni and university partners in the mission and needs of the university.” To advance this task, the charters and composition of each advisory board was reviewed in 2016-17 by the Office of the President to ensure board membership reflects corporate, governmental, and philanthropic interests.

Employers are a critical source of feedback on the preparedness and desirability of graduates; therefore, salary and placement data are segmented by academic program every year, sent to the program heads, and published online under “student achievement,” along with retention, time to graduation, and enrollment data for every program.

The Dean of Graduate Education established in 2017 comprehensive performance indicators for all graduate programs. These metrics have not yet produced trended data but will with time.

For monitoring program and course viability from year to year, we rely on a system process for monitoring “small sections.” For 20+ years, the SDBOR has enforced a 4/7/10 policy to require that a Ph.D. course have at least 4 students, a Master’s course at least 7, and an undergraduate course at least 10. A campus may have up to 3% or 4% of their sections below these thresholds without being in violation of the policy. The thresholds give academic leadership a tool to identify and retire non-viable courses. The SDBOR also periodically identifies any course not offered in 4-5 years. Institutions must delete or justify retaining any courses deemed “obsolete.”

To monitor program viability, the SDBOR conducts a system-wide “program productivity review process” every other year. Data from the 2015 and 2017 reviews show SD Mines programs to be viable.

For department heads, two sources of data (other than placement and salary data) are most useful in monitoring program currency, effectiveness, and the degree to which the needs of student stakeholders are served.

1) The SSI results for 3 key benchmarks (i.e., academic advising, concern for the individual, and instructional effectiveness)—along with all the items contributing to the benchmarks—are segmented by academic program and sent to the department heads yearly. Multiple additional
analyses of SSI data are also sent, so the departments fully understand the very high level of importance SD Mines students place on instructional effectiveness.

2) The yearly “budget guidance data” sent by the Office of the Provost at the onset of the budgeting cycle. The data are produced according to standard data definitions and distributed to all programs, so everyone has access to everyone else’s data. This transparency allows department heads to benchmark against other programs. The homogeneity of our STEM program array makes internal comparisons relevant. This is particularly true because of SD Mines’ very narrow Carnegie classification. The amount of data provided yearly is so large, it is summarized in this Item of Evidence.

**1R3.1 and 1R3.2**

Results for this section are presented concisely in Items of Evidence for the following: **WiSE**

- This program has been studied in depth. Data analyses for fall 2014 and 2015 indicate that WiSE had significant positive impacts over students’ attitudes for these years. An apparent decline in impact in 2016 is thought to have resulted in personnel changes, and data from 2017-18 will be analyzed to better understand current program effectiveness and impact.

**Global Perspectives Inventory data**

- Data are given for seniors only with national comparisons.

**A 2017 climate survey pertaining to diversity Employer survey results**

- External benchmarks are not provided as the survey is locally developed.

Results of SDBOR Program productivity review

- These data are too voluminous to present; however, of all institutions in the SDBOR system, SD Mines is the only one that has not had to terminate a program in decades because it was deemed ‘non-productive’ in terms of the number of graduates, which is the main criterion used.

**Small section size data**

- The data are not presented in full; however, SD Mines has the lowest instances of small sections in the system, i.e., 2.26 average over 6 years versus 3.05 average for the other schools in the system. This suggests good management and carefully sequenced curricula, especially given the specialty nature of upper-level STEM courses

**1I3**

The WiSE program is proving effective in boosting retention, and women consistently retain at higher rates than men. The realization that ‘unaffiliated white males’ is the single largest group on campus not being served has led to the creation of a men’s program modeled after the mentoring program of WiSE.
GPI results unambiguously point to the need to craft ever more effective ways of increasing cultural and global awareness of our students. Mines Advantage is proving to be a powerful tool as students who complete the program frequently say they would not have attended various cultural programs without being required to do so for Mines Advantage. This means we are reaching those who most need to be reached. The next steps will entail getting all programs to use the GPI with seniors and then using solid trend data segmented by academic program to foster conversations about how the academic curricula can do more to support developing students in this area.

Employer Survey feedback is good, with most recruiters rating students as either Excellent or Good all categories. Since 2009, the following gains have been made:

- the percent of employers that rated our students as Excellent in the Overall Impression category has increased from 31% to 47% in Spring 2018.
- the percent of employers rating the Communication skills of our students as either Excellent or Good has increased from 85% to 93% in Spring 2018
- the overall level of student preparedness for the career fair has increased from 78% to 88%

Employer support for Mines Advantage is strong. The ‘open text’ comments and interviews by staff at Career Fairs have led to the creation of the ResumeMania program through which students can get their resumes critiqued by employers and the “Interview Olympics” event, which is modeled after speed dating. Other programs, such as “Mixing and Mingling Effectively” and the “Cultural Etiquette Dinner,” have been designed in response to employer feedback.

SD Mines is known in the SDBOR system for its tight management of program array and its strategic effectiveness in new program creation. Over the past 5 years, we have added a petroleum engineering minor, a global engineering minor, and are rolling out a biomedical engineering B.S. program in fall 2018. Unusual programs, such as the eSports certificate, point to the creative forward thinking of SD Mines faculty.

Sources

- ALC definition evidence American
- Indian rpt evidence
- EAB environmental scan evidence
- employee diversity Mines evidence
- Employer survey used at Career Fairs evidence Employers evidence
- GPI results seniors evidence
- Graduate program monitoring of relevance evidence
- Graduate Program performance metrics evidence
- Inclusion and Diversity at SD Mines evidence Integrated
- elements of the SDBOR system evidence Intent to Plan
- process evidence
- New program Dev process evidence
- New Program Plan process evidence
- OMA identifying stakeholder groups evidence
- OMA work in serving students evidence
- Placement and salary data evidence
- Prog productivity evidence
Criterion 3, Core Component 3.B

The institution demonstrates that the exercise of intellectual inquiry and the acquisition, application, and integration of broad learning and skills are integral to its educational programs.

1. The general education program is appropriate to the mission, educational offerings, and degree levels of the institution.
2. The institution articulates the purposes, content, and intended learning outcomes of its undergraduate general education requirements. The program of general education is grounded in a philosophy or framework developed by the institution or adopted from an established framework. It imparts broad knowledge and intellectual concepts to students and develops skills and attitudes that the institution believes every college-educated person should possess.
3. Every degree program offered by the institution engages students in collecting, analyzing, and communicating information; in mastering modes of inquiry or creative work; and in developing skills adaptable to changing environments.
4. The education offered by the institution recognizes the human and cultural diversity of the world in which students live and work.
5. The faculty and students contribute to scholarship, creative work, and the discovery of knowledge to the extent appropriate to their programs and the institution’s mission.

Responses

1.1: Common Learning Outcomes
1P1.1 and 1P1.2

The General Education program is a single curriculum shared by all schools in the SDBOR system. Six Goals are mapped to courses at each institution. Significant revisions were made to General Education in 2006 and 2017.

In 2015-2017 a system-wide review of General Education was conducted by multiple task forces comprised of faculty representatives from all campuses and coordinated by the SDBOR. The faculty members studied national initiatives and frameworks to identify best practices. The review had the
following four major impacts:

1. The six Goals were left in place

2. The outcomes under each Goal are being reviewed—and possibly revised—by systemwide Discipline Councils starting in 2017 and ending in 2020

3. Use of the system-wide assessment of General Education learning, the Collegiate Assessment of Academic Proficiency (CAAP) exam was discontinued in 2016 after nearly 20 years of use and has been replaced by a cooperative artifact-assessment-based assessment plan.

4. To emulate qualities of the Liberal Education and America’s Promise (LEAP) initiative, the system defined 11 “Cross-curricular Skills.” Each SDBOR campus is tasked with selecting 5 Skills to address and assess in every undergraduate program of study.

Given the homogeneous STEM focus of SD Mines, the Academic Leadership Council (ALC) decided to use the same following five Cross-curricular Skills across all programs:

1. Inquiry and Analysis
2. Critical and Creative Thinking
3. Information Literacy
4. Teamwork
5. Problem Solving

The Skills selected by the ALC are those deemed to promote the strong professional and communication skills needed in STEM professions. Requiring the implementation (i.e., incorporation in the curriculum and assessment) of the Skills in junior- and/or senior-level courses supports the integration of General Education in STEM majors. Programs have until 2019 to incorporate attainment of the learning described in the Skills into their curricula and design assessments. The process has just begun; however, the physics program provides a good example of how this integration is being achieved.

1P1.3

The systemwide task forces that reviewed General Education in 2015-2017 created a clear articulation of the purpose of General Education for the SDBOR system. The content and level of achievement of the outcomes are being communicated via the system assessment rubrics being created for all outcomes under each Goal.

The Discipline Councils in English and math published the writing rubric (Goal 1) and the math rubric (Goal 5) in fall 2017, so the artifacts needed to assess Goal 1 and 5 could be collected in spring 2018. Multidisciplinary groups in the sciences (Goal 6) and social sciences (Goal 3) worked in AY 2017-18 and created the Goal 3 rubric and the Goal 6 rubric. The assessment process is described in more detail under 1P1.6 and 1P1.7.

1P1.4

The mapping of courses to Goals is set in Academic Affairs Council (AAC) Guidelines. SD Mines provides online and hardcopy checklists to students and advisors to ensure that everyone knows which freshmen- and sophomore-level classes meet specific Goals and the number of credit hours allocated to each Goal. Students also rely on WebAdvisor to identify and enroll in General Education courses.

As attainment rubrics are created for all Goals and Outcomes (i.e., as the new assessment process
detailed in 1P1.7 is fully implemented), SD Mines will have criterion-referenced rubrics (similar to the Goal 1, Goal 3, and Goal 5 rubrics) to share with students to convey the levels of attainment expected for every outcome in General Education. And, as the Goals and Outcomes are assessed, a library of examples of student work at various attainment levels will be created. Faculty will be strongly encouraged to use the rubrics (as well as the examples, if desired) as didactic tools in the classroom.

The syllabus template required for all courses by SDBOR policy specifies that courses meeting General Education requirements detail which Goals and Outcomes are mapped to the course. Many contain details on how the General Education Outcomes are assessed. SD Mines maintains an online, searchable database of all course syllabi. Office of the Provost staff audit the syllabus database every semester to ensure 100% availability of current syllabi and compliance with content requirements.

1P1.5

General education Goals and Outcomes are reviewed and updated on a system-wide basis. The most recent review just concluded in fall 2017. A system-wide faculty task force spent two years studying national frameworks and initiatives in conducting the most recent review.

Because STEM programs have tightly prescriptive curricula, General Education courses are critical to the attainment of communication skills and the broad understandings fostered in humanities and social science courses. SD Mines is the only system school that offers technical communications I and II for Goal 1 and 2 credit. SD Mines is also the only system school that offers General Education classes exclusively in face-to-face mode with Ph.D.-prepared full-time faculty (with very few exceptions) in the classroom.

Feedback from employers and research on the skills and attributes needed by STEM professionals are regularly communicated to the faculty via presentations and the distribution of publications. The relevance of General Education at SD Mines is reflected in strong placement rates and average starting salaries.

To monitor and maintain the integrity and relevance of General Education courses, the SDBOR relies on the system Discipline Councils and on the System General Education Assessment Committee. The math discipline council, for example, drove work on refining math placement processes and the creation of a Math Index. The system General Education Assessment Committee reviews all proposed General Education courses and makes recommendations to the system Academic Affairs Council regarding approval.

1P1.6

The STEM-exclusive academic programming at SD Mines creates an advantage when it comes to aligning the curriculum and co-curriculum. Over a decade ago, faculty worked with Student Development leaders to design a framework that directly aligned the efforts, units, and programming in Student Development with the Criterion 3 Outcomes required under accreditation by ABET, Inc. Added to the ABET outcomes were career preparation, leadership, community involvement, and personal development. Overall, the skill areas were selected after extensive consultation with employers to select key developmental outcomes critical for STEM graduates.

This framework for aligning the curriculum and co-curriculum became the Mines Advantage program, which is a distinctive hallmark of SD Mines. Students are briefed on Mines Advantage at all orientations and at most student-development activities.

Students sign up via the Mines Advantage website and complete the program by taking on leadership
positions, attending cultural events, serving on a CAMP team, joining a debate club, attending a mindfulness workshop, etc. The full curriculum is laid out on the Mines Advantage website. Participation at many events is automatically recorded via use of a student identification swipe card and counts towards completion of the program.

The Student Activities and Leadership Center (SALC) maps all events and programming it coordinates or offers to the competencies of Mines Advantage. This mapping is conveyed to students through the Mines Advantage website and program, and advertisements for events that contribute to Mines Advantage outcomes identify the outcomes. Outcomes not readily covered in academic curricula, such as leadership, are supported via programming offered by the SALC. A strong example of this is the annual Professional Development Institute of Student Leaders.

Mines Advantage is such an important and distinctive attribute of undergraduate education at SD Mines that it is the subject of an Action Step in the strategic plan: “Action Step 1-D-3: Advance student professional preparation through the Mines Advantage program. Students cite program completion on resumes to heighten their attractiveness to employers.

All undergraduate programs support student involvement in clubs, competitions, societies, professional associations, and attendance at seminars or conferences. The same is true of graduate programs. All but a few highly specialized graduate programs, such as robotics and nanoengineering, support—or even require—students to present at conferences, publish in key journals, or engage in training.

Another co-curricular program that distinguishes SD Mines is CAMP (Center of Excellence for Advanced Manufacturing and Production). CAMP is the longest lived co-curricular program at SD Mines and provides the strongest example of how the curriculum and co-curriculum are blended and reciprocally supportive of student learning. CAMP brings together students, faculty, and industry leaders to partner on real-world engineering projects and to field 12 multi-disciplinary student teams that compete regionally and nationally.

Many of these teams work on their projects in the CAT Lab (sponsored by the Caterpillar corporation), which is like a mechanic’s dream garage with the tools and parts needed to build alternative fuel vehicles, concrete canoes, unmanned aerial vehicles, or mini Indy and Baja cars. Other teams work on projects involving robotics or hydrogen fuel cells.

CAMP advances the classroom experience to the application step by making students apply their technical skills in real-world situations that involve fundraising, planning, problem-solving and deadlines. Student teams test their mettle against engineering universities from around the world. A synergy results by which students develop their professional and technical capabilities. Many programs field national teams that let students apply their learning.

The VEX U Robotics team was formed just last year, yet they placed 12th in the world in 2018 and 11th in the world in 2017.

Civil engineering has a Steel Bridge and Concrete Canoe team; mining engineering fields a Mining and Mucking Team. These competitive teams achieve the same application-of-learning step that CAMP does.

An Honors program was created in 2016 in conjunction with the implementation of the EPICS (Engineering Projects in Community Service) program. Both programs engage multidisciplinary student teams in real-world projects. A distinction is that the honors program teams may work through corporate sponsorship, and the EPICS teams work for non-profit organizations or in collaboration with tribal colleges and the Pine Ridge Indian Reservation.
Music (band, orchestra, choir) could also be considered an important co-curricular activity at SD Mines since students gifted in mathematics or physics are often gifted in music and rely on these involvements as a part of overall wellness and intellectual development.

Lastly, just this year, eSports was introduced to campus as a varsity sport and as a certificate program in the humanities and social sciences department to support skill development in teaming and communication.

1P1.7 and 1P1.8

From 1998 to 2016, all BOR schools used incoming ACT scores and the Collegiate Assessment of Academic Proficiency (CAAP) exam as bookend assessments of learning gains in general education. A passing ‘cut’ score was required on all section of the CAAP exam (taken after the sophomore year by all students) to remain enrolled. So, for nearly 20 years, the CAAP exam served as the system’s assessment of learning outcome attainment in general education. The CAAP is no longer used.

The CAAP was a sub-optimum tool for helping SD Mines faculty members continuously improve instruction because the test content was poorly aligned with course content. The math portion of the CAAP, for example, had 3 trigonometry questions, and the rest addressed math considered remedial at SD Mines.

To compensate for the misalignment, faculty developed additional assessments to assess learning pertaining to written and oral communication, information literacy, humanities, and social sciences. The pre-2015 record of supplemental assessments done for Goal 1, Goal 2, Goal 3, and Goal 4 are linked here. Conducting supplemental assessments for Goal 5 (math) and Goal 6 (science) was not deemed necessary because SD Mines students outperformed students nationally and within the SDBOR system in these areas.

After the CAAP was discontinued as the SDBOR’s assessment of General Education in 2016, faculty from all SDBOR universities collaborated to design an “artifact-based” assessment framework for the six Goals and Outcomes of General Education.

A system-wide General Education Assessment Committee was formed in 2017 to oversee the assessment of General Education.

The artifacts for Goal 1 (writing) and Goal 5 (math) were gathered in spring 2018 and a representative sample submitted to the SDBOR for a June 2018 Assessment Summit at Black Hills State University. To help clarify this process, please see an example of the instructions given to Goal 1 instructors.

In fall 2018 the writing faculty and the math faculty will use all the artifacts collected from SD Mines students to conduct assessments of Goal 1 and Goal 5 outcomes for the campus. The results of these assessments (along with planned improvements) will be reported to the SDBOR and shared at the system Academic Affairs Council (i.e., the system council of all provosts). The complete Guidelines set for the system for implementation of this process are linked here.

1R1 and 1R2

CAAP data collected since 1998 has confirmed up until now the attainment of general education outcomes by SD Mines students. Compared to national norms, South Dakota students have surpassed national norms in all four CAAP areas (writing, mathematics, reading and science reasoning), and SD Mines students consistently score highest in the state. In 2014, for example, 25.2% of SD Mines students met or exceeded the national 99th percentile scores on the exam. This is compared to an average of 7% of students from the other Regental schools surpassing the 99th percentile.
Placement rates and starting salaries are not an assessment of General Education per se, but they do reflect good student preparation, and General Education is an important component.

The Mines Advantage program assessment results are as follows:

- Enrollment and completion of the program are shown in FIG. 1.
- The results of employer surveys regarding the value and importance of the Mines Advantage learning outcomes are shown in FIG. 2.
- Results of the Global Perspectives Inventory are shown in FIGs 2 to 11.

The Global Perspectives Inventory (GPI) is a commercial, nationally used assessment given to freshmen and seniors to measure attainment of the Mines Advantage outcome for “Cultural & Global Inclusion.”

The CAAP exam results are benchmarked against the scores of all students nationwide in 4-year colleges and universities.

Placement rates are consistently high, and the average starting salary in 2017 was over $65,000. According to PayScale (a company that ranks U.S. universities based on "return on investment," or the purported difference between student expenditures for a university degree and the money they earn from it), SD Mines was ranked #1 in South Dakota tied for #7 nationwide in annual return rate, and #24 nationally. (See www.payscale.com.) The 20-year ROI for a SD Mines undergraduate degree is $718,000.

Results of the EQI 2.0 emotional intelligence assessment used with CAMP team members are presented here.

1R3 and 1I1

The CAAP exam suggests that students meet or exceed attainment of General Education outcomes; however, as noted, the CAAP is deemed a poor indicator of certain outcomes, such as those related to arts and humanities and the social sciences. The new artifact-based system-wide assessment of General Education has not yet yielded results, but we very much hope that this new process will provide both data and information that can drive curricular improvements.

Mines Advantage participation and the value of this co-curricular professional development program points to close and positive alignment between General Education and the co-curriculum. The results of the Global Perspectives Inventory provide stark and clear reminders of the need to work relentlessly on the diversity and inclusion outcomes. The student population of SD Mines, despite ongoing efforts, is still predominantly while and male. 47% of all students come from South Dakota; 13% are minorities; and 6% are international. Over the last decade, the ratio of men to women has been approximately 75% / 25%.

Better and additional assessment measures will be created for the Mines Advantage program now that it is firmly institutionalized and regarded as a value-added component of an SD Mines education by employers.

Both the Honors and the EPICS programs are relatively new, but they are thriving and expanding. The funding for start-up for EPICS came from an NSF grant, so an important planned improvement is to develop sustainable funding sources for this program. The Honors program is based on multi-disciplinary teams working with corporate or industry partners, so it is believed that sustainable funding for that program will be achieved in the next year.
1.2: Program Learning Outcomes

1P2.1

The mission and role of SD Mines within the SDBOR system is set in state codified law and in SDBOR policy. The “role of the South Dakota School of Mines and Technology is that of a technological university specializing in undergraduate and graduate education emphasizing science and engineering. Degrees are authorized at the baccalaureate, masters, and doctoral levels.” The mission statement on the website is consistent with the legal mission but worded to be a clearer and more direct statement of institutional purpose.

The narrow STEM focus of all programs and the fact that all programs require higher math makes the matter of aligning academic programs and their outcomes to the mission relatively natural. The narrow program array has its downsides, of course, in that students deciding a science or engineering career is not for them must transfer to another school. On the other hand, students do not ‘accidentally’ discover they are at a STEM-only school. Our mission and the alignment of programs to that mission are clearly conveyed and universally understood.

Of our 16 undergraduate programs, 10 are accredited under ABET, Inc., and two non-ABET programs (i.e., math and geology) reside in an academic department whose other program is ABET accredited. The pairing of an ABET program and a non-ABET program has the effect of both programs functioning under the ABET framework because it is so clear, specific, and logical. ABET, Inc. requires programs to detail and justify the alignment of program outcomes with the mission in every 6-year review cycle under Criterion 2.

Alignment of outcomes to the mission for any program not accredited under ABET, Inc. is further ensured by the Program Review Standards all programs use to create the self-study required of program review. The standards for both undergraduate and graduate programs are modeled after the self-study template for ABET-accredited programs. Provided as examples are recently completed program reviews for the M.S. in electrical engineering and the M.S. in computational sciences and robotics.

1P2.2

The faculty in each academic program determine program outcomes. Programs accredited under ABET, Inc. must have outcomes that are identical to or the equivalent of the Criterion 3 (a) through (k) Outcomes. The ABET outcomes naturally influence the outcomes of all programs, in part because they are well formulated to comprise key skills and attributes of students prepared for STEM careers. Most programs include teaming as a program outcome, for example.

The relative homogeneity of program learning outcomes make it possible for SD Mines to select 5 “Cross-curricular Skills” for adoption in ALL undergraduate programs. The 5 Cross-Curricular skills selected by SD Mines are as follows:

1. Inquiry and Analysis
2. Critical and Creative Thinking
3. Information Literacy
4. Teamwork
5. Problem Solving

As described in 1P1.1, all SDBOR schools must select 5 (out of a total of 11) of these skills to incorporate into each academic program. The other institutions left the choice up to each program because no one set of 5 skills was appropriate for all majors; however, using the same 5 for all programs fits the STEM focus of SD Mines and will strengthen outcome assessment in all programs.
For example, many of the ABET-accredited programs use the Comprehensive Assessment of Team Member Effectiveness (CATME) (http://info.catme.org/). Now that all programs will be required to address and assess teamwork at the junior and senior levels by 2019, many more programs are adopting the CATME and learning from the programs that already assess teaming. The Mines Advantage co-curricular professional development program also has teamwork as one of its learning outcomes.

1P2.3

All programs have articulated program outcomes and plans for assessing the outcomes. Program learning outcomes are displayed on all program pages in the SD Mines webpresence. A keyword search using “assessment” takes one to a page from which information about program outcomes and assessment for all academic programs can be easily found. One menu lists all undergraduate programs, and the other all graduate programs. Under each program are links to the assessment plan and to program learning outcomes.

All syllabi are required to contain learning outcomes. Each semester, Office of the Provost staff use the syllabus search tool to check compliance for all syllabi. Generally, the syllabi are detailed and do a good job of conveying the content and level of achievement of outcomes. STEM students tend to prefer having expectations clearly laid out in detail.

1P2.4

All undergraduate programs and all but two specialized graduate programs employ consultations with advisory boards and employ additional means—other than program assessment plans and processes—for ensuring that the curricula remain relevant and aligned with industry and employer needs. The techniques used by undergraduate and graduate programs are presented in tables.

Despite the fact that internship and coop experiences are not required, 77% of all students participate in one or both prior to graduation. SD Mines students are successful in obtaining paid placements in very competitive areas and industries. The range and quality of internship, coop, and paid undergraduate research posts are a strong indicator of the health of the institution’s collaboration with external stakeholders and the alignment of student preparation with workplace needs.

The Mines Advantage co-curricular professional development program was created with extensive employer input, and employers are asked about the relevance of the program and suggested improvements during the twice-yearly Career Fair.

Three signature co-curricular programs, EPICS, CAMP, and the Honors program are based on multi-disciplinary teams that solve real-world problems for corporations, non-profits. CAMP and other teams compete nationally and internationally. Competitions are fiercely competitive and enable students to test their mettle against other engineering and programming teams and against the constraints of reality.

1P2.5

All undergraduate programs support student involvement in clubs, competitions, societies, professional associations, and attendance at seminars or conferences. The same is true of graduate programs.

The Mines Advantage co-curricular professional development program (discussed above) is a signature program at SD Mines that closely and purposefully aligns the co-curriculum with campus curricula. Also, as described above, CAMP, EPICS, and the Honors program are all based on multi-
disciplinary teams and involve either projects to solve real-world problems for non-profits and corporations or regional and national competitions. Many programs field national teams that let students apply their learning. Civil engineering has a Steel Bridge and Concrete Canoe team. Mining engineering fields a Mining and Mucking Team. A multidisciplinary Moonrockers team competes in the Annual NASA Robotic Mining Competition at the NASA Kennedy Space Center.

One activity not yet described concerns study abroad. SD Mines graduates join international industries and companies (e.g., Rio Tinto mining, Caterpillar, Dow Chemical, etc.) Of the top 20 employers of our graduates, 18 of them (i.e., 90%) have locations overseas. In a fall 2013 survey of employers recruiting on campus, 68% said that competence in cultural and global diversity was important for career success in their organizations. The setting of the University in a small town in the Great Plains means that many students have limited exposure to other cultures. Feedback from employers spurred the goal of creating pathways within all undergraduate curricula to accommodate study abroad. Doing this is so important, it is included in the strategic plan as an Action Step. "Pathways" for study abroad and international experiences are detailed by academic program on the website.

Study abroad experiences are coordinated by the Director of the Ivanhoe International Center (IIC). The IIC assists students with program selection, evaluation for academic credit (coordinated with departments), logistics, and application preparation.

Study abroad opportunities are promoted via the student organization fair, informational sessions held each semester, presentations to individual groups, and information disseminated to faculty. There are faculty-led programs, such as the Advanced Design Project, and student-coordinated programs, such as Engineers and Scientists Abroad, in addition to other traditional program options. The geology faculty teach in Field Camps in Turkey, New Zealand, Morocco, Spain, Iceland, Ecuador, Nepal, and the Bahamas. An annual endowment-funded scholarship (the Brass Life award) is given to one student to fund a semester abroad, and another scholarship opportunity is awarded for international humanitarian service projects. Other relevant scholarship opportunities are advertised on the website and digital signage on campus.

Supporting and contributing to IIC efforts are a minor and a certificate program in “Global Engineering.” The minor and certificate programs require an international engineering design activity, which work well with the Advanced Design Project and Engineers and Scientists Abroad programs.

1P2.6 and 1P2.7

The culture at SD Mines regarding the assessment of student learning was shaped in the 1990s and 2000s by the requirements of what was then called ABET 2000. The first comprehensive accreditation review under the ABET 2000 standards was in 1998, and it involved all but 4 undergraduate programs.

As the institution learned how to build assessment processes, the programs became laboratories for experimentation and development. The tradition of each program being free to craft the processes that work best for the faculty responsible fostered buy-in and ‘ownership’ of processes. This culture of program independence and ownership remains in place today. All programs accredited by ABET, Inc. have successfully fulfilled the engineering and computing commissions rigorous standards but have done so each in their own way.

Efforts to force uniformity in assessment based on the ABET outcomes proved counterproductive. However, a faculty task force worked between 2011 and 2014 to study and recommend to campus the
best assessment instruments and measures for key outcomes. The results of this work were written up in a “Cohesive Campus Assessment Plan” which was never finalized and did not result in the imposition of common measures.

The faculty task force's work did lead to wide adoption of some of the tools recommended, such as the CATME team assessment (See http://info.catme.org/) and the Global Perspectives Inventory, and launched a multi-year study of emotional intelligence and teaming in the CAMP program using the EQ-i 2.0 instrument (See https://tap.mhs.com/EQi20TheScience.aspx.)

All bachelors, Master’s, and Ph.D. programs have assessment plans. On the Office of the Provost webpresence, two linked menus—one for all undergraduate programs and one for all graduate programs—make public all assessment plans (as well as program outcomes). The plans can be located via the keyword search “assessment.”

1R2.1, 1R2.2, and 1R2.3

All academic programs at all levels have active and productive assessment plans and processes; however, as explained above, the culture of SD Mines is to foster program autonomy. With autonomy comes responsibility, ownership, and experimentation.

Presenting assessment results for 41 programs is a challenge. Linked here are files that contain the assessment plans for bachelor, Master’s and Ph.D. programs. Some programs post results publicly. The Criterion 3 and 4 sections of the ABET self-studies are included in these files, and results are detailed in those sections for all program outcomes. All undergraduate programs have a 2-semester Senior Design capstone sequence or a capstone project that is the venue for summative assessment of program outcomes.

One measures that is used across 10 undergraduate programs is the Fundamentals of Engineering (FE) exam. The FE is a fairly expensive, grueling all-day exam that students must voluntarily take. Passing the exam is a prerequisite for becoming licensed as a “professional engineer,” and this designation is important for a few disciplines, such as civil engineering. For others, such as industrial engineering or metallurgical engineering, it is less important.

The fact that the exam is optional, difficult, and expensive makes using the scores as a summative measure of learning for all graduates challenging. Moreover, only the morning portion of the exam covers topics common to all engineering disciplines. The afternoon topics vary by program. Nonetheless, the FE scores are tracked for all engineering programs. Linked here are the results (benchmarked against scores from other ABET-accredited programs) for the civil, mechanical, electrical, and computer engineering programs, along with interpretations.

The Dean of Graduate Education established in 2017 comprehensive performance indicators for the University and for all graduate programs. These metrics have not yet produced trended data but will with time.

Data on the participation in and impact of the Mines Advantage program were presented under 1R1. Results of Study Abroad efforts are presented here.

Results of the EQI 2.0 emotional intelligence assessment used with CAMP team members are presented here.

Since 2015, Student Development has benefited from having Second Year Student Assessment
(SYSA) data to track student satisfaction with opportunities to get involved in activities and events associated with a student’s major and satisfaction with the availability of service learning, internships, and/or other work experiences associated with students’ career interests.

1R2.4

The assessment of student learning is active and documented in all programs at all levels. The ABET-accredited programs have maintained sanction-free accreditation for over 20 years. Placement rates are stable at around 98%, and SD Mines cannot produce graduates fast enough to meet employer demands in key areas, such as mining and petroleum engineering. FE exam scores—although problematic a source of performance data for some programs—tell us that SD Mines students perform on par with students nationally.

The alignment between the curriculum and co-curriculum is very strong at SD Mines thanks to the Mines Advantage program, EPICS, Honors, study abroad, and efforts by all academic programs to ensure student involvement in professional societies, competitions, and academic presentations.

The institution continues to question whether more is gained by fostering program autonomy in assessment than could be gained via the use of common instruments. As the undergraduate programs implement (by 2019) the five “Cross-curricular Skills” selected for campus as part of General Education, use of common measures may develop naturally. For example, teaming is one of these skills, so use of the CATME team assessment is expected to expand on its own without an administrative mandate.

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Improvements SD Mines hopes to make in program assessment include fostering use of common assessment tools and measures but doing so without coercion or mandate. Gains are being made, as seen in the use of the Global Perspectives Inventory (GPI) in the senior year across most programs.

The Student Satisfaction Inventory (SSI) and the Second Year Student Assessment (SYSA) are used across all programs, and these data are segmented by academic program and shared with all of campus. This year, a common assessment of academic advising was implemented. While the SSI, SYSA, and advising assessment are not direct measures of learning, they are shaping the culture more toward common measures.

Opportunities for improvement in the next 1-3 years include adoption of shared assessments for the Cross-Curricular Skills, full deployment of the GPI at the senior level in all programs, and consideration of using shared measures or surveys, e.g., of employers and alumni.

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Programming to
SUPPORT ACCESS AND SUCCESS OF AMERICAN INDIAN STUDENTS
Summary Report 2018-2019
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The South Dakota School of Mines and Technology (SD Mines) has several activities and programs geared toward supporting the access and success of the American Indian student and surrounding community. Whether through pre-college orientation, summer bridge programs, research, or undergraduate and graduate education, there are many opportunities to support South Dakota’s largest minority group. All programs described in this report are facilitated by someone on the SD Mines campus.

// RECRUITMENT

American Indian Science and Engineering Society (AISES) Pre-College Outreach

SD Mines’ chapter of the National American Indian Science & Engineering Society (AISES) provides science and engineering experiences for places with high concentrations of American Indian children such as the Black Hills Children’s Home. They also strive to strengthen AISES Region V, by assisting other institutions to develop associate AISES chapters. In the past, AISES members have worked with SD Mines faculty with a science-based program at Central High School as well as offered tutoring. The chapter is also invited to speak to K-12 reservation-based schools when they visit campus. The purpose of the pre-college outreach is to build a foundation among American Indian youth to pursue higher education, particularly in the STEM fields.

Contacts:
Jesse Herrera, Director Multicultural Affairs

Admissions Outreach

SD Mines’ Admissions Office makes concerted efforts to connect with high school students, school counselors and math and science teachers at tribal high schools and high schools with high concentrations of Native American students in South Dakota and surrounding states. The purpose of these connections is to educate Native American parents and pre-college students about the value and process of entering higher education, as well as the benefits of a science or engineering education at SD Mines. SD Mines participates in College Application Week. This program provides fee waivers for students at all targeted high schools across the state, many of which are tribal schools.

Connection is accomplished in a variety of modalities including technology, media and literature, but primarily through in-person contact such as: high school visits; college fairs (Mobridge, Eagle Butte, Winner, Pine Ridge, etc.); representation at Lakota Nations Invitational basketball tournament in Rapid City (specifically at the LNI college fair); collaboration with the Jump Start Program Access Advisors and the SD Mines Jump Start Retention Advisor; presentations to middle and high schools visiting the campus; encouragement and recruitment of current students to both reach out to their home high schools, family, and friends regarding education at SD Mines and represent the university through the Student Ambassador program.

Contact:
Molly Moore, Associate Provost for Academic Administration and Director of Admissions
Tribal School Outreach and Engagement Plan

The President’s Office is making a specialized effort to increase engagement with regional tribal schools through personal visits by the special projects coordinator. This plan targets high schools on or near reservations in central and western South Dakota with the hope to further expand outreach in the coming years. The coordinator has been making presentations to high school students to discuss college planning and the opportunities available at SD Mines. During these visits, the coordinator also provides science fair preparation coaching to teachers and discusses potential avenues for future collaboration.

Contact:
Jade Herman, Special Projects Coordinator, Office of the President

Green Chemistry Outreach Program

The Green Chemistry outreach program is designed to promote excitement and an appreciation for both science and higher education to middle school and high school students. The program delivers educational resources aligned with the SD Science Standards for science teachers on the Pine Ridge Reservation and Rapid City area. The program aim is to stimulate students’ interest in chemistry, to demonstrate the relevance of chemistry in everyday life, and to encourage students to consider pursuing careers in STEM. A total of 242 PreK-12 students participated in the workshops, of those 167 were American Indian, 72 Caucasian, and 3 African American.

The ACS Student Chapter obtained funding through the ACS Community Interaction Grant (2018-2019) to organize Green Chemistry Workshops at Pine Ridge, Loneman, Batesland, Red Shirt, Red Cloud School, and Rockyford Schools. In addition, a matching fund from the Department of Chemistry and Applied Biological Sciences (CABS) was obtained. The goals of the project are to (1) promote educational equity and engagement in science and engineering and learning opportunities in STEM fields for all students, (2) enhance the involvement of SDSM&T ACS student chapter in green chemistry hands-on activities targeting underserved students from the Pine Ridge Reservation.

The 2018 Green Chemistry Summer Camp was held at the Department of Chemistry & Applied Biological Science (CABS) July 8-13, 2018. Of 18 students, the greatest majority of students were American Indian (61%) and Caucasian (39%). Through engaging green chemistry hands-on activities, the camp strives to serve students facing difficulty from economically depressed areas such as Pine Ridge Reservation where the population lives under the poverty line. Two American Indian students from Pine Ridge School, one student from Batesland School, five students from Red Cloud School and three students from Timber Lake High School participated in the 2018 Green Chemistry Summer Camp. The survey results demonstrated that students are reporting increased interest in science, greater interest in pursuing science careers, greater interest in pursuing a STEM degree and increased student enthusiasm for attending SD Mines.

Contact:
Dr. Tsvetanka Filipova, Senior Lecturer and Faculty Advisor of the ACS Student Chapter, Chemistry and Applied Biological Sciences
Multicultural Affairs Pre-Orientation

This program invites self-identified, incoming students of color which includes non-traditional and transfer American Indian students. At the start of the fall semester, students come to campus the week before classes begin to start the acclimation process to college life. The Office of Residential Life allows students to move in prior to official move-in day. During this time students attend sessions to get oriented to their class schedule, meet their advisors, are paired with mentors, build relationships with each other, and learn how to be successful in college. American Indian students who participate in this program will have some of their textbooks covered through the OMA Book Loan Library.

Contacts:
Jesse Herrera, Director Multicultural Affairs

American Indian Peer Mentor Program

To ensure that no American Indian student feels isolated or unsupported, peer mentorship is offered to all students who participate in the OMA Pre-Orientation as well as those who feel they could benefit from such a relationship. Mentors provide guidance, connection and support throughout the first semester. Although the commitment for students is only for the first semester, many continue their relationship well into the future. The goal of the program is to positively impact retention rates of American Indian students. Related objectives are for minority students to have a successful and satisfactory first year, whether they are first-time freshmen, transfer, or non-traditional students. The program is also geared toward reinforcing a Native support system for students who may feel out of place. Mentors are volunteers, but OMA does its best to compensate students when funds are available.

Contacts:
Jesse Herrera, Director Multicultural Affairs

South Dakota Jump Start Program

The South Dakota Jump Start Program is a federally funded First in the World program designed to help students succeed in college by providing them a financial and academic “jump start”. This $3.6 million federal grant is shared among all six public universities in South Dakota and includes Oglala Lakota College. Eligible individuals are Native American and low-income students who have graduated from a South Dakota high school and want to attend college for the first time.

Participating students enter a summer campus-based experience prior to their freshman year of college to earn free college credits and have an opportunity to get acclimated to the campus. During the academic year, students work with a South Dakota Jump Start advisor on campus to connect with resources, create a success plan, and participate in Jump Start events and activities. Once a student enters the Jump Start Program they will be tracked through the end of their third year in school. The goal behind this program is to give students a Jump Start on college success by providing personnel and resources to give students momentum toward graduation.

RECRUITMENT CLOSED: Program Wrap-Up September 30, 2019

Contacts:
Jesse Herrera, Director Multicultural Affairs; Kaylynn Two Bulls, Jump Start Advisor Multicultural Affairs
National Science Foundation (NSF) OSSPEEC II Grant

National Science Foundation (NSF) OSSPEEC II Grant is a Pre-Engineering Education Collaborative with Oglala Lakota College, South Dakota State University, and SD Mines. The project aims to increase recruitment, retention, persistence, and completion rates in pre-engineering and engineering for Native American students. OSSPEEC II provides culturally centered and integrated project based experiential learning through pre-engineering classroom activities and co-curricular activities consisting of research on reservation needs in the areas of water quality and quantity, geology, and sustainability. The project also investigates and elucidates the impact of the OSSPEEC model which emphasizes the importance of experiential learning and incorporation of the Lakota world view as the basis for making essentially correct preconceptions in engineering. The program is designed for Native American students to complete their first two years of engineering education at Oglala Lakota College and then to complete their engineering education at South Dakota State University or SD Mines. An additional goal of the OSSPEEC II project is to improve the quality of engineering education at Oglala Lakota College through professional development of faculty and staff.

Contacts:
Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering;
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering

Engineering Projects in Community Service (EPICS)

Engineering Projects in Community Service (EPICS) program launched in the fall of 2016. Of the 23 EPICS universities worldwide, Mines is the first to partner with a tribal college, Oglala Lakota College (OLC), and strives to have at least 50 percent of the community design projects addressing critical needs on the Native American communities. The EPICS program offers technical training and professional development in collaboration, communication, project management, diversity awareness, and understanding social and cultural implications of engineering designs. The EPICS program features project teams that are multi-disciplinary, vertically-integrated, and student-led. Courses offered are: GE/IS 283/483 Community Design I and GE/IS 483/484 Community Design II; currently, 6 OLC students are participating in these design courses. Projects addressing the needs of Pine Ridge include:
• Designing a greenhouse and education center with the He Sapa OLC campus in Rapid City
• Emergency management and community facilities planning for the Pine Ridge Reservation in collaboration with Louis Berger, Inc.
• Infrastructure and resources mapping for the development of a comprehensive plan with the Cheyenne River Sioux Tribe
• The design of seed starter kits for home gardening in collaboration with Kyle Serenity Gardens and SDSU Extension’s iGrow and Oglala Lakota College

Contacts:
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering

Memorandum of Agreement: Oglala Sioux Tribe, Oglala Sioux Lakota Housing, Louis Berger, Inc.; South Dakota School of Mines & Technology, and U.S. Department of Agriculture

The MOA establishes a formal partnership between the institutions for the development of projects and service-learning opportunities for students that address the needs of the OST and OSLH.

Contacts:
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering; Dr. Scott Kenner, Professor Civil and Environmental Engineering; Dr. Demitris Kouris, Provost
Memorandum of Agreement: Cheyenne River Sioux Tribe, Cheyenne River Economic Development, Louis Berger, Inc.; South Dakota School of Mines & Technology, and U.S. Department of Agriculture

The MOA establishes a formal partnership between the institutions for the development of projects and service-learning opportunities for students that address the needs of the OST and OSLH.

Contacts:
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering

Groundwater and surface water interactions modeling along the White River near Oglala, South Dakota

Streamflow losses are observed along the White Clay fault accommodation zone, as well as naturally occurring sources of radionuclides. We propose that White River baseflow through the White Clay fault accommodation zone could be a source of elevated radionuclide concentration observed in the Arikaree aquifer. This work presents a collaboration between OLC and SDSMT for developing a coupled surface water-groundwater interactions model at the streamflow loss zone along the White River, near Oglala, South Dakota. In Year 1, faults are identified through remote sensing images and field study, and a 2D groundwater-surface water model was built. A graduate student (Ryan Puzel) from SDSMT and a female undergraduate student (Elisha Yellow Thunder) participated in the project. In Year 2, we will focus on alluvium aquifer characterization in 3D and build a fully 3D model to better understand the interactions of surface water and groundwater.

Contact:
Dr. Liangping Li, Assistant Professor, Geology and Geological Engineering

Emergency Fund

The Emergency Fund is intended for students with a dire financial need. The purpose is to assist students with unexpected expenses which may put them at risk for dropping out of school. Funds may be used to pay for vehicle repairs, utility bills, textbooks, counseling, and other support. This fund has also helped many students who have encountered acute financial need due to illness or injury, or loss of employment. Funds are accumulated from private donations. The Emergency Fund is open to all students including American Indian students.

Contact:
Dr. Pat Mahon, Vice President for Student Development and Dean of Students Student Development

American Indian Science & Engineering Society (AISES)

SD Mines has an award-winning AISES chapter that promotes excellence, leadership, and opportunities in education and professional development of students. AISES participates in national and regional conferences, scholarships, job placement assistance, internships and co-op opportunities, networking and social support, community service and campus involvement.

Contacts:
Jesse Herrera, Director Multicultural Affairs
Office of Multicultural Affairs (OMA)

The Office of Multicultural Affairs (OMA) provides direct student support services for all underrepresented students, especially American Indian students. Support services include, but are not limited to, scholarship alerts, internship/co-op information, as well as providing opportunities for leadership and professional development. The OMA also provides leadership and helps to facilitate the coordination of programs to underrepresented groups, especially those related to American Indian students. The office reaches out to all underrepresented populations; holds free student lunches for networking and social support each semester; and coordinates the Honoring Ceremony for American Indian graduates. The OMA also collaborates with several departments across campus to promote diversity and inclusion initiatives for students, staff and faculty.

Contacts:
Jesse Herrera, Director Multicultural Affairs

American Indian Honoring Ceremony

The OMA coordinates and sponsors the American Indian Honoring Ceremony established in December 2008. This is a special ceremony held in the spring the day before campus commencement. It celebrates and honors SD Mines Native graduates by providing a traditional meal for graduates, family, and invited community. Speakers are drawn from faculty, staff, alumni, and tribal communities. The Honoring Ceremony includes an invocation, prayers, songs, a traditional meal and presents to the graduates from their families.

Contact:
Jesse Herrera, Director Multicultural Affairs
Research Experiences for Undergraduates (REU)

SD Mines is host to two NSF REU programs, the NSF REU “Back to the Future” Site and the NSF REU “Security Printing and Anti-Counterfeiting Technologies (SPACT)” Site. These programs provide research opportunities for underrepresented students (particularly Native American students). The REU sites engage students in a funded 10-week summer undergraduate research experience. The sites are open to students from all backgrounds that are interested in science and engineering.

The theme of the “Back to the Future” site is Metallurgical/Materials engineering research, with many of the projects having historical, cultural, or artistic significance. Supplementary activities include many hands-on workshops involving art, history, and metallurgy some of which are led by local Lakota artists. The program website is located at: http://met.sdsmt.edu/reu/.

The REU SPACT site focuses on research to combat counterfeiting. Several of the past projects engaged students in the authentication of Native American artifacts. Recently, the SPACT research team and students have teamed with area museums such as the Heritage Center at Red Cloud Indian School to address issues with counterfeiting of Native American art. The program website is located at: http://spact-center.org/reu/.

As part of the site activities, undergraduate students are also involved in outreach activities which support ongoing programs that support Native American high school students such as the Army Educational Outreach REAP and UNITE program. Recent highlights include student presentations at the national American Indian Science and Engineering (AISES) conference and student mentoring of local Native American high school students. The sites have had an average participation of nearly 20% Native American students.

Contacts:
Dr. Michael West, Department Head and Associate Professor Department of Materials and Metallurgical Engineering; Dr. Grant Crawford, Associate Professor Department of Materials and Metallurgical Engineering

NSF Tiospaye Scholar Program

NSF Tiospaye Scholar Program has received three NSF S-STEM awards in excess of $1.8M of which 85% goes for scholarships for American Indian students in engineering, science, and mathematics. Applicants must be academically talented and financially needy. The program has also received over $200K in private funding. The program provides support in five areas: financial, academic, professional, cultural, and social. The students are provided weekly mentoring sessions, monthly mentoring with the director, weekly tutoring in key gateway classes including trigonometry, calculus, differential equations, chemistry, physics, computer programming, statics, and dynamics. Bi-weekly professional lunch meetings feature programming in the five areas of support. During the Spring 2019 semester, the program is supporting 12 scholars. Since the first scholarships were awarded in 2009, the program has graduated 40 scholars (almost all first-generation college students), including 11 women, in the following STEM majors: Chemistry, Civil Engineering, Electrical Engineering, Geological Engineering, Geology, Industrial Engineering & Engineering Management, Mechanical Engineering, Mining Engineering, and Physics. Currently, engineering students may receive up to $8K per year in scholarships. Two options are being pursued (NSF and Private) to continue to fund the program, as current funding is scheduled to end in August 2019. The Tiospaye Program moved into larger, newly-remodeled quarters in the summer of 2016.

Contact:
Dr. Carter Kerk, Professor of Industrial Engineering, Director NSF Tiospaye Scholar Program
SD Mines is a member of the NSF All Nations Louis Stokes Alliance for Minority Participation headquartered at Salish Kootenai College. The program provides merit-based scholarships for up to $1050 per semester, as well as travel funds for students to attend professional conferences. Since 2009, 50 SD Mines students have received over $78K in stipends.

Scholarships

In addition to the above programs, SD Mines has sought out and awarded through our Foundation over $30,000 in scholarships. These figures do not include the Tiospaye Scholarship, departmental scholarships, or other outside scholarships.

**AY 18-19 Available**

<table>
<thead>
<tr>
<th>Scholarship</th>
<th>Amount</th>
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<tr>
<td>Lowell A. Jobe Scholarship</td>
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</tr>
<tr>
<td>Berger Charitable Foundation Scholarship</td>
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<tr>
<td>Crazy Horse - Lt Commander Herrington Scholarship</td>
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</tr>
<tr>
<td>Crazy Horse - Charles Morss Scholarship</td>
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<tr>
<td>Crazy Horse - Paul Muehl Scholarship</td>
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<tr>
<td>Crazy Horse - Walt Pailing Scholarship</td>
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<tr>
<td>Crazy Horse - Society of Explosive Engineers Scholarship</td>
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<tr>
<td>Barry Halfred Memorial Scholarship</td>
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<td>Native American Scholarship</td>
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<tr>
<td>AISES/Dr. Jack Weyland Scholarship</td>
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<tr>
<td>Wayne Dalke Native American Scholarship</td>
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<tr>
<td>Pete Lien &amp; Sons Scholarship</td>
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<td>Walter Hansen &amp; Marilyn Jackson Native American Scholarship</td>
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<td>Allan Hins Native American Scholarship</td>
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<td>Otto Jenny Scholarship</td>
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<td>Jack (John) &amp; Winnie Shedd Scholarship</td>
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<td>Paul Dirksen Smith Endowed Memorial Scholarship</td>
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<td><strong>Total</strong></td>
<td><strong>$33,899.00</strong></td>
</tr>
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**ACS (American Chemical Society) Scholars Program**

The ACS awards renewable scholarships to underrepresented minority students majoring in undergraduate chemistry-related disciplines and are also intending to pursue careers in chemistry-related fields. Selected recipients are awarded up to $5,000 per academic year. Underrepresented minority high school students, college freshman, sophomores, juniors, and seniors pursuing a college degree in the chemical sciences or chemical technology are eligible to apply. Scholarships are awarded based on academic record, career objective, leadership ability, participation in school activities and/or academic research, and community service. Completed application and required documents must be submitted by March 1st annually.

**Contact:**
Dr. Tsvetanka Filipova, Senior Lecturer and Faculty Advisor of the ACS Student Chapter, Chemistry and Applied Biological Sciences
NASA South Dakota Space Grant Consortium (SDSGC)

SD Mines is the lead institution of the SDSGC and seeks to expand opportunities for Native Americans in particular through education, research, and public services in the fields of aerospace, earth science, and supporting STEM disciplines. The goal of the SDSGC Fellowship/Scholarship program is “To administer a Fellowship/Scholarship program that offers educational and research opportunities to students from diverse backgrounds who are pursuing degrees in fields of STEM that align with NASA’s mission and those of SDSGC members and affiliates.” SDSGC’s Diversity goal is “To model diversity in all Consortium programs and activities, with an emphasis on Native Americans, which make up the state’s largest minority group.” SDSGC provided $2,259,900 in scholarships and fellowships to 739 students at nine South Dakota public, private, and tribal colleges/universities from FY2005-2018 and annually meets its objective of providing at least 15% of its awards to minority students; most of whom are Native American. Several Native American students at SD Mines have conducted 10-week summer and 16-week semester research internships at NASA Centers. The first Native American to graduate from SD Mines with a Ph.D. was largely supported by NASA funding.

Contact:
Thomas Durkin, Deputy Director of South Dakota Space Grant Consortium

South Dakota NASA EPSCoR Program

Under a Tribal College Collaboration Grant, SD NASA EPSCoR is funding a project at SDSMT titled “Groundwater and Surface Water Interactions Modeling along the White River near Oglala, South Dakota.” The principal investigator is Dr. Liangping Li in the Department of Geology and Geological Engineering (GGE). Dr. Li will collaborate with Dr. Foster Sawyer, also in GGE, and with Charles Jason Tinant of Oglala Lakota College (OLC). The one-year grant provides $14,000 for the project, which includes support one student from OLC. The project will use NASA remote sensing data to investigate possible streamflow losses along the White Clay fault and the impact on water resources for the Pine Ridge Indian Reservation.

Contacts:
Dr. Edward Duke, South Dakota Space Grant Consortium; Dr. Liangping Li, Principal Investigator for the Tribal College Collaboration Grant and Assistant Professor of Geology and Geological Engineering

Apex Gallery

The Apex Gallery has a tradition of exhibiting Native American artists and has shown the work of local, regional, and national tribal members.

Contact:
Matthew Whitehead, APEX Gallery Director & Lecturer of Fine Art

Museum of Geology

The Museum of Geology provides help with identification of skeletal and fossil remains for all tribal governments who ask for the Museum’s assistance when specimens of interest are found.

Contact:
Dr. Laurie Anderson, Department Head/Professor Geology and Geological Engineering, Director of the Museum of Geology
The South Dakota Board of Regents Factbook for the fiscal year of 2018 shows that American Indian students comprise of 3.01% (80 AI students) of the total student body (2,654) in the fall 2018 at SD Mines. In comparison to the previous year, there was a slight decrease from 3.31% (92 AI students) in fall 2017. Also, in fall 2018, there were nine American Indian students pursuing graduate degrees and three pursuing doctorates.

The Office of Multicultural Affairs (OMA) Mission Statement:
The Office of Multicultural Affairs cultivates an inclusive campus climate that supports underrepresented populations, fosters respect for those with diverse backgrounds, and promotes cultural proficiency among faculty, staff and students.

The SD Mines Inclusion Statement:
South Dakota School of Mines & Technology is committed to cultivating an inclusive learning environment where faculty, staff, and students can grow and succeed. We value the diversity of unique backgrounds, experiences, perspectives, and talents within our community. It is our goal to promote a culture of respect, honor, understanding, integrity, and collaboration. It is through this diversity and inclusion that we find our strength.

With the values of integrity, ingenuity, inclusion, and impact, SD Mines operates through Strategic Priorities, each with implications for American Indian support and access. [https://www.sdsmt.edu/PursuitOfExcellence/](https://www.sdsmt.edu/PursuitOfExcellence/)
# CONTACT LIST

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Program</th>
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<tbody>
<tr>
<td>Anderson, Laurie</td>
<td>Department Head and Professor, Geology and Geological Engineering; Director, Museum of Geology</td>
<td>Museum of Geology</td>
</tr>
<tr>
<td>Benning, Jennifer</td>
<td>Associate Professor, Civil and Environmental Engineering</td>
<td>NSF PEEC, EPICS, MOA Tribal Projects #1 &amp; #2</td>
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<tr>
<td>Crawford, Grant</td>
<td>Associate Professor, Materials and Metallurgical Engineering</td>
<td>Summer REUs</td>
</tr>
<tr>
<td>Duke, Edward</td>
<td>Manager of Analytical Services, Engineering and Mining Experiment Station; Professor, Geology and Geological Engineering</td>
<td>South Dakota NASA EPSCoR Program</td>
</tr>
<tr>
<td>Durkin, Thomas</td>
<td>Deputy Director of South Dakota Space Grant Consortium</td>
<td>South Dakota Space Grant Consortium</td>
</tr>
<tr>
<td>Filipova, Tsvetanka</td>
<td>Senior Lecturer, Chemistry and Applied Biological Sciences</td>
<td>Green Chemistry Outreach Program, ACS Scholarships</td>
</tr>
<tr>
<td>Gilmore, Allison</td>
<td>Department Head and Professor Social Sciences; Department Head Humanities</td>
<td>APEX Gallery</td>
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<tr>
<td>Herman, Jade</td>
<td>Special Projects Coordinator, Office of the President</td>
<td>Tribal School Outreach and Engagement Plan</td>
</tr>
<tr>
<td>Herrera, Jesse</td>
<td>Director, Multicultural Affairs</td>
<td>OMA, AISES, Jump Start, Pre-Orientation, Mentor Program, Honoring Ceremony</td>
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<tr>
<td>Johnson, Brad</td>
<td>Vice President for Development</td>
<td>Foundation</td>
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<tr>
<td>Kellogg, Stuart</td>
<td>Professor, Industrial Engineering</td>
<td>EPICS</td>
</tr>
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<td>Kenner, Scott</td>
<td>Department Head and Professor, Civil and Environmental Engineering</td>
<td>MOA Tribal Project</td>
</tr>
<tr>
<td>Kerk, Carter</td>
<td>Professor, Industrial Engineering; Director NSF Tiospaye Scholars Program</td>
<td>Tiospaye, ANLSAM</td>
</tr>
<tr>
<td>Kouris, Demitris</td>
<td>Provost and Vice President for Academic Affairs</td>
<td>MOA for Tribal Project</td>
</tr>
<tr>
<td>Li, Liangping</td>
<td>Assistant Professor, Geology and Geological Engineering</td>
<td>Groundwater and Surface Water Interactions Modeling</td>
</tr>
<tr>
<td>Mahon, Pat</td>
<td>Vice President, Student Development; Dean of Students, Student Development</td>
<td>Emergency Fund</td>
</tr>
<tr>
<td>Moore, Molly</td>
<td>Associate Provost for Academic Administration; Director of Admissions</td>
<td>Admission Outreach</td>
</tr>
<tr>
<td>Rankin, Jim</td>
<td>President</td>
<td>SD Mines</td>
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<tr>
<td>Sawyer, Foster</td>
<td>Associate Professor, Geology and Geological Engineering</td>
<td>NSF OSSPEEC II</td>
</tr>
<tr>
<td>Two Bulls, Kaylynn</td>
<td>Jump Start Retention Advisor</td>
<td>SD Jump Start Program</td>
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<tr>
<td>West, Mike</td>
<td>Department Head and Associate Professor, Materials and Metallurgical Engineering</td>
<td>Summer REUs</td>
</tr>
<tr>
<td>Whitehead, Matthew</td>
<td>APEX Gallery Director &amp; Lecturer of Fine Art</td>
<td>APEX Gallery</td>
</tr>
</tbody>
</table>
Simply stated, demographics in our country are changing. Universities nationwide increasingly mirror the rich diversity of our society, coming from a breadth of religious, socioeconomic, and political backgrounds. Although not limited to the following list, students, faculty, and staff identify as underrepresented minorities, first-generation students, adult learners, international scholars, veterans, lesbian, gay, bi-sexual, and transgender.

The South Dakota School of Mines & Technology has approximately 2,700 students representing various states and foreign countries. Our students represent the vibrant and varied scope of the world’s diversity, arriving on campus with unique talents, needs, and circumstances.

Engrained within the SD Mines Strategic Plan, there is an emphasis on recruiting, retaining, and working with diverse groups, but most of all cultivating a welcoming culture on campus for both employees and students alike. However, we may not always be familiar with the groups present. The purpose of this report is to highlight the diversity found on our campus so that we may have a better understanding of who our students and colleagues are.

This awareness may also encourage a more inclusive atmosphere both in and out of the classroom. Though recognizing diversity on campus is important, the end goal is to have positive interactions with those whose background differs from our own. Diversity is not as meaningful without inclusion.

Jesse Herrera, MEd
Director, Center for Inclusion
Jesse.Herrera@sdsmt.edu
This report highlights trends. For more specific information contact individuals mentioned within each section. The report is broken down into different sections, all of which contribute to our diversity on campus:

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Retention By Group 25
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SD Mines Inclusion Statement
South Dakota School of Mines & Technology is committed to cultivating an inclusive learning environment where faculty, staff, and students can grow and succeed. We value the diversity of unique backgrounds, experiences, perspectives, and talents within our community. It is our goal to promote a culture of respect, honor, understanding, integrity, and collaboration. It is through this diversity and inclusion that we find our strength.

More information on inclusion and diversity at SD Mines can be found here: http://www.sdsmt.edu/Inclusion-and-Diversity/

Intercultural Development Inventory (IDI)
As SD Mines becomes increasingly diverse, it is important to acknowledge and accept the commonalities and differences among our students, staff, and faculty. To help cultivate a more inclusive campus atmosphere, an instrument called the Intercultural Development Inventory (IDI) is being used to assess cultural competency at SD Mines. The IDI defines cultural competence as the ability to work effectively with people from cultures different from your own. This instrument was first administered in the spring of 2014, where it was used to create a baseline on where we stood as a campus community. The results of this inventory have been used to create developmental programming so that we can nurture a welcoming campus for all walks of life. The IDI has recently been administered again in the spring of 2019.

If you are interested in taking the IDI, please contact Jesse Herrera, Director of Multicultural Affairs or Rachel Mannhalter, Training and Development Coordinator.

Global Perspective Inventory (GPI)
The Global Perspective Inventory is an instrument used to measure how a student thinks, views themselves as a person with a cultural heritage, and relates to others from other cultures, backgrounds and values.

The instrument looks at three different components:

Cognitive: How do I know?
Interpersonal: How do I relate to others?
Intrapersonal: Who am I?

The GPI is administered to all incoming freshmen as part of their orientation checklist. Students are issued a final assessment during their senior design or capstone projects their last year of school. In this way, we can measure a student’s growth throughout their time here at Mines. The GPI is designed so institutions can focus on potential relationships and connections between global student learning and development and student experiences in the curriculum, co-curriculum and community.
Center for Inclusion
The Center for Inclusion is committed to building and promoting programs, services, and resources that serve to create and sustain a diverse community. A diverse community is one that is inclusive, welcoming, and respectful, in which each citizen values differences. Engrained within campus strategic priorities, SD Mines is committed to cultivating an inclusive learning environment where faculty, staff, and students can grow and succeed. The Center of Inclusion works collaboratively with faculty, staff, and students to create an experience rich in perspectives and opportunities to learn from one another. The office encourages each person to engage in positive social change to transform and sustain the local and global communities in which we live.

The Center for Inclusion provides future and current students with information on scholarships, housing, co-ops, internships, and employment placement; sponsorship of social and cultural enrichment events and activities; and support for the student chapters of the American Indian Science and Engineering Society (AISES) and the National Society of Black Engineers (NSBE).

Center for Inclusion Mission
To cultivate an inclusive campus climate that supports underrepresented populations, fosters respect for those with diverse backgrounds, and promotes cultural proficiency among faculty, staff and students.
Mines Advantage is an optional professional development tool designed for all SD Mines students. Participating students have the chance to go through 30 total experiences in 6 core competency areas. Experiences include everything from attending a cultural event to participating in a mock interview with the Career Center. Upon completion of each item across the six core competencies a self-reflection is required to help students understand not just what they did, but why they did it and how they will apply what they learned to their personal and professional lives.

One of the core competency areas within Mines Advantage is Cultural & Global Inclusion. When participating in an event with the orange icon above, students have the opportunity to develop effective skills when interacting with people of different cultures, social groups, and nations. Students may also demonstrate an understanding and appreciation of human differences and inclusion. Personal reflection is the foundation of Mines Advantage, especially Cultural & Global Diversity. It is through these self-reflections that growth occurs and students can be more prepared when entering the diverse workplace.
The following pages compare groups within the BOR system

*Note: Each chart represents individuals who have self-identified as a particular group by checking only one box. The exceptions to this are “Multi-racial where one is American Indian” and “Multi-racial”, where one or more boxes have been checked.*
The following charts show a comparison of overall domestic “diversity” at SD Mines.

Note: “Diversity” refers to domestic students who have self-identified as American Indian, Asian, African American, Hawaiian/Pacific Islander, Hispanic, and Multi-racial.
South Dakota School of Mines and Technology
All Self-Identified Groups (Percentages) | 2013-2018

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian</td>
<td>1.63%</td>
<td>1.79%</td>
<td>1.76%</td>
<td>1.71%</td>
<td>1.76%</td>
<td>1.54%</td>
</tr>
<tr>
<td>Multiracial where one is AI</td>
<td>2.01%</td>
<td>1.61%</td>
<td>1.76%</td>
<td>1.40%</td>
<td>1.55%</td>
<td>1.47%</td>
</tr>
<tr>
<td>Native Hawaiian / Pacific Islander</td>
<td>0.11%</td>
<td>0.18%</td>
<td>0.25%</td>
<td>0.10%</td>
<td>0.14%</td>
<td>0.11%</td>
</tr>
<tr>
<td>Asian</td>
<td>1.36%</td>
<td>1.57%</td>
<td>1.13%</td>
<td>1.15%</td>
<td>1.66%</td>
<td>1.66%</td>
</tr>
<tr>
<td>African American</td>
<td>1.44%</td>
<td>1.79%</td>
<td>1.86%</td>
<td>1.92%</td>
<td>2.00%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.48%</td>
<td>3.43%</td>
<td>3.97%</td>
<td>4.83%</td>
<td>4.97%</td>
<td>4.82%</td>
</tr>
<tr>
<td>Multiracial</td>
<td>1.25%</td>
<td>1.82%</td>
<td>1.65%</td>
<td>1.89%</td>
<td>1.87%</td>
<td>2.11%</td>
</tr>
<tr>
<td>White</td>
<td>82.95%</td>
<td>81.34%</td>
<td>81.46%</td>
<td>80.17%</td>
<td>79.41%</td>
<td>80.37%</td>
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<tr>
<td>Alien</td>
<td>4.92%</td>
<td>5.50%</td>
<td>5.38%</td>
<td>6.05%</td>
<td>5.94%</td>
<td>5.43%</td>
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<tr>
<td>Unknown</td>
<td>0.83%</td>
<td>0.46%</td>
<td>0.77%</td>
<td>0.77%</td>
<td>0.76%</td>
<td>0.49%</td>
</tr>
</tbody>
</table>
The following pages show percentages of certain groups within each program

Note: “Groups” refers to domestic students who have self-identified as American Indian, Asian, African American, Hawaiian/Pacific Islander, Hispanic, and Multi-racial. If a student is in two programs, the student is counted in each program.
### Chemical Engineering - BS | 2013 - 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>American Indian</th>
<th>Asian</th>
<th>African American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Hispanic</th>
<th>Multi-racial</th>
<th>Total in Program</th>
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<tbody>
<tr>
<td>2013FA</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td></td>
<td>9</td>
<td>4</td>
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<tr>
<td>2014FA</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td></td>
<td>12</td>
<td>7</td>
<td>11.2%</td>
</tr>
<tr>
<td>2015FA</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td></td>
<td>10</td>
<td>8</td>
<td>12.7%</td>
</tr>
<tr>
<td>2016FA</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>2</td>
<td>11.0%</td>
</tr>
<tr>
<td>2017FA</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>4</td>
<td>8.3%</td>
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<tr>
<td>2018FA</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td>8.0%</td>
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</tbody>
</table>

### Computer Science - BS | 2013 - 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>American Indian</th>
<th>Asian</th>
<th>African American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Hispanic</th>
<th>Multi-racial</th>
<th>Total in Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013FA</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td></td>
<td>6</td>
<td>3</td>
<td>13.9%</td>
</tr>
<tr>
<td>2014FA</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td></td>
<td>8</td>
<td>5</td>
<td>13.7%</td>
</tr>
<tr>
<td>2015FA</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td></td>
<td>11</td>
<td>8</td>
<td>12.0%</td>
</tr>
<tr>
<td>2016FA</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td></td>
<td>7</td>
<td>5</td>
<td>16.8%</td>
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<td>2017FA</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td></td>
<td>10</td>
<td>6</td>
<td>14.5%</td>
</tr>
<tr>
<td>2018FA</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td>15.1%</td>
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</table>
Industrial Engineering and Management - BS | 2013 - 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>American Indian</th>
<th>Asian</th>
<th>African American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Hispanic</th>
<th>Multi-racial</th>
<th>Total in Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013SA</td>
<td>4</td>
<td>6</td>
<td>8</td>
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</tr>
<tr>
<td>2014FA</td>
<td>8</td>
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</tr>
<tr>
<td>2015FA</td>
<td>8</td>
<td>11</td>
<td>12</td>
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<td>10</td>
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<td>23.5%</td>
</tr>
<tr>
<td>2016FA</td>
<td>7</td>
<td>2</td>
<td>9</td>
<td>2</td>
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<td>19.6%</td>
</tr>
<tr>
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</tr>
<tr>
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<td>2</td>
<td>16</td>
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<td>23.5%</td>
</tr>
</tbody>
</table>

Interdisciplinary Sciences - BS | 2013 - 2018

<table>
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<th>Year</th>
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<th>Asian</th>
<th>African American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Hispanic</th>
<th>Multi-racial</th>
<th>Total in Program</th>
</tr>
</thead>
<tbody>
<tr>
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<td>24.1%</td>
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<td>1</td>
<td>25.0%</td>
</tr>
</tbody>
</table>
### Mining Engineering - BS | 2013 - 2018

<table>
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<th>African American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Hispanic</th>
<th>Multi-racial</th>
<th>Total in Program</th>
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</thead>
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<td>1</td>
<td>9.2%</td>
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<tr>
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<td>2</td>
<td>1</td>
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<td>6</td>
<td>9.9%</td>
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<tr>
<td>2016FA</td>
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<td>6</td>
<td>8</td>
<td>6</td>
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<td>8</td>
<td>13.0%</td>
</tr>
<tr>
<td>2017FA</td>
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<td>10</td>
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<td>12.8%</td>
</tr>
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</table>

### Non-Degree Seeking | 2013 - 2018

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<th>African American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Hispanic</th>
<th>Multi-racial</th>
<th>Total in Program</th>
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<td>19.3%</td>
</tr>
<tr>
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<td>10.7%</td>
</tr>
<tr>
<td>2017FA</td>
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<td>6</td>
<td>6</td>
<td>6</td>
<td>20.5%</td>
</tr>
</tbody>
</table>
The following chart shows a comparison of overall domestic “diversity” within each program as compared to other programs.

Note: “Diversity” refers to domestic students who have self-identified as American Indian, Asian, African American, Hawaiian/Pacific Islander, Hispanic, and Multi-racial.
The following pages show a comparison of retention by group cohorts.

Note: The following retention section was not able to be updated for the current year.

American Indian I 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Percent continued to year 2</th>
<th>Percent continued to year 3</th>
<th>Percent continued to year 4</th>
<th>Percent continued to year 5</th>
<th>Percent continued to year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Cohort</td>
<td>50.0%</td>
<td>50.0%</td>
<td>33.3%</td>
<td>16.7%</td>
<td></td>
</tr>
<tr>
<td>2013 Cohort</td>
<td>60.0%</td>
<td>60.0%</td>
<td>60.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014 Cohort</td>
<td>50.0%</td>
<td>50.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015 Cohort</td>
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<tr>
<td>2016 Cohort</td>
<td>40.0%</td>
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</tbody>
</table>
African American | 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
<th></th>
<th>Percent continued to year 2</th>
<th>Percent continued to year 3</th>
<th>Percent continued to year 4</th>
<th>Percent continued to year 5</th>
<th>Percent continued to year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Cohort</td>
<td>70.0%</td>
<td>60.0%</td>
<td>60.0%</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>2013 Cohort</td>
<td>66.7%</td>
<td>66.7%</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014 Cohort</td>
<td>66.7%</td>
<td>33.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015 Cohort</td>
<td>60.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>2016 Cohort</td>
<td>100.0%</td>
<td></td>
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</table>

Hispanic | 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
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<th>Percent continued to year 4</th>
<th>Percent continued to year 5</th>
<th>Percent continued to year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Cohort</td>
<td>66.7%</td>
<td>61.1%</td>
<td>55.6%</td>
<td>33.3%</td>
<td></td>
</tr>
<tr>
<td>2013 Cohort</td>
<td>69.0%</td>
<td>62.1%</td>
<td></td>
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</tr>
<tr>
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<td>58.3%</td>
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<td>2015 Cohort</td>
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<tr>
<td>2016 Cohort</td>
<td>87.5%</td>
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</table>
Diversity Report

Retention by Group

Multi-racial | 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
<th>Cohort</th>
<th>2012 Cohort</th>
<th>2013 Cohort</th>
<th>2014 Cohort</th>
<th>2015 Cohort</th>
<th>2016 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent continued to year 2</td>
<td>73.3%</td>
<td>63.2%</td>
<td>56.7%</td>
<td>84.1%</td>
<td>81.3%</td>
</tr>
<tr>
<td>Percent continued to year 3</td>
<td>66.7%</td>
<td>52.6%</td>
<td>36.7%</td>
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</tr>
<tr>
<td>Percent continued to year 4</td>
<td>73.3%</td>
<td>47.4%</td>
<td></td>
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<td></td>
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<td>Percent continued to year 5</td>
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<tr>
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<tr>
<td>Percent continued to year 7</td>
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</table>

White | 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
<th>Cohort</th>
<th>2012 Cohort</th>
<th>2013 Cohort</th>
<th>2014 Cohort</th>
<th>2015 Cohort</th>
<th>2016 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent continued to year 2</td>
<td>80.5%</td>
<td>77.7%</td>
<td>76.5%</td>
<td>78.1%</td>
<td>90.7%</td>
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<tr>
<td>Percent continued to year 3</td>
<td>66.3%</td>
<td>65.9%</td>
<td>65.7%</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Percent continued to year 7</td>
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</tbody>
</table>
Non-Resident Alien | 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
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<th>Percent continued to year 3</th>
<th>Percent continued to year 4</th>
<th>Percent continued to year 5</th>
<th>Percent continued to year 6</th>
<th>Percent continued to year 7</th>
</tr>
</thead>
<tbody>
<tr>
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<td>50.0%</td>
<td>50.0%</td>
<td>50.0%</td>
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</tr>
<tr>
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<td>85.7%</td>
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<tr>
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<td>100.0%</td>
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<td></td>
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<td>2016 Cohort</td>
<td>91.7%</td>
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</tbody>
</table>

Unknown | 2012 Cohort - 2016 Cohort

<table>
<thead>
<tr>
<th></th>
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<th>Percent continued to year 4</th>
<th>Percent continued to year 5</th>
<th>Percent continued to year 6</th>
<th>Percent continued to year 7</th>
</tr>
</thead>
<tbody>
<tr>
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<td>66.7%</td>
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<td>33.3%</td>
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<tr>
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<td>12.5%</td>
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<td>50.0%</td>
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<td></td>
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<tr>
<td>2016 Cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For more information regarding domestic students of color at Mines, contact Jesse Herrera at Jesse.Herrera@sdsmt.edu
There are many changes from year to year due to regular turnover, changes to reporting categories, short-term employees, etc. For example, there may be a research scientist hired temporarily, who then leave after a year. Again, these are full-time employees. Part-time employees are not listed due to incomplete data.

For more information regarding faculty and staff at Mines, contact Kelsey O’Neill at Kelsey.ONEill@sdsmt.edu
The Ivanhoe International Center develops and supports activities and programs for international students, faculty, and staff coming to SD Mines, and for those who want to engage in international and global experiences, in alignment with Mines Advantage.

International students create a vibrant mosaic of viewpoints that enriches the university’s educational experience in countless ways.
Korea, Republic of
1 graduates

Malaysia
1 undergraduate

Mongolia
1 graduate

Nepal
9 graduates

Netherlands
1 undergraduate

New Zealand
2 undergraduates

Nigeria
3 undergraduates
10 graduates

Norway
3 undergraduates
1 graduate

Peru
1 graduate

Spain
2 undergraduates

Sri Lanka
2 graduates

Tajikistan
1 graduate

Trinidad & Tobago
1 undergraduate

Turkey
3 graduates

United Kingdom
1 graduate

Vietnam
1 undergraduate

Zambia
1 graduate
Students are strongly encouraged to participate in a study abroad experience. Engineering and science are global enterprises, and education in these fields must prepare graduates to function professionally on multinational and multicultural teams and/or to work overseas at some point in their career (Mines Advantage: Cultural and Global Inclusion). SD Mines encourages departments and programs to develop innovative ways of incorporating international experiences into the curriculum that develop these skills.

The IIC coordinates efforts and assists with the logistics of these endeavors.

Note: Reporting period is fall 2016 through end of summer 2017
Study Abroad - Experiential Learning | 2017 - 2018

Non-Credit Earning Students

- Bahamas
- China
- Colombia
- Germany
- Korea (South)
- Liberia
- Mongolia
- Peru
- Uganda
- United Kingdom
Study Abroad
Field Camps and other short-term options

Degree and non-degree seeking students may earn credit for study abroad at SD Mines. Study Abroad opportunities include a variety of field courses offered through the Black Hills Natural Science Field Station, independent research and senior design projects, and service learning opportunities.

<table>
<thead>
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<th>Country</th>
<th>University/Program</th>
<th>Major</th>
<th>Total</th>
<th>SU18, 3 WKS</th>
<th>SU18, 4 WKS</th>
<th>SU18, 5 WKS</th>
<th>SU18, 7 DAYS</th>
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<td>SPEC</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Iceland</td>
<td>BHNSFS Volcanology\ Field Camp</td>
<td>SPEC</td>
<td>19</td>
<td>9</td>
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<tr>
<td>Liberia</td>
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<td>CEE</td>
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<td>CEE</td>
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<tr>
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<td>CEE</td>
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<tr>
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For more information regarding International programs at Mines, contact Suzi Aadland at Suzi.Aadland@sdsmt.edu
Together we foster systemic campus and cultural change for our students with disabilities in collaboration with departments across the university.

Students with disabilities at our university are covered by the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act. According to these laws, all higher education institutions received federal assistance may not discriminate on the basis of a disability.

All academic programs and extra-curricular activities are to be equally accessible by all students. In order to achieve equal access, our institution offers accommodations to our students that have self-disclosed their disabilities to our Disability Services office on campus. These accommodations are in place to “level the playing field” for all students.

Typical accommodations granted include: extra time on exams, reduced distraction rooms, note takers, and use of adaptive technology. At SD Mines, our registered ADA students have a wide range of disabilities, which are both visible (i.e., mobility issues) and non-visible (i.e., psychiatric disorders, learning disabilities, etc.). Each student has their own unique needs based upon their diagnosis or condition, which is addressed and accommodated on an individual basis with our university’s ADA coordinator.

For more information regarding ADA at Mines, contact Amanda Lopez at Amanda.Lopez@sdsmt.edu
To fulfill our country’s promise to care for and honor the men and women who are America’s Veterans.

Having Veterans on campus is an honor that enriches our institution. SD Mines recognizes the unique experiences and leadership that veterans bring from their military service. For some returning veterans, going back to school can present unique challenges. SD Mines is proud to support those who have served, providing them with the resources needed to achieve success in any endeavor. There are many offices on campus and within the community that are designed to see veterans succeed.

In addition to studying, the VRC is used for a breadth of events including spring and fall Veterans’ Orientation sessions, scholarship celebrations, veteran-to-veteran academic tutoring, socializing, potlucks, Veterans’ Day open house events, monthly visits from the VA Black Hills Health Care System, and Veterans Upward Bound college-prep classes in math and writing.

The VRC is a place for student veterans to learn about assistive resources, gain practical skills that will support their time on campus, reflect on their service history and new mission as students and develop their peer community. Most importantly, it is a place to continue the bonds of comradery and the tradition of team work while tapping into the greatest resource, each other.
For more information regarding veterans at Mines, contact Derek Flom at Derek.Flom@sdsmt.edu
Pre-Health Pathways at SD Mines provides students with opportunities to explore various careers in health care, supports student success through advising and professional development activities, and prepares students to be competitive applicants for graduate programs in health care.

Students considering health professions must excel academically, balance various extracurricular activities, and plan carefully to be competitive applicants for professional programs in health care. The Student Success Center (SSC) is the home of the Pre-Health Pathways office, where students can meet with Pre-Health Pathways Advisor, get connected to the growing pre-health community, and find resources to prepare themselves for professional programs in health care, such as medical programs, dental programs, pharmacy programs, or physical therapy programs just to name a few.

Pre-health students at the South Dakota School of Mines & Technology benefit from a dual advising model that involves meeting with both academic advisors within their home departments and with the Pre-Health Pathways Advisor within the Student Success Center. These advisors prepare pre-health students for careers in health care by working with them to schedule the appropriate coursework, identify professional development opportunities, such as shadowing, internships, volunteer activities, and patient care experiences, find resources to study for entrance exams, navigate the application process, and practice for interviews.

Our dual advising approach helps students to become strong, self-reflective applicants for professional programs and provides them with the foundational knowledge, policy information, resources, and career advice that they need to grow professionally.

Pre-Health Pathways aligns with the values of SD Mines by promoting a culture of integrity, ingenuity, and inclusion and by helping students engage in on-campus activities, volunteer work, and direct health care experiences that impact our local community.
A larger percentage of our pre-health students (N = 174) are female (N =100) than male (N = 74).

- Pre-health students (N = 174) identify as belonging to one or more racial/ethnic groups.

- Among pre-health students, 87.93% indicated that “White/Caucasian” was their first, second, or third racial/ethnic identity (N = 153).

- The second largest percentage of students, 7.47%, indicated that “Asian” was their first, second, or third racial/ethnic identity (N = 13).

- The third largest percentage of students, 6.32%, indicated that “Hispanic/Latino” was their first, second, or third racial/ethnic identity (N = 11).

- The fourth largest percentage of students, 5.17%, indicated that “Native American” was their first, second, or third racial/ethnic identity (N = 9).

- The fifth largest percentage of students, 4.02%, indicated that “Black/African American” was their first, second, or third racial/ethnic identity (N = 7).
Race/Ethnicity

Number of Students

AM  AS  BL  HL  WH
Pre-health students earn their degrees from departments across campus. The following charts show the percentages of pre-health students (N = 174) pursuing various majors.

The percentages of pre-health students (N = 10) pursuing an additional major or a minor in a different program.
WISE is committed to a campus culture that provides all students access to a full range of personal and professional choices, fosters agency and self-determination for all, and creates transformative experiences to help open the door of opportunity wide for all women students.

Cultivating a diverse, highly trained student body with an array of unique experiences and perspectives is an integral step in empowering the next generation of leaders and innovators in science, technology, engineering, and math (STEM).

The Women in Science and Engineering (WiSE) program is designed to educate, recruit, retain, and graduate academically motivated women in STEM fields through mentoring, professional development, networking and scholarship support.

WiSE seeks to help fill the gap between men and women in STEM gender diversity, by providing our women students with resources to help them succeed at SD Mines and in their future careers, and by educating and recruiting young women into STEM disciplines. Through our monthly programming as well as our peer mentoring program, we hope to make that barrier a little less pronounced. We work extensively with industrial partners to get as many women STEM role models in front of our women students as possible, and also collaborate with academic departments to get women faculty connected to each other and students.

Our WiSE Center is a space for prospective and current women students, as well as women faculty. Constructive feedback from women students in the last five years included a strong desire for a physical space on campus devoted to helping women students and resources and study. In the fall of 2015, those comments came to fruition with the opening of the WiSE Center. This center is the first of its kind among the SD Board of Regent schools, and acts as a study area for students, meeting and small event space for students and faculty, and resource center for current and prospective students.
RETENTION

Women have maintained a higher retention rate than men.

WOMEN’S ENROLLMENT

Numbers reflect year 1 to year 2 retention for first time freshmen women
For more information regarding women students or WiSE at Mines, contact Sarah Folsland at Sarah.Folsland@sdsmt.edu
Diversity, Multiculturalism, and Inclusion Glossary

Please note that the following list of terms, and their respective definitions, is meant to be extensive but is in no way complete. It is our intention to provide the SD Mines campus community with this glossary as an educational resource specific to the 2017 – 2018 Diversity Report, while also acknowledging that such lists must be ever evolving to adapt to current ways of thinking and being. We would also like to suggest that this glossary be only a part of one’s education around diversity, multiculturalism, and inclusion. We encourage all readers to explore these topics in further detail through books, movies, academic journals, television programs, podcasts, and other forms of educational media. Note: each section of terms is organized alphabetically.

General Student Identifiers

First-generation college students
Students with parents or guardians who do not possess a four-year degree

First-time students
Full-time students are those who are admitted to SD Mines without ever having been enrolled in college before; also called first-time freshmen or first-time full-time undergraduates.

Student(s) of Color
The term “student(s) of color” refers to all/any people of African, Latino/Hispanic, American Indian, Asian or Pacific Islander decent, and its intent is to be inclusive. This term is believed to be slowly replacing terms such as racial and ethnic minorities. The term allows for a more complex set of identities for the individual.

Transfer students
Upper-division transfer students have transferred to Mines from another college with two years of lower division college-level work completed. Lower-division transfer students have transferred with less than two years of college-level work completed.

Underrepresented students
The term “underrepresented” refers to ethnic groups that are traditionally underrepresented in higher education. For the purposes of this report, underrepresented students (may be abbreviated as URM, meaning underrepresented minorities) include students who self-report their ethnicity as Hispanic or Latino/a and/or their race as African-American, American Indian/Alaska Native, or Native Hawaiian/Other Pacific Islander.

Underrepresented students also include those who indicate they have two or more races, with at least one from the above categories. Non-underrepresented, or non-URM, students include those who self-report as White, Asian, or both White and Asian.

Students who decline to state, leave the ethnicity and race question blank, or who are non-resident aliens are categorized as “unknown.”

Non-US citizen students could include resident aliens and international students.
Veterans

Active Duty Military
Full time occupation in one of the five branches of the United States Armed Forces.

Air Force
The aerial warfare service branch of the United States Armed Forces.

Army
The largest branch of the United States Armed Forces and performs land-based military operations.

Coast Guard
A maritime, military, multi-mission service unique among the United States Armed Forces branches for having a maritime law enforcement mission and a federal regulatory agency mission as part of its mission set.

Disabled Veteran
A veteran who served on active duty in the United States Armed Forces ground, naval, or air service, and: 1) is entitled to disability compensation (or who but for the receipt of military retired pay would be entitled to disability compensation) under laws administered by the Secretary of Veterans Affairs, or 2) was discharged or released from active duty because of a service-connected disability.

Marine Corps
A branch of the United States Armed Forces responsible for providing power projection, using the mobility of the United States Navy, to deliver rapidly, combined-arms task forces on land, at sea, and in the air.

National Guard
Part of the reserve components of the United States Armed Forces, this reserve military force is composed of National Guard military members or units of each state and the territories of Guam, of the Virgin Islands, and of Puerto Rico, as well as of the District of Columbia, for a total of 54 separate organizations.

National Oceanic and Atmospheric Administration
An American scientific agency within the United States Department of Commerce that focuses on the conditions of the oceans and the atmosphere.

Navy
The naval warfare service branch of the United States Armed Forces.

Public Health Service
Primary division under the U.S. Department of Health, Education and Welfare. Comprises all Agency Divisions of Health and Human Services and the Commissioned Corps (FDA, HIS, NIH, etc.)

Reserve Military
A valued partner of the active-duty department. It offers citizens the chance to serve on a part-time basis, training near home until called to Active Duty. A reservist can pursue a full-time civilian education or obtain special military training while serving.
Reserve Officers' Training Corps (ROTC)
A group of college-based officer training programs for training commissioned officers of the United States Armed Forces.

Student Veteran
A student who has served or is serving in the United States Armed Forces.

Veteran
A person who has served or is serving in the United States Armed Forces.

General Social Justice Terms

Ally
Someone who makes the commitment and effort to recognize their privilege (based on gender, class, race, sexual identity, etc.) and work in solidarity with oppressed groups in the struggle for justice. Allies understand that it is in their own interest to end all forms of oppression, even those from which they may benefit in concrete ways. [1]

Bigotry
Intolerant prejudice that glorifies one’s own group and denigrates members of other groups. [1]

Classism
Prejudiced thoughts and discriminatory actions based on difference in socio-economic status, income, class; usually by upper classes against lower. [3]

Cultural Appropriation
Theft of cultural elements for one's own use, commodification, or profit — including symbols, art, language, customs, etc. — often without understanding, acknowledgement, or respect for its value in the original culture. Results from the assumption of a dominant (i.e. white) culture’s right to take other cultural elements. [1]

Culture
A social system of meaning and custom that is developed by a group of people to assure its adaptation and survival. These groups are distinguished by a set of unspoken rules that shape values, beliefs, habits, patterns of thinking, behaviors and styles of communication. [1]

Discrimination
The unequal treatment of members of various groups based on race, gender, social class, sexual orientation, physical ability, religion and other categories. In the United States, the law makes it illegal to discriminate against someone on the basis of race, color, religion, national origin, or sex. The law also makes it illegal to retaliate against a person because the person complained about discrimination, filed a charge of discrimination, or participated in an employment discrimination investigation or lawsuit. The law also requires that employers reasonably accommodate applicants' and employees' sincerely held religious practices, unless doing so would impose an undue hardship on the operation of the employer's business. [1]

Diversity
Diversity includes all the ways in which people differ, and it encompasses all the different characteristics that make one individual or group different from another. It is all-inclusive and recognizes everyone and every group as part of the diversity that should be valued. A broad definition includes not only race, ethnicity, and gender — the groups that most often come to mind when the term "diversity" is used — but also age, national origin, religion, disability, sexual orientation, socioeconomic status, education, marital status, language, and physical appearance. It also involves different ideas, perspectives, and values. [1]
Equality
Equal treatment that may or may not result in equitable outcomes. [4]

Equity
The proportional distribution or parity of desirable outcomes across groups. Sometimes confused with equality, equity refers to outcomes, while equality connotes equal treatment. Where individuals or groups are dissimilarly situated, equal treatment may be insufficient for or even detrimental to equitable outcomes. An example is individualized educational accommodations for students with disabilities, which treat some students differently in order to ensure their equitable access to education. [4]

Feminism
Refers broadly to an ideology and movement advancing full gender equity. According to scholar/activist Angela Davis, there is general agreement that feminism in its many versions acknowledges the social impact of gender and involves opposition to misogyny. While differing in the names they call themselves, many who are committed to the ideal of gender equity believe, like Davis herself, that the most effective versions of feminism acknowledge the various ways gender, class, race and sexual orientation inform each other. [4]

Implicit Bias
Also known as unconscious or hidden bias, implicit biases are negative associations that people unknowingly hold. They are expressed automatically, without conscious awareness. Many studies have indicated that implicit biases affect individuals’ attitudes and actions, thus creating real-world implications, even though individuals may not even be aware that those biases exist within themselves. Notably, implicit biases have been shown to trump individuals’ stated commitments to equality and fairness, thereby producing behavior that diverges from the explicit attitudes that many people profess. The Implicit Association Test (IAT) is often used to measure implicit biases with regard to race, gender, sexual orientation, age, religion, and other topics. [1]

Oppression
Systemic devaluing, undermining, marginalizing, and disadvantaging of certain social identities in contrast to the privileged norm; when some people are denied something of value, while others have ready access. [1]

Power
Power is unequally distributed globally and in U.S. society; some individuals or groups wield greater power than others, thereby allowing them greater access and control over resources. Wealth, whiteness, citizenship, patriarchy, heterosexism, and education are a few key social mechanisms through which power operates. Although power is often conceptualized as power over other individuals or groups, other variations are power with (used in the context of building collective strength) and power within (which references an individual’s internal strength). Learning to “see” and understand relations of power is vital to organizing for progressive social change. [1]

Prejudice
A pre-judgment or unjustifiable, and usually negative, attitude of one type of individual or groups toward another group and its members. Such negative attitudes are typically based on unsupported generalizations (or stereotypes) that deny the right of individual members of certain groups to be recognized and treated as individuals with individual characteristics. [1]

Social Justice
A broad term for action intended to create genuine equality, fairness and respect among peoples. [3]
Race and Ethnicity

Biracial
Often used to describe a person whose parents belong to two different racial categories. Some critics argue that this usage promotes a biologistic concept of race based on blood quantum that denies the socially-constructed nature of race. The term should not be used interchangeably with bicultural. For example, a child of a black parent and a parent of European descent may claim the ethnic cultures of both parents, while nevertheless identifying racially as black. [4]

Ethnicity
A social construct that divides people into smaller social groups based on characteristics such as shared sense of group membership, values, behavioral patterns, language, political and economic interests, history and ancestral geographical base. Examples of different ethnic groups are: Cape Verdean, Haitian, African American (Black); Chinese, Korean, Vietnamese (Asian); Cherokee, Mohawk, Navaho (Native American); Cuban, Mexican, Puerto Rican (Latino); Polish, Irish, and Swedish (White). [1]

First Nations People
Individuals who identify as those who were the first people to live on the Western Hemisphere continent; people also identified as Native Americans.

Individual Racism
Individual racism refers to the beliefs, attitudes, and actions of individuals that support or perpetuate racism. Individual racism can be deliberate, or the individual may act to perpetuate or support racism without knowing that they’re doing.
Examples:
• Telling a racist joke, using a racial epithet, or believing in the inherent superiority of whites over other groups;
• Avoiding people of color whom you do not know personally, but not whites whom you do not know personally (e.g., white people crossing the street to avoid a group of Latino/a young people; locking their doors when they see African American families sitting on their doorsteps in a city neighborhood; or not hiring a person of color because “something doesn’t feel right”);
• Accepting things as they are (a form of collusion). [1]

Institutional Racism
Institutional racism refers specifically to the ways in which institutional policies and practices create different outcomes for different racial groups. The institutional policies may never mention any racial group, but their effect is to create advantages for whites, as well as oppression and disadvantage for people from groups classified as people of color.
Examples:
• Government policies that explicitly restricted the ability of people to get loans to buy or improve their homes in neighborhoods with high concentrations of African Americans (also known as "red-lining").
• City sanitation department policies that concentrate trash transfer stations and other environmental hazards disproportionately in communities of color. [1]

Race
Unearned social power accorded by the formal and informal institutions of society to ALL members of a dominant group (e.g. white privilege, male privilege, etc.). Privilege is usually invisible to those who have it because we’re taught not to see it, but nevertheless it puts them at an advantage over those who do not have it. [1]
Racism
Individual, cultural, institutional and systemic ways by which differential consequences are created for groups historically or currently defined as white being advantaged, and groups historically or currently defined as non-white (African, Asian, Hispanic, Native American, etc.) as disadvantaged. [1]

White Privilege
The accumulated and interrelated advantages and disadvantages of white privilege that are reflected in racial/ethnic inequities in life-expectancy and other health outcomes, income and wealth and other outcomes, in part through different access to opportunities and resources. These differences are maintained in part by denying that these advantages and disadvantages exist at the structural, institutional, cultural, interpersonal and individual levels and by refusing to redress them or eliminate the systems, policies, practices, cultural norms and other behaviors and assumptions that maintain them. [1]

Womanism
A term coined by Alice Walker to describe the experiences and perspectives of black women, in contrast to those of white middle-class women on which feminism has been centered. Walker defined the term accordingly: 1. From womanish. (opp. of "girlish," i.e., frivolous, irresponsible, not serious.) A black feminist or feminist of color... Usually referring to outrageous, audacious, courageous or willful behavior. Wanting to know more and in greater depth than is considered "good" for one... Responsible. In charge. Serious. 2. Also: A woman who loves other women, sexually and/or nonsexually. Appreciates and prefers women's culture, women's emotional flexibility (values tears as natural counterbalance of laughter), and women's strength... Committed to the survival and wholeness of entire people, male and female. Not separatist, except periodically, for health." [4]

Gender and Sexuality

AFAB and AMAB
Acronyms meaning “assigned female/male at birth” (also designated female/male at birth or female/male assigned at birth). No one, whether cis or trans, gets to choose what sex they’re assigned at birth. This term is preferred to “biological male/female”, “male/female bodied”, “natal male/female”, and “born male/female”, which are defamatory and inaccurate. [9]

Asexual
An adjective used to describe people who do not experience sexual attraction (e.g., asexual person). A person can also be aromantic, meaning they do not experience romantic attraction. (For more information, visit asexuality.org) [2]

Bisexual, Bi
A person who has the capacity to form enduring physical, romantic, and/or emotional attractions to those of the same gender or to those of another gender. People may experience this attraction in differing ways and degrees over their lifetime. Bisexual people need not have had specific sexual experiences to be bisexual; in fact, they need not have had any sexual experience at all to identify as bisexual. Do not use a hyphen in the word "bisexual," and only capitalize bisexual when used at the beginning of a sentence. [2]

Biphobia
Fear of bisexuals, often based on stereotypes, including inaccurate associations with infidelity, promiscuity, and transmission of sexually transmitted infections. Intolerance, bias, or prejudice is usually a more accurate description of antipathy toward bisexual people. [2]
**Cisgender/Cis**
A term for someone who exclusively identifies as their sex assigned at birth. The term cisgender is not indicative of gender expression, sexual orientation, hormonal makeup, physical anatomy, or how one is perceived in daily life. [9]

**Civil Union**
Historically used in the U.S. to describe state-based relationship recognition for same-sex couples that offered some or all of the state (though none of the federal) rights, protections, and responsibilities of marriage. While many Western countries (including the United States) have now legalized marriage for same-sex couples, others only legally recognize same-sex relationships through civil unions. [2]

**Closed**
Describes a person who is not open about their sexual orientation. Better to simply refer to someone as "not out" about being LGBTQ. Some individuals may be out to some people in their life, but not out to others due to fear of rejection, harassment, violence, losing one's job, or other concerns. [2]

**Coming Out**
A lifelong process of self-acceptance. People forge a LGBTQ identity first to themselves and then they may reveal it to others. Publicly sharing one's identity may or may not be part of coming out. [2]

**Cross-Dresser**
While anyone may wear clothes associated with a different sex, the term cross-dresser is typically used to refer to men who occasionally wear clothes, makeup, and accessories culturally associated with women. Those men typically identify as heterosexual. This activity is a form of gender expression and not done for entertainment purposes. Cross-dressers do not wish to permanently change their sex or live full-time as women. Replaces the term "transvestite". [2]

**Domestic Partnership**
Civil/legal recognition of a committed relationship between two people that sometimes extends limited protections to them. [2]

**Gay**
The adjective used to describe people whose enduring physical, romantic, and/ or emotional attractions are to people of the same sex (e.g., gay man, gay people). Sometimes lesbian (n. or adj.) is the preferred term for women. Avoid identifying gay people as "homosexuals" an outdated term considered derogatory and offensive to many lesbian and gay people. [2]

**Gender Confirmation Surgery (GCS)**
Refers to doctor-supervised surgical interventions, and is only one small part of transition (see transition above). Avoid the phrase "sex change operation." Do not refer to someone as being "pre-op" or "post-op." Not all transgender people choose to, or can afford to, undergo medical surgeries. [2]
Gender Dysphoria
In 2013, the American Psychiatric Association released the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) which replaced the outdated entry "Gender Identity Disorder" with Gender Dysphoria, and changed the criteria for diagnosis. The necessity of a psychiatric diagnosis remains controversial, as both psychiatric and medical authorities recommend individualized medical treatment through hormones and/or surgeries to treat gender dysphoria. Some transgender advocates believe the inclusion of Gender Dysphoria in the DSM is necessary in order to advocate for health insurance that covers the medically necessary treatment recommended for transgender people [2]

Gender Expression
External manifestations of gender, expressed through a person's name, pronouns, clothing, haircut, behavior, voice, and/or body characteristics. Society identifies these cues as masculine and feminine, although what is considered masculine or feminine changes over time and varies by culture. Typically, transgender people seek to align their gender expression with their gender identity, rather than the sex they were assigned at birth. [2]

Gender Identity
A person's internal, deeply held sense of their gender. For transgender people, their own internal gender identity does not match the sex they were assigned at birth. Most people have a gender identity of man or woman (or boy or girl). For some people, their gender identity does not fit neatly into one of those two choices (see non-binary and/or genderqueer below.) Unlike gender expression (see below) gender identity is not visible to others. [2]

Heterosexual
An adjective used to describe people whose enduring physical, romantic, and/or emotional attraction is to people of the opposite sex. Also straight. [2]

Homophobia
Fear of people attracted to the same sex. Intolerance, bias, or prejudice is usually a more accurate description of antipathy toward LGBTQ people. [2]

Homosexual
Outdated clinical term considered derogatory and offensive. Please avoid using “homosexual” except in direct quotes. Please also avoid using “homosexual” as a style variation simply to avoid repeated use of the word “gay.” The Associated Press, New York Times and Washington Post restrict usage of the term. [2]

Intersex
An umbrella term describing people born with reproductive or sexual anatomy and/or a chromosome pattern that can't be classified as typically male or female. Those variations are also sometimes referred to as Differences of Sex Development (DSD.) Avoid the outdated and derogatory term "hermaphrodite." While some people can have an intersex condition and also identify as transgender, the two are separate and should not be conflated. (For more information, visit interactyouth.org.) [2]

Lesbian
A woman whose enduring physical, romantic, and/or emotional attraction is to other women. Some lesbians may prefer to identify as gay (adj.) or as gay women. Avoid identifying lesbians as "homosexuals," a derogatory term. [2]
LGBTQ
Acronym for lesbian, gay, bisexual, transgender, and queer. Sometimes, when the Q is seen at the end of LGBT, it can also mean questioning. LGBT and/or GLBT are also often used. The term "gay community" should be avoided, as it does not accurately reflect the diversity of the community. Rather, LGBTQ community is preferred. [2]

Marriage
In June 2015, the U.S. Supreme Court ruled in Obergefell v. Hodges that every American has the constitutional right to marry the person they love. When reporting on marriage for same-sex couples, preferred terminology includes marriage equality and marriage for same-sex couples. Note, the terms "gay marriage" and "same-sex marriage" should be avoided, as they can suggest marriage for same-sex couples is somehow different than other marriages. [2]

Openly Gay
Describes people who self-identify as gay in their personal, public, and/or professional lives. Also openly lesbian, openly bisexual, openly transgender, openly queer. While accurate and commonly used, the phrase still implies a confessional aspect to publicly acknowledging one's sexual orientation or gender identity. See out below. [2]

Out
A person who self-identifies as LGBTQ in their personal, public, and/or professional lives. For example: Ricky Martin is an out pop star from Puerto Rico. Preferred to openly gay. [2]

Outing
The act of publicly declaring (sometimes based on rumor and/or speculation) or revealing another person's sexual orientation or gender identity without that person's consent. Considered inappropriate by a large portion of the LGBTQ community. [2]

Pansexual
(Also referred to as omnisexual or polysexual): referring to the potential for sexual attractions or romantic love toward people of all gender identities and biological sexes; the concept of pansexuality deliberately rejects the gender binary. [5]

Queer
An adjective used by some people, particularly younger people, whose sexual orientation is not exclusively heterosexual (e.g. queer person, queer woman). Typically, for those who identify as queer, the terms lesbian, gay, and bisexual are perceived to be too limiting and/or fraught with cultural connotations they feel don't apply to them. Some people may use queer, or more commonly genderqueer, to describe their gender identity and/or gender expression. Once considered a pejorative term, queer has been reclaimed by some LGBT people to describe themselves; however, it is not a universally accepted term even within the LGBT community. When Q is seen at the end of LGBT, it typically means queer and, less often, questioning. [2]

Sexual Orientation
The scientifically accurate term for an individual's enduring physical, romantic and/or emotional attraction to members of the same and/or opposite sex, including lesbian, gay, bisexual, and heterosexual (straight) orientations. Avoid the offensive term "sexual preference," which is used to suggest that being gay, lesbian, or bisexual is voluntary and therefore "curable." People need not have had specific sexual experiences to know their own sexual orientation; in fact, they need not have had any sexual experience at all. [2]
Title IX (of The Education Amendments of 1972, as amended)
Federal law prohibiting sex discrimination under any educational program or activity receiving federal financial assistance. Covers both employees and students, as well as athletics, physical education, and counseling. Does not cover curriculum materials. Requires institutional self-evaluation and appointment of Title IX coordinators. [4]

Trans
Used as shorthand to mean transgender or transsexual - or sometimes to be inclusive of a wide variety of identities under the transgender umbrella. Because its meaning is not precise or widely understood, be careful when using it with audiences who may not understand what it means. Avoid unless used in a direct quote or in cases where you can clearly explain the term’s meaning in the context of your story. [2]

Transgender
An umbrella term for people whose gender identity and/or gender expression differs from what is typically associated with the sex they were assigned at birth. People under the transgender umbrella may describe themselves using one or more of a wide variety of terms - including transgender. Some of those terms are defined below. Use the descriptive term preferred by the person. Many transgender people are prescribed hormones by their doctors to bring their bodies into alignment with their gender identity. Some undergo surgery as well. But not all transgender people can or will take those steps, and a transgender identity is not dependent upon physical appearance or medical procedures. [2]

Transition
Altering one’s birth sex is not a one-step procedure; it is a complex process that occurs over a long period of time. Transition can include some or all of the following personal, medical, and legal steps: telling one’s family, friends, and co-workers; using a different name and new pronouns; dressing differently; changing one’s name and/or sex on legal documents; hormone therapy; and possibly (though not always) one or more types of surgery. The exact steps involved in transition vary from person to person. Avoid the phrase "sex change". [2]

Transsexual
An older term that originated in the medical and psychological communities. Still preferred by some people who have permanently changed - or seek to change - their bodies through medical interventions, including but not limited to hormones and/or surgeries. Unlike transgender, transsexual is not an umbrella term. Many transgender people do not identify as transsexual and prefer the word transgender. It is best to ask which term a person prefers. If preferred, use as an adjective: transsexual woman or transsexual man. [2]

Sex
The classification of a person as male or female. At birth, infants are assigned a sex, usually based on the appearance of their external anatomy. (This is what is written on the birth certificate.) A person’s sex, however, is actually a combination of bodily characteristics including: chromosomes, hormones, internal and external reproductive organs, and secondary sex characteristics. [2]

Sexism
A system of oppression based on social constructions of gender superiority and inferiority, which is expressed in individual, institutional as well as cultural forms and functions for the benefit of the dominant sex at the expense of others. [4]

Sexist
A member of the group for which systematic sex-based oppression is structured. [4]
**Disability**

**Able-bodied**
This term is used to describe someone who does not identify as having a disability. Some members of the disability community oppose its use because it implies that all people living with disabilities lack “able bodies” or the ability to use their bodies well. They prefer “non-disabled” or “enabled” as more accurate terms. [7]

**Americans with Disabilities Act (ADA)**
Signed into law on July 26, 1990, the ADA is a wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability. It affords similar protections against discrimination to Americans with disabilities as the Civil Rights Act of 1964, which made discrimination based on race, religion, sex, national origin, and other characteristics illegal. [6]

**Asperger's syndrome**
The diagnosis of “Asperger’s syndrome” was removed from the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders in 2012, according to New Scientist. While some patients prefer the label of Asperger’s, perceiving it to carry less stigma, the Autistic Self Advocacy Network supports its reference as an autism spectrum disorder. Note the S in syndrome is not capitalized. [7]

**Attention Deficit/Hyperactivity Disorder (ADHD)**
Characterized by difficulty maintaining focus and attention, hyperactivity, and/or controlling behavior. [10]

**Autism/autism spectrum disorder**
Autism spectrum disorder is a group of complex disorders related to brain development. Common symptoms of autism spectrum disorder include difficulties in communication, impaired social interaction and restricted and repetitive patterns of behavior, interests or activities, according to the National Institute of Mental Health. However, symptoms vary across the spectrum. Some experts classify autism as a developmental disorder rather than a mental illness. [7]

**Disability**
A disability is an impairment that considerably restricts one or more major life activities (walking, talking, reading, learning, etc.). [10]

**Hearing Impairment**
A hearing impairment describes one’s inability to hear and/or differentiate sounds. Reduced ability to hear, no ability to hear at all, or difficulty processing sounds (auditory processing disorder) all classify as hearing impairments. [10]

**Invisible Disabilities**
The majority of disabled people have disabilities or chronic illnesses that are invisible or hidden. Although many in the general public associate disability only with people using wheelchairs or white canes or who are missing limbs, more people have conditions that can’t be seen but are defined as disabilities under the 1990 Americans with Disabilities Act. [7]

**Learning disability**
A neurological disorder where the brain has difficulty processing certain information. These difficulties can interfere with learning skills such as reading, writing, speaking, spelling, understanding language, visual-spatial perceptions, etc. [10]
**Language Disorder**
Difficulty understanding others (receptive language), or having trouble with sharing thoughts, ideas, and feelings (expressive language). [11]

**Physical/Mobility Impairment**
Any condition that makes it difficult for a person to move their upper and/or lower extremities. May include “Wheelchair/wheelchair-bound/confined to wheelchair” term below. [10]

**Speech Disorder**
Inability to produce speech sounds correctly and/or fluently. Difficulty pronouncing and/or articulating, as well as stuttering are examples of speech disorders. [11]

**Traumatic Brain Injury**
An injury to the brain that manifests physical and/or cognitive limitations. [10]

**Universal design (UD)**
Also known as "inclusive design" and "design for all," this is an approach to the design of products, places, policies and services that can meet the needs of as many people as possible throughout their lifetime, regardless of age, ability, or situation. [6]

**Visual Impairment:**
Includes both those with low vision, as well as those who are blind. Other elements influencing visual impairment include but are not limited to: contrast sensitivity, light sensitivity, glare sensitivity, and light/dark adaptation. [12]

**Wheelchair/wheelchair-bound/confined to a wheelchair**
People who use mobility equipment such as a wheelchair, scooter or cane consider their equipment part of their personal space, according to the United Spinal Association. People who use wheelchairs have widely different disabilities and varying abilities. [7]

**International**

**ARO**
Alternate Responsible Officer for SEVIS J-1 program [8]

**CBP**
Customs and Border Protection [8]

**DSO**
Designated School Official for SEVIS F-1 program [8]

**ICE**
Immigration & Customs Enforcement [8]

**INS**
US Immigration & Naturalization Service (no longer used officially, but still used in casual manner) [8]

**NAFSA**
National Association for Foreign Student Advisors; also known as NAFSA: Association of International Educators [8]

**PDSO**
Primary Designated School Official for SEVIS F-1 program [8]
RO
Responsible Officer for SEVIS J-1 program [8]

SEVP
Student & Exchange Visitor Program [8]

SEVIS
Student & Exchange Information System (the electronic tracking program for international students and exchange visitors) [8]

USCIS
United States Citizenship & Immigration Service (formerly known as the INS) [8]

This glossary was curated by Graham Davis, M.Ed., Assistant Director of the Student Activities and Leadership Center at the South Dakota School of Mines & Technology

Veterans section was supplemented by Matt Hanley, Manager of Career and Professional Development Center (Updated April 2018)

Disability section was supplemented by Jennifer Williams, Intern for the Counseling and ADA Services Office (Updated March 2018)
// Glossary Sources

Our VISION is to develop world-class leaders in science and engineering to benefit society.

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.

We VALUE integrity, ingenuity, inclusion, and impact.

ACADEMIC & CO-CURRICULAR EXCELLENCE

Graduate innovative students in the fields of science and engineering who are prepared to contribute to solving global challenges and serve as leaders in an increasingly competitive and interconnected world.

- Develop and implement a strategic enrollment plan to effectively recruit and retain students.
- Continuously improve on the curriculum and experiences that make our university both extraordinary and distinctive.
- Advance innovative, hands-on, project-based learning strategies integrated across disciplines.
- Advise and mentor students to maximize their opportunities for academic, professional, and personal success.
- Create and maintain distinctive programs that are responsive to changing industry and societal needs.

OUTREACH & ENGAGEMENT

Build recognition and respect by promoting the unique achievements of our students, faculty, and staff and increasing engagement with alumni, stakeholders, and the community.

- Create a marketing plan to strengthen brand recognition and enhance reputation.
- Increase visibility and recognition of the academic, athletic, and co-curricular programs.
- Advance university support and infrastructure development through coordinated initiatives involving alumni, Foundation, and industry partners.
- Forge stronger connections with the local community, and state, regional, national, and international partners.

RESEARCH & INNOVATION

Promote an innovative and research-driven culture that discovers knowledge and creates wide-ranging partnerships that benefit society through economic growth.

- Obtain a Doctoral Research University Carnegie classification.
- Identify and pursue both government and non-governmental research funding opportunities in both fundamental and applied research.
- Increase knowledge and skills in proposal preparation and promote a culture of collaboration and support.
- Develop plans to integrate undergraduate research in the curriculum.
- Develop state-of-the-art facilities and information technology that bolster the research, instructional, and communication needs of the campus community.

CAMPUS CULTURE

Strive to make our campus a place where students, faculty, and staff thrive in an inclusive, equitable, diverse, and creative environment.

- Foster a safe and healthy environment.
- Promote a balanced value system that encompasses a universal commitment to academic success, individual well-being, service, and philanthropy.
- Build a sense of community that cultivates collaboration, inclusion, and innovation.
- Promote flexible business processes and practices that support excellence and efficiency.
South Dakota School of Mines & Technology is committed to cultivating an inclusive learning environment where faculty, staff, and students can grow and succeed.

We value the diversity of unique backgrounds, experiences, perspectives, and talents within our community.

It is our goal to promote a culture of respect, honor, understanding, integrity, and collaboration.

It is through this diversity and inclusion that we find our strength.
Programming to Support Access and Success of Native American Students Summary Report
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South Dakota School of Mines and Technology
Programming to Support Access and Success of Native American Students Summary Report

South Dakota School of Mines and Technology (SDSM&T) has at least 25 faculty members and staff who work with Native American initiatives and/or populations in pre-college, bridge, undergraduate, and graduate education efforts in some direct and concerted way. The following is a summary of programming and activities that are currently taking place on campus to support access and success for American Indian students:

**RECRUIMENT**

**AISES Pre-College Outreach**—SDSM&T’s chapter of the American Indian Science & Engineering Society (AISES) provides science and engineering fairs for places with high concentrations of American Indian children like the Black Hills Children’s Home and Rapid City Club for Boys. They also strive to strengthen AISES Region V, by assisting other institutions to develop associate AISES chapters. Currently, the AISES chapter has started the Tribal High School Outreach Project which provides reservation high schools with STEM focused demonstrations. The purpose is to build a foundation among American Indian youth to pursue higher education, particularly in the STEM fields.

**Contact Person:** Jesse Herrera or Abena Songbird, the Office of Multicultural Affairs

**Admissions Outreach** – SDSM&T’s Department of Admissions makes concerted efforts to connect with high school students, school guidance counselors and math and science teachers at tribal high schools and high schools with high concentrations of Native American students in South Dakota and surrounding states. The purpose of these connections is to educate Native American parents and pre-college students about the value and process of entering higher education, as well as the benefits of a science or engineering education at SDSM&T.

Connection is accomplished in a variety of modalities including technology, media and literature, but primarily through in-person contact such as: high school visits; college fairs (Mobridge, Eagle Butte, etc.); representation at Lakota Nations Invitational basketball tournament in Rapid City; collaboration with the SD GEAR UP summer program on SDSM&T campus; presentations to middle and high schools visiting the campus; collaboration with the AISEP program (see below); participation in Tiospaye luncheons and OMA networking luncheons (see below) to encourage and recruit current students to reach out to their home high schools, family and friends regarding education at SDSM&T.

**Contact Person:** Molly Frankl, Director of Admissions

**Embracing Science – From the ‘Field to the Fair’** - The ‘Field to the Fair’ addresses the underrepresentation of Native Americans in the geosciences by establishing and strengthening geosciences learning paths through Oglala Lakota College (OLC) and the South Dakota School of Mines and Technology (SDSM&T). ‘Field to the Fair’ addresses the proof-of-concept activities planned by OLC and SDSM&T to broaden Native American participation in Earth and Atmospheric Sciences education and career pathways. Efforts are aligned with the NSF’s congressional
mandate to promote equal opportunities in science and engineering to students of all ethnic backgrounds.

The learning paths proposed herein include participation in science focused seven-day summer field camp experiences followed by preparation of science projects for presentation at regional science fairs. The targeted population is 8th through 12th grade Native Americans in the region served by OLC’s 11 campus centers and SDSM&T. The theme addressed in a significant way through this collaborative project is the field experience approach, rather than the traditional classroom setting, followed by mentoring students in science projects preparation and community outreach through participation in local relevant Native American cultural events. ‘Field to the Fair’ program started with a seven-day summer camp (June 17-23, 2012) which exposed students to a variety of topics in the Earth and Atmospheric Sciences. The camp experiences lead participants to developing a topic that, in the fall 2012, grew into a science fair project. Throughout the fall 2012 school year, participants had by-monthly workshops on the SDSM&T campus. The goal for the proposed project was that the field-camp venue will provide Native American students exciting and relevant field experiences and exposure to working scientists and engineers.

Contact Person: Dr. Donna Kliche, Associate Professor ATM

**SD GEAR UP** is a year-round program funded by the US Dept. of Education that prepares American Indian K-12 students for college. SD GEAR UP is operated by the SD Dept. of Indian Education. SDSMT is privileged to partner with the program as the host site for the summer grade 6-12 component. The program just completed its 20th summer on the SDSMT campus. In 2012 the program and campus hosted over 275 GEAR UP students from all nine SD reservations as well as other schools.

Contact Person: Dr. Carter Kerk, Professor IE

Youth Programs (YP) offers a series of camps and classes for elementary, middle school and high school students to increase interest and knowledge about science, engineering and higher education. For 2013, there were over 150 American Indian students attending these offerings. Scholarships are also provided to American Indian students for these activities. In 2013 a total of $27,745 in scholarships were awarded to 53 students to attend camps and classes.

Contact Person: Shawna Delaney, Director, Youth Programs

**EPA Environmental Education Grant** – SDSM&T, in partnership with the Oglala Sioux Tribe’s Environmental Protection Program (EPP) and the Oglala Lakota College (OLC), was awarded $69,000 for an EPA Environmental Education Grant for the protection of water resources on the Pine Ridge Indian Reservation in South Dakota. The major aim of the proposed project is to meet the EPA’s Environmental Education Continuum through the development of a program that includes community participation in a local water quality education activity that will strive to: promote of awareness of water resource protection, educate K-12 and secondary students on the development and implementation of a water sampling plan, further educating these students on the analysis and interpretation of data to promote critical thinking, and ultimately lead to informed decision-making and environmental stewardship. Because of the educational focus on post-secondary and K-12 students at Tribal institutions, as well as the central role of
environmental educators from SDSM&T and environmental professionals at EPP, Tribal students will receive direct encouragement and demonstrations regarding the benefits of pursuing environmental careers. Students also will learn about and see first-hand the numerous benefits and rewards that can result from achieving environmental solutions, stewardship, and sustainability through the pursuit of their own environmental careers. In addition, through the development of a demonstration site in the second year of the proposed education program, the site will serve as a case study for “project based service learning” (PBSL) through an on-going NSF engineering educational effort titled “Oglala Lakota College/South Dakota State University/South Dakota School of Mines and Technology Pre-Engineering Education Collaborative” (OSSPEEC). Please contact Jennifer Benning, Scott Kenner, or J. Foster Sawyer for more information regarding the project.

Contact Person: Dr. Foster Sawyer

RETENTION/SUPPORT

South Dakota College Access Challenge Grant (SDCACG) – The South Dakota College Access Challenge Grant program (SDCACG) is administered by the South Dakota Department of Education. The SDCACG works with a diverse set of partners in select K-12 schools as well as institutions of higher education in the state including all Board of Regents (BOR) institutions, Tribal Colleges/Universities and Technical schools. All affiliated schools provide activities and services to underrepresented students and their families across South Dakota. SDCACG has a special emphasis on American Indian students due to their disproportionate representation in South Dakota’s higher educational system. Estimated program budget and average award size/duration are subject to the availability of funds. Currently, SDCACG is restructuring the grant award, thus funds have yet to be allocated this year. On campus, the Office of Multicultural Affairs works with these funds to support students.

Contact Person: Jesse Herrera or Abena Songbird, the Office of Multicultural Affairs

Bridge Program – Beginning in 2011, SDSM&T began an early arrival Bridge Program for incoming American Indian students including non-traditional and transfer students. At the start of the fall semester, students come to campus the week before classes begin to start the acclimation process to college life. The Office of Residential Life allows students to move in prior to official move-in day. During this time students will attend sessions to reinforce math skills, get oriented to their class schedule, get to know their advisors, be paired with mentors, build relationships with each other, and learn about how to be successful in college. Until this current year, if students participated in this program their books were covered through a book loan program. This program is funded through SDCACG. However, due to the SDCACG restructuring, aspects of the Bridge Program may be eliminated. This program is expected to serve up to 25 first year students this coming year, but will continue providing support throughout their time at SDSM&T.

Contact Person: Jesse Herrera or Abena Songbird, the Office of Multicultural Affairs

American Indian Peer Mentor Program – To ensure that no American Indian student feels isolated or unsupported, peer mentorship is being offered to all students who participate in the Bridge
Program as well as those who feel they could benefit from such a relationship. Mentors will provide guidance, connection and support throughout the first semester. The goal of the program is to positively impact retention rates of American Indian students. Related objectives are for minority students to have a successful and satisfactory first year, whether they are non-traditional or transfer students as well as to reinforce a Native support system. These goals will be measured as follows:

1. Self-report of mentee’s satisfaction with mentoring and first year experience
2. Continuation from first to second semester
3. Successful completion of academic year

**Contact Person: Jesse Herrera or Abena Songbird, the Office of Multicultural Affairs**

**NSF PEEC Grant** is a Pre-Engineering Education Collaborative with Oglala Lakota College, South Dakota State University, and SDSM&T. The program is designed for Native American students to complete their first two years of engineering education at Oglala Lakota College and then to complete their engineering education at a mainstream university in South Dakota. A primary component of the PEEC program includes project based service learning projects on the Pine Ridge Indian Reservation which enhances student engagement with Reservation communities and promotes hands-on undergraduate research opportunities involving important local and regional issues. Interaction with faculty from mainstream engineering universities at every stage of the student’s progression strengthens their engineering background and helps to prepare the students for successful completion of an engineering curriculum at a mainstream university. Summer research programs and continuous opportunities for mentoring from engineering faculty also are important components of the program. The grant is approved for a five year period with support levels of $825,000 to the South Dakota School of Mines & Technology, $825,000 to South Dakota State University, and $1,250,000 to Oglala Lakota College.

**Contact Person: Dr. Foster Sawyer, Assistant Professor GEOL, GEOE**

**Emergency Fund** – The Emergency Fund is intended for students with a dire financial need. The purpose is to assist students with unexpected expenses which may put them at risk for dropping out of school. Funds may be used to pay for vehicle repairs, utility bills, books, counseling, and other support. This fund has also helped many students who have encountered acute financial need due to illness or injury, or loss of a part-time job. Funds are accumulated from private donations. The Emergency Fund is open to all students including American Indian students.

**Contact Person: Dr. Patricia Mahon, Vice President, Dean of Student Affairs**

**American Indian Science & Engineering Society (AISES)** - SDSM&T has an award-winning AISES chapter that promotes excellence, leadership, and opportunities in education and professional development of students. AISES provides national and regional conferences, scholarships, job placement assistance, internships and coop opportunities, networking and social support, community service and involvement. Currently, the AISES chapter has submitted their bid to host the Region V conference in 2015. This will be the third time the chapter has hosted this conference. Recently, the AISES President, Domingo Tamayo was elected Region V Representative for the AISES National.

**Contact Person: Jesse Herrera or Abena Songbird, the Office of Multicultural Affairs**
The **Office of Multicultural Affairs (OMA)** provides direct student support services for all underrepresented students, especially American Indian students. These support services include, but are not limited to, scholarship alerts, internship/coop information, as well as providing opportunities for leadership and professional development. The OMA also provides leadership and helps to facilitate the coordination of programs to underrepresented groups, especially those related to American Indian students and culture. The office reaches out to all underrepresented populations; holds free student support lunches for networking and social support each semester; and coordinates honoring ceremonies for American Indian graduates. The OMA also collaborates with several departments across campus to promote a diverse and inclusive campus atmosphere.

**Contact Person: Jesse Herrera, Director of Office of Multicultural Affairs**

**American Indian Honoring Ceremony** – The OMA coordinates and sponsors the American Indian Honoring Ceremony which is a bi-annual event (based on graduating seniors) established in December 2008. This is a special ceremony meant to celebrate and honor SDSM&T Native graduates by providing a traditional meal for graduates, family and invited community. Speakers are drawn from faculty, staff, alumni, and tribal communities. The Honoring Ceremony includes an invocation, prayers, songs, tying of feather/plume for each graduate, star quilt in school colors, and scholarship support. Due to the growing number of American Indian graduates and the increase in cost this produces, the Honoring is being reevaluated to create a more sustainable ceremony in the future.

**Contact Person: Abena Songbird, Program Assistant II Office of Multicultural Affairs**

**Research Experiences for Undergraduates (REU)** – SDSM&T is host to the NSF REU “Back to the Future” Site. The REU site engages students in a funded 10-week summer undergraduate research experience. The site is open to students from all backgrounds that are interested in science and engineering. The theme of the site is Metallurgical/Materials engineering research, with many of the projects having historical, cultural, or artistic significance. Supplementary activities include many hands-on workshops involving art, history, and metallurgy some of which are led by local Lakota artists. The unique site activities may help to attract and retain underrepresented students. The site is in its sixth year with approximately 30% of the participants being Native American students. The program website is located at: [http://met.sdsmt.edu/reu/](http://met.sdsmt.edu/reu/). As part of the site activities, undergraduate students are involved in outreach activities that support ongoing programs that support Native American high school students such as the South Dakota GEAR-UP program and the UNITE program.

**Contact Person: Dr. Mike West, Department Head/Associate Professor MET**

**Tiospaye in Engineering and Tiospaye in Science** are two NSF-funded scholarship and academic support programs at SDSMT. The programs provide financial, academic, professional, cultural and social support for undergraduate science and engineering students. The students are provided weekly mentoring sessions, monthly mentoring with the director, weekly recitations in key classes, and biweekly lunches featuring programming for support in the five areas. During the Fall 2012 semester, the program supported 37 scholars. Since 2010, the program has graduated eight scholars, five of whom were women.

**Contact Person: Dr. Carter Kerk**
SCHOLARSHIPS

SDSM&T is a member of the All Nations Louis Stokes Alliance for Minority Participation headquartered at Salish Kootenai College. The program provides merit-based scholarships for up to $900 per semester, as well as travel funds for students to attend professional conferences. SDSMT was asked to not request funding in 2012, but will fund students again in 2013.

Tiospaye in Science & Tiospaye in Engineering – Each of these NSF-funded grants scholarship up to 20 students with up to $8000 per year for four years (based on need). The long range plan is to replace NSF funding with industry funding to ensure continuance after the project period has expired.

Scholarships—In addition to the above programs, SDSM&T has sought out and awarded through our Foundation over $43,000 in scholarships. These figures do not include the Tiospaye Scholarship, PELL Grant, departmental scholarships, work study, or other outside scholarships.

Scholarships include:

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<th>Scholarship Fund</th>
<th>Amount</th>
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</table>

**Total** 43,950.00

**ACS Scholars Scholarship** – students from a minority population are eligible for a scholarship from the American Chemical Society. This scholarship is promoted to SDSM&T students through our chemistry department.
OTHER RESOURCES

SDSMT is the lead institution of the NASA South Dakota Space Grant Consortium (SDSGC). SDSGC seeks to expand opportunities for Native Americans in particular through education, research, and public services in the fields of aerospace, earth science, and supporting STEM disciplines. The goal of the SDSGC Fellowship/Scholarship program is “To administer a Fellowship/Scholarship program that offers educational and research opportunities to students from diverse backgrounds who are pursuing degrees in fields of STEM that align with NASA’s mission and those of SDSGC members and affiliates.” SDSGC’s Diversity goal is “To model diversity in all Consortium programs and activities, with an emphasis on Native Americans, which make up the state’s largest minority group.” SDSGC provided $1,561,500 in scholarships and fellowships to 505 students at nine South Dakota public, private, and tribal colleges/universities from FY2005-2014 and annually meets its objective of providing at least 10% of its awards to minority students; most of whom are Native American. Several Native American students at SDSM&T have conducted 10-week summer research internships at NASA Centers. The first Native American to graduate from SDSM&T with a Ph.D. was largely supported by NASA funding. For at least the last thirteen years, SDSGC provided funding and staff for NASA-related STEM programs as part of the curriculum offered through the “South Dakota GEAR UP Honors Program” held on the campus of SDSMT each summer.

Contact Person: Thomas Durkin

SDSM&T is the lead institution of the South Dakota NASA EPSCoR Program. South Dakota NASA EPSCoR was selected for funding under the 2011 Minority-Serving Institution Faculty Engagement Competition. The funded project is titled “Optimal Power and Relay Selection in Wireless Relay Networks.” Funds of ~$250,000 will significantly improve research and education collaboration between electrical and computer engineers at Oglala Lakota College, South Dakota School of Mines and Technology, and South Dakota State University. The research will be further coordinated with NASA’s Johnson Space Center, the Jet Propulsion Laboratory, and the Minority University Research and Education Program. The technical focus of the research will be optimization of power and relay selection in wireless relay networks (WRNs). The ever increasing demand for high data rate services has resulted in a significant amount of energy consumption by the communication system components. In deep space exploration, it is even more critical that power consumption by the communication system be minimized. Given the obvious need to reduce energy consumption, the fundamental challenge is how to maintain adequate coverage, quality of service, and reliability. The research will investigate and optimize parameters of WRNs to address these challenges for space communications and power conservation.

Contact Person: Dr. Edward Duke

Civil-Environmental Engineering Department has faculty involved in the NSF-sponsored pre-engineering grant with Foster Sawyer in GEOE, and another EPA-sponsored project; both are described below.

Pre-engineering Collaboration with Oglala Lakota College (OLC) - This project establishes collaborative offerings of gateway and bottleneck courses that occur in the first two years of engineering curricula coupled with hands-on laboratory and service-learning experiences. Courses
will be offered on the Pine Ridge Reservation to increase Native American student retention in pre-engineering and engineering programs across South Dakota. Civil engineering, geological engineering, and environmental engineering fields are the focus of this pilot project. Curricula designed for the program include classroom instruction at all three campuses, online classes, real world experiences through service learning projects, and extensive interaction with cultural and community leaders. The PI for the project is Dr. Duane Hrncir; Dr. Foster Sawyer is the project leader, in collaboration with Dr. Jennifer Benning at SDSM&T and faculty at SDSU.

Protecting Water Resources on the Pine Ridge Indian Reservation - Dr. Jennifer Benning, Dr. Scott Kenner and Dr. Foster Sawyer, in partnership with the Oglala Sioux Tribe Environmental Protection Program (OST EPP) and the Oglala Lakota College (OLC) are working with the U.S. Environmental Protection Agency on an environmental education project. Protecting water resources through stewardship on the South Dakota Pine Ridge Indian Reservation is the long-term project goal. The objective of this project is to educate the public, students, and OST staff on watershed impacts and management practices and encourage young students to pursue education in a field related to watershed management. Ultimately, effective watershed management requires knowledge of how land use practices can impact water quality. SDSM&T is partnering with OST EPP to provide education at a variety of levels, including financially supporting high school and OLC students to work on developing and implementing a watershed-monitoring program.

In addition, senior design students are working on projects related to the Thunder Valley Development Regenerative Community initiative on Pine Ridge. Also, we have initiated an articulation agreement with United Tribes Technical College to facilitate transfer of their environmental science AA degree recipients into our BS Civil Engineering with Environmental Engineering Emphasis

Contact Person: Dr. Molly Gribb

Chemical and Biological Engineering Department worked with students from Crow Creek and Lower Brule high schools on educational/outreach activities involving “Biofuels from Extremophiles”. Research scientist Dr. Sudhir Kumar and Associate Professor Dr. Rajesh Sani went to Crow Creek and Lower Brule tribal high schools, South Dakota in October 2011. Their tour was facilitated by Peggy Norris of Sanford Laboratory. This was part of the outreach activity and purpose was to interact with students. Also, to teach them basics of microbiology and biofuels along with hands on experimental training. For this purpose they carried their laboratory equipment (spectrophotometer, incubator, and hot plate), chemicals, grass slurry, glassware, and DUSEL enzymes with them to Crow Creek and Lower Brule tribal high schools.

In both the schools, Dr. Sani gave an introductory lecture about extremophilic microbes and their industrial applications. Students were happy to know about different types of microbes and their applications in biofuel area. Then this was followed by experimental session for the students. In Crow Creek, there was interaction with three batches of 10th and 11th standard whereas in Lower Brule, there was interaction with four batches of students.

Contact Person: Dr. Robb Winter
**Apex Gallery** – At least one Native American artist exhibit is featured in the Apex Gallery every year.

**Contact Person: Deborah Mitchell, Director of APEX Gallery**

**Museum of Geology** – Sally Shelton, Associate Director of the Museum, is helping to teach an ongoing paleontology monitoring class at Cheyenne River, which includes a session at the Museum’s Paleontology Research Laboratory. This is intended to serve as a laboratory for any of our Lakota colleagues who need a place for fossil preparation and curation.

The PRL labs have been used by GEAR-UP every summer since 2011 (the first year that the lab was fully open). Staff provides information on paleontology work in the field and lab as part of that program.

Museum curator Darrin Pagnac has developed a presentation on the Native American sources of many paleontological species names; this was presented at the Homestake-Adams Research and Curation Center in Deadwood in early 2014 and will be presented on campus in April 2014.

Discussion continues with several of the tribal governments on a project to provide Lakota labeling in our exhibits.

We continue to work with the paleontology/earth sciences program at Oglala Lakota College. We have donated over 30 boxes of books and journals to the OLC program in 2014.

We continue to manage fossils from South Dakota reservation lands, notably Pine Ridge, Rosebud, and Crow Creek, working with THPO and other tribal government representatives to determine the best way to store and care for these respectfully. At the moment, we are in consultation with the InterTribal Buffalo Council regarding buffalo skulls removed from the Missouri River after the flooding in 2011. We hope to host a meeting on these specimens in 2014 so that the buffalo tribes can advise us on the best course of action for these skulls.

Our hope is to provide program resources in order to encourage all Native American students seeking certification for paleontology monitoring and mitigation jobs under the new Paleontology Resources Preservation Act. Paleontology resource management issues are extremely important on most of the tribal lands in the state. The course we have developed here is, as far as we can tell, the only one of its kind in the country. We will be hosting the 10th Conference on Fossil Resources here in Rapid City in May 2014, and invite everyone interested in tribal fossil lands issues to join us at this meeting.

**Contact Person: Laurie Anderson, Director of the Museum of Geology**

**Moving Diversity Forward**


“The Office of Multicultural Affairs will aid in achieving and maintaining national prominence for
the recruitment, retention and graduation of underrepresented students. Working with other programs like Mines Advantage we strive to promote cultural proficiency as well as an inclusive campus climate that supports underrepresented populations and fosters respect for those with diverse backgrounds.”

The South Dakota Board of Regents Factbook for the fiscal year of 2014 shows that American Indian students comprise of 3.64% (96 AI students) of the total student body (2,640) in the fall 2013. In comparison to the previous year, there was a slight decrease from 4.17% (101 AI students) in fall 2012. Also in fall 2013, there were four American Indian students pursuing graduate degrees.

SDSM&T has an enrollment goal of 5% (or 175 of 3500) American Indian undergraduates by 2020. There is also a goal to have at least seven American Indian graduate students by 2020 as well. As coordinated efforts continue to have an impact and demonstrate what is achievable, American Indian enrollment goals may be adjusted.

SDSM&T operates through Strategic Priorities each with implications for American Indian support and access.

Prepare and educate an expanding and increasingly diverse student body – The Mines 2020 vision sets the goal of a total undergraduate enrollment at 3,500 students. A Native American presence of 5% will mean 175 Native American undergraduates on campus.

Reinforce and increase our research enterprise to elevate educational outcomes and economic development – Expanding the university’s infrastructure to support research as a primary enterprise of the institution. There are several service learning projects mentioned above involving American Indian students taking place on tribal reservations. In regard elevating educational outcomes, current and future graduate programs are designed to address and solve problems faced by tribal reservations. Many of these issues are especially addressed through the Civil and Environmental, and Geological Engineering graduate and research programs. Many of these pertinent to tribal communities are being produced.

Invest in human resources to move the institution forward – It is important to continue recruiting and retaining diverse faculty and staff. Faculty and staff with diverse backgrounds help to bring new ideas and methods to our rapidly changing country. This also means recognizing and rewarding employees for implementing the university’s strategic priorities. Employees who are able to incorporate aspects of multiculturalism into their classrooms or department will help to create a more welcoming campus climate allowing students of color one less obstacle when moving forward. The OMA is committed to increasing cultural proficiency on campus by inviting speakers and conducting sessions or workshops based on multiculturalism. The Intercultural Development Inventory (IDI) is an instrument meant to assess, address, and develop a plan to better develop campus cultural proficiency.

Define and acquire the critical resources to accomplish shared vision and strategic priorities through enhanced partnerships – As noted above, resources for American Indian initiatives are continually sought out and secured from a wide range of entities on and off campus. In addition to
the scholarship amounts mentioned earlier, in the 2012-2013 academic year, the Office of Multicultural Affairs and AISES secured over $6,000 in external funds for American Indian student support (not including scholarship funds):

- External funding for AISES students to attend national and regional conferences exceeded $6000.
- $3,750 from 3M for student support initiatives
- $2000 from the Smith-Ramsey Foundation for student support

Ensure a legacy of excellence through dedication to continuous quality improvement – Through the many initiatives noted above, SDSM&T is intentionally creating programs to promote inclusion among students as well as faculty and staff. Through the Mines Advantage program students are encouraged to expand their global and cultural understanding. For faculty and staff, the IDI is meant to address the areas of need in regard to campus cultural proficiency.

An integral part of all strategic planning has been the development of a campus master plan for facilities expansion and improvement. Included in the ongoing discussion of this master plan is the proposal for a Multicultural Center. The purposes of the center would be to create a center of support for our American Indian students and other minority students amidst the dominant culture.
Contact List

1. Jesse Herrera, Director of the Office of Multicultural Affairs: OMA, AISES, Bridge
2. Molly Frankl, Director of Admissions – Admission Outreach
3. Dr. Donna Kliche, Associate Professor ATM – “Field to the Fair”
4. Dr. Carter Kerk, Professor IE – GEAR UP, ANLSAM, Tiospaye, Assistant to the Provost for Native American Initiatives
5. Shawna Delaney – Director, Youth Programs
6. Dr. Jennifer, Assistant Professor CEE – OSSPEEC
7. Dr. Scott Kenner, Professor CEE – OSSPEEC
8. Dr. Foster Sawyer, Assistant Professor GEOL, GEOE – EPA, OSSPEEC
9. Dr. Patricia Mahon, Vice President of Student Affairs/Dean of Students – Emergency Fund
10. Dr. Robb Winter, Department Head/Professor Chemical and Biological Engineering Department (CBE) – AISES
11. Abena Songbird, Program Assistant Office of Multicultural Affairs – AISES, Bridge
12. Dr. Molly Gribb, Department Head/Professor Civil-Environmental Engineering Department - CEE Department
13. Dr. Pat Beu, Director of Retention and Testing – Retention, Bridge
14. Dr. Mike West, Department Head/Associate Professor MET – Summer REUs
15. Dr. Stuart Kellogg, Department Head/Pietz Professor (IE) – Tiospaye
16. Brad Johnson, Vice President of Development – Foundation
17. Dr. Richard Sinden, Department Head/Professor – ACS
18. Thomas Durkin, Deputy Director & Outreach Coordinator – SDSGC
19. Dr. Edward Duke, Manage of Analytical Services/Professor – SD EPSCoR
20. Deborah Mitchell – Director of APEX Gallery
21. Sally Shelton – Collections Manager/Instructor
22. Laurie Anderson, Director of the Museum of Geology
23. Dr. Mike Gunn, Associate Provost for Academic Affairs and Enrollment Management – Scholarship Committee
24. Dr. Duane Hrncir – Provost/Vice President for Academic Affairs
25. Dr. Heather Wilson – President

Compiled by Kaylynn Two Bulls, Office of Multicultural Affairs Intern
Programming to Support Access and Success of Native American Students Summary Report 2014 – 2015
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South Dakota School of Mines and Technology
Programming to Support Access and Success of Native American Students Summary Report

South Dakota School of Mines and Technology (SDSM&T) has at least 25 faculty members and staff who work with Native American initiatives and/or populations in pre-college, bridge, undergraduate, and graduate education efforts in some direct and concerted way. The following is a summary of programming and activities that are currently taking place on campus to support access and success for American Indian students:

**RECRUIMENT**

**AISES Pre-College Outreach**—SDSM&T’s chapter of the American Indian Science & Engineering Society (AISES) provides science and engineering experiences for places with high concentrations of American Indian children such as the Black Hills Children’s Home. They also strive to strengthen AISES Region V, by assisting other institutions to develop associate AISES chapters. AISES members work with SDSM&T faculty with a science based program at Central High School. The purpose is to build a foundation among American Indian youth to pursue higher education, particularly in the STEM fields.

**Contact Person:** Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

**Admissions Outreach** – SDSM&T’s Department of Admissions makes concerted efforts to connect with high school students, school guidance counselors and math and science teachers at tribal high schools and high schools with high concentrations of Native American students in South Dakota and surrounding states. The purpose of these connections is to educate Native American parents and pre-college students about the value and process of entering higher education, as well as the benefits of a science or engineering education at SDSM&T.

Connection is accomplished in a variety of modalities including technology, media and literature, but primarily through in-person contact such as: high school visits; college fairs (Mobridge, Eagle Butte, etc.); representation at Lakota Nations Invitational basketball tournament in Rapid City; collaboration with the SD GEAR UP summer program on SDSM&T campus; collaboration with the Jump Start Program Access Advisors and the SDSM&T Jump Start Retention Advisor; presentations to middle and high schools visiting the campus; participation in Tiospaye luncheons and OMA networking luncheons (see below) to encourage and recruit current students to reach out to their home high schools, family and friends regarding education at SDSM&T.

**Contact Person:** Molly Moore, Assistant Vice Provost for Enrollment Management and Director of Admissions

**Embracing Science – From the ‘Field to the Fair’** - The ‘Field to the Fair’ project is funded through the National Science Foundation and addresses the underrepresentation of Native Americans in the geosciences. Its purpose is to broaden Native American participation in Earth and Atmospheric Sciences education and career pathways. This project was proposed by the South Dakota School of Mines and Technology (SDSM&T) in collaboration with the faculty from Oglala Lakota College
‘Field to the Fair’ addresses the proof-of-concept activities planned by OLC and SDSM&T. Efforts are aligned with the NSF’s congressional mandate to promote equal opportunities in science and engineering to students of all ethnic backgrounds.

‘Field to the Fair’ program started with a seven-day summer camp in June 17-23, 2012, which exposed students to a variety of topics in the Earth and Atmospheric Sciences. The camp experiences lead participants to developing a topic that, in the fall 2012, grew into a science fair project. Throughout the fall 2012 and spring 2013, participants had by-monthly workshops on the SDSM&T campus. The prepared science projects were entered to compete for prizes at the 59th Annual High Plains Regional Science and Engineering Fair, held in March 2014 at SDSM&T. Although no prizes were won, this was a great opportunity for the students to be part of a science fair of such magnitude (> 350 projects and > 500 participants).

This program continued during 2014 – 2015 with Native students from Central High School participating. The goal was to continue mentoring high school students in science project preparation during the fall 2014 and spring 2015 (on the SDSM&T campus), and participate at the 60th Annual High Plains Regional Science And Engineering Fair, held in March 2015 at SDSM&T. Ms. Harriet Brings, Native American Lakota Language teacher, Rapid City Central High School was again invited to be part of the project during the 2014-2015 school year. Ms. Brings plays a major role in keeping participating students excited about their work and about learning Lakota Language and culture along the way. In addition, three Native students currently enrolled at SDSM&T were selected to mentor the high school students during science project preparation. These science projects were entered to compete for prizes at the 60th Annual High Plains Regional Science and Engineering Fair, held on March 23rd, 2015 at SDSM&T. Out of four projects entered in the senior division competition, three of them got awarded with prizes: 2nd place in Physical Sciences, 2nd place in Social Sciences, and the special award from the ASU Rob and Melani Walton Sustainability Solutions Initiatives. These accomplishments are remarkable in view of the fact that this year’s regional fair was the largest ever.

Contact Person: Dr. Donna Kliche, Associate Professor Mathematics and Computer Science

**Green Chemistry Education Workshops** – The current interest of Dr. Filipova’s research is to offer economically disadvantaged elementary, middle and high school students an opportunity to broaden their education in the field of science and to consider new career paths as they approach critical turning points in their lives. Undergraduate students (Jin Kim, Jevin Meyerink and Anneka Swedlund) have been heavily involved in the development of hands-on chemistry laboratory experiments to take to elementary, middle and high schools in the Rapid City area and to the Pine Ridge Indian Reservation. The aim of these visits is to educate students about how chemistry relates to the ‘real world’ and promote excitement and an appreciation for both science and higher education.

Currently Dr. Filipova is working on a project “Green Chemistry Education Workshop for Middle School Teachers in the Rapid City Area” funded by the NASA South Dakota Space Grant Consortium (SDSGC). Another project also included the SDSMT BioCon Outreach Activity funded by the National Science Foundation with an emphasis to develop collaborations with Pine Ridge Middle school. The first of 15 Green Chemistry Education Workshops were held on June 5-7, 2014.
at SDSM&T’s CABS sponsored by SDSMT NASA program. The latest trends in green chemistry and sustainable energy were presented to the teachers by chemistry professors Dr. Filipova and Dr. Smirnova, along with details on seven experiments to conduct in their classrooms. During the outreach period prior to the workshop, two science teachers from the Pine Ridge Indian Reservation (Ms. Ptesanwin Poor Bear and Ms. Linda Yellow Boy) expressed great interest in attending the workshop, but were unable to attend. Collaborative efforts were again made with Ms. Yellow Boy by CABS faculty in September 2014, when undergraduate student assistant Jin Kim and Dr. Filipova made the first visit to Pine Ridge Middle School. The next workshop was held at Loneman Day School with Ms. Poor Bear and her 4th grade students. During these workshops, Dr. Filipova met with school teachers and counselors and discussed the urgent need of the science teachers, science education, and the issues that students from Pine Ridge Reservation struggle with.

Since September 2014, undergraduate students (Jin Kim, Jevin Meyerink) and Dr. Filipova organized a series of green chemistry workshops giving nearly forty presentations for more than hundred students at five Pine Ridge Indian Reservation schools (Pine Ridge Middle and Elementary Schools, Loneman Day School, Batesland School, and Red Shirt School). The program is completed at no cost to the host school and provides all materials. Visits to Pine Ridge Indian Reservation schools, all chemicals and materials are sponsored by NASA SDSGC program and SDSMT BioCon. In addition to the programs at the reservation schools, students and science teachers from Pine Ridge Reservation are given a rare chance to visit the campus of SDSM&T and perform hands-on experiments in CABS laboratories, mentored by undergraduate students (Jin Kim, Jevin Meyerink, Anneka Swedlund, Timothy Prohofsky, and Calvin Thomas). Between October 2014 and March 2015, the following numbers of students and teachers from five reservation schools participated in workshops at SDSM&T’s CABS lab: 1) 22 fourth grade students and two teachers including Ms. Poor Bear from Loneman Day School, 2) 48 elementary students and three science teachers from Pine Ridge Middle School, 3) 22 middle school students and two teachers from Batesland School, 4) 19 fifth grade students and one teacher from Pine Ridge Elementary School, and 5) 19 seventh grade students and one teacher from Pine Ridge Middle School.

Contact Person: Dr. Tsvetanka Filipova, Lecturer of Chemistry, Chemistry and Applied Biological Sciences

SD GEAR UP is a year-round program funded by the US Dept. of Education that prepares American Indian K-12 students for college. SD GEAR UP is operated by the SD Dept. of Indian Education. SDSMT is privileged to partner with the program as the host site for the summer grade 6-12 component. The program completed its 22nd summer in 2014 on the SDSMT campus and will be back for the 23rd year in 2015. In 2014 the program and campus hosted over 285 GEAR UP students from all nine SD reservations as well as other schools.

Contact Person: Dr. Carter Kerk, Professor of Industrial Engineering and Assistant to the Provost for American Indian Initiatives
RETENTION/SUPPORT

South Dakota College Access Challenge Grant (SDCACG) – The South Dakota College Access Challenge Grant program (SDCACG) is administered by the South Dakota Department of Education. The SDCACG works with a diverse set of partners in select K-12 schools as well as institutions of higher education in the state including all Board of Regents (BOR) institutions, Tribal Colleges/Universities and Technical schools. All affiliated schools provide activities and services to underrepresented students and their families across South Dakota. SDCACG has a special emphasis on American Indian students due to their disproportionate representation in South Dakota’s higher educational system. Estimated program budget and average award size/duration are subject to the availability of funds. SDCACG will end in August 2015.

Contact Person: Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

Bridge Program – Beginning in 2011, SDSM&T began an early arrival Bridge Program for incoming American Indian students including non-traditional and transfer students. At the start of the fall semester, students come to campus the week before classes begin to start the acclimation process to college life. The Office of Residential Life allows students to move in prior to official move-in day. During this time students will attend sessions to reinforce math skills, get oriented to their class schedule, get to know their advisors, be paired with mentors, build relationships with each other, and learn about how to be successful in college. If students participate in this program their books are covered through a book loan program. This program is expected to serve up to 25 first year students this coming year, but will continue providing support throughout their time at SDSM&T. Being that this program is funded through SDCACG August 2015 will be the last program to follow this structure.

Contact Person: Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

American Indian Peer Mentor Program – To ensure that no American Indian student feels isolated or unsupported, peer mentorship is being offered to all students who participate in the Bridge Program as well as those who feel they could benefit from such a relationship. Mentors will provide guidance, connection and support throughout the first semester. The goal of the program is to positively impact retention rates of American Indian students. Related objectives are for minority students to have a successful and satisfactory first year, whether they are non-traditional or transfer students as well as to reinforce a Native support system. These goals will be measured as follows:

1. Self-report of mentee’s satisfaction with mentoring and first year experience
2. Continuation from first to second semester
3. Successful completion of academic year

This is another SDCACG funded program and will continue on a volunteer basis after August 2015.

Contact Person: Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs
South Dakota Jump Start Program – The South Dakota Jump Start Program is a federally funded First in the World program designed to help students succeed in college by providing them a financial and academic “jump start”. This $3.6 million federal grant is shared among all seven public universities in South Dakota, including Oglala Lakota College. Eligible individuals include Native American and low-income students who have graduated from a South Dakota high school and want to attend college for the first time.

Participating students enter a summer campus-based experience prior to their freshman year of college to earn free college credits and have an opportunity to get acclimated to the campus. During the school year, students work with a South Dakota Jump Start advisor on campus to connect with resources, create a success plan, and participate in Jump Start events and activities. Once a student enters the Jump Start Program they will be tracked through the end of their third year in school. The ultimate goal behind this program is to give students a Jump Start on college success by providing personnel and resources to give students momentum toward graduation.

Contact Person: Jesse Herrera, Director or Kaylynn Two Bulls, Jump Start Advisor - Multicultural Affairs

NSF PEEC Grant is a Pre-Engineering Education Collaborative with Oglala Lakota College, South Dakota State University, and SDSM&T. The program is designed for Native American students to complete their first two years of engineering education at Oglala Lakota College and then to complete their engineering education at a mainstream university in South Dakota. A primary component of the PEEC program includes project based service learning projects on the Pine Ridge Indian Reservation which enhances student engagement with Reservation communities and promotes hands-on undergraduate research opportunities involving important local and regional issues. Interaction with faculty from mainstream engineering universities at every stage of the student’s progression strengthens their engineering background and helps to prepare the students for successful completion of an engineering curriculum at a mainstream university. Summer research programs and continuous opportunities for mentoring from engineering faculty also are important components of the program. The grant is approved for a five year period with support levels of $825,000 to the South Dakota School of Mines & Technology, $825,000 to South Dakota State University, and $1,250,000 to Oglala Lakota College.

Contact Person: Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering, Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering

American Indian Science and Engineering Society/American Indian Research and Education Initiative/U.S. Department of Energy Grant is a program designed to provide educational and research opportunities in the energy field to Native American students. The grant is managed collaboratively by Sinte Gleska University (SGU) and SDSM&T. The focus of the grant project work is on investigating and evaluating affordable energy alternatives for the residents of the Rosebud Reservation in south central South Dakota. Activities for the grant to date have focused on evaluation of hydrocarbon resources in the Niobrara Formation and Pierre Shale, as well as geothermal resources in the vicinity of the Rosebud Reservation. Continuous coring operations in 2014 and 2015 have provided hands-on field experience for students from both Sinte Gleska University and SDSM&T and are producing one of the most significant datasets for these formations in existence. This grant program has received approximately $25,000 per year for
SDSM&T and $35,000 per year for SGU for the past three years.

**Contact Person:** Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering

**HUD Designing for People and Place: Sustainable & Affordable Housing for the Pine Ridge Indian Reservation** is a project lead by the University of Colorado Boulder, through partnership with Oglala Lakota College and the South Dakota School of Mines and Technology. It is an education-based research project, promoting service-learning, to bring together stakeholders and students to offer the Oglala Lakota Nation viable models of sustainable, culturally-appropriate, affordable, energy-efficient housing. The Oglala Sioux Housing Authority observed that there is a need for 4,000 new homes to combat homelessness on Pine Ridge.

**Contact Person:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering

**Sustainable Food Production for the Pine Ridge Indian Reservation** is a multi-disciplinary design team project that partners faculty and students from South Dakota School of Mines and Technology with faculty and students at the Oglala Lakota College to design, implement, and test the design and business plan development of sustainable food production systems. The US Department of Agriculture has classified the Pine Ridge Reservation as a “food desert,” due to physical and economic barriers that limit the population’s access to healthy foods.

**Contact Person:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering; Dr. Daniel Dolan, Professor Mechanical Engineering

**Emergency Fund** – The Emergency Fund is intended for students with a dire financial need. The purpose is to assist students with unexpected expenses which may put them at risk for dropping out of school. Funds may be used to pay for vehicle repairs, utility bills, books, counseling, and other support. This fund has also helped many students who have encountered acute financial need due to illness or injury, or loss of a part-time job. Funds are accumulated from private donations. The Emergency Fund is open to all students including American Indian students.

**Contact Person:** Dr. Pat Mahon, Vice President for Student Development and Dean of Students

**American Indian Science & Engineering Society (AISES)** - SDSM&T has an award-winning AISES chapter that promotes excellence, leadership, and opportunities in education and professional development of students. AISES provides national and regional conferences, scholarships, job placement assistance, internships and coop opportunities, networking and social support, community service and involvement. The SDSM&T AISES chapter hosted the Region V Conference during March 2015. This was the third time the chapter has hosted this conference on campus.

**Contact Person:** Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

The **Office of Multicultural Affairs (OMA)** provides direct student support services for all underrepresented students, especially American Indian students. These support services include, but are not limited to, scholarship alerts, internship/coop information, as well as providing opportunities for leadership and professional development. The OMA also provides leadership and helps to facilitate the coordination of programs to underrepresented groups, especially those related to American Indian students and culture. The office reaches out to all underrepresented
populations; holds free student support lunches for networking and social support each semester; and coordinates honoring ceremonies for American Indian graduates. Programming promotes diversity and inclusion initiatives for students, staff, and faculty. The OMA also collaborates with several departments across campus to promote a diverse and inclusive campus atmosphere.

**Contact Person:** Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

**American Indian Honoring Ceremony** – The OMA coordinates and sponsors the American Indian Honoring Ceremony established in December 2008. This is a special ceremony held in the spring the day before campus commencement. It celebrates and honors SDSM&T Native graduates by providing a traditional meal for graduates, family, and invited community. Speakers are drawn from faculty, staff, alumni, and tribal communities. The Honoring Ceremony includes an invocation, prayers, songs, and tying of eagle feather/plume for each graduate. Due to the growing number of American Indian graduates and the increase in cost this produces, the Honoring is being reevaluated to create a more sustainable ceremony in the future.

**Contact Person:** Abena Songbird, Program Assistant II – Multicultural Affairs

**Research Experiences for Undergraduates (REU)** – SDSM&T is host to the NSF REU “Back to the Future” Site. The REU site engages students in a funded 10-week summer undergraduate research experience. The site is open to students from all backgrounds that are interested in science and engineering. The theme of the site is Metallurgical/Materials engineering research, with many of the projects having historical, cultural, or artistic significance. Supplementary activities include many hands-on workshops involving art, history, and metallurgy some of which are led by local Lakota artists. The unique site activities may help to attract and retain underrepresented students. The site is in its sixth year with approximately 30% of the participants being Native American students. The program website is located at: [http://met.sdsmt.edu/reu/](http://met.sdsmt.edu/reu/) As part of the site activities, undergraduate students are involved in outreach activities that support ongoing programs that support Native American high school students such as the South Dakota GEAR-UP program and the UNITE program.

**Contact Person:** Dr. Mike West, Department Head/Associate Professor Materials and Metallurgical Engineering

**NSF Tiospaye Scholar Program** has received three NSF S-STEM awards in excess of $1.8M of which 85% goes for scholarships for American Indian students in engineering, science, and mathematics. Applicants must be academically talented and financially needy. The program provides support in five areas: financial, academic, professional, cultural, and social. The students are provided weekly mentoring sessions, monthly mentoring with the director, weekly recitations in key gateway classes including algebra, trigonometry, calculus, differential equations, chemistry, physics, computer programming, statics, and dynamics. Bi-weekly professional lunch meetings feature programming in the five areas of support. During the Spring 2015 semester, the program supported 27 scholars. Since 2010, the program has graduated 22 scholars, nine of whom were women. Engineering students may receive up to $8K per year in scholarships and science/mathematics students may receive up to $10K per year.

**Contact Person:** Dr. Carter Kerk, Professor of Industrial Engineering and Assistant to the Provost for American Indian Initiatives
SCHOLARSHIPS
SDSM&T is a member of the All Nations Louis Stokes Alliance for Minority Participation headquartered at Salish Kootenai College. The program provides merit-based scholarships for up to $1050 per semester, as well as travel funds for students to attend professional conferences. Since 2009, 49 students have received over $67K in stipends.

Scholarships—In addition to the above programs, SDSM&T has sought out and awarded through our Foundation over $42,000 in scholarships. These figures do not include the Tiospaye Scholarship, PELL Grant, departmental scholarships, work study, or other outside scholarships.

Scholarships include:

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<th>AY 14-15 Available</th>
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<tr>
<td>AISES SCHOLARSHIP FUND</td>
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<td>CRAZY HORSE - CHARLES MORSS</td>
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<td>CRAZY HORSE - LT COMM HERRINGTON</td>
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<td>CRAZY HORSE - PAUL MUEHL</td>
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<td>HINS, ALLAN NATIVE AMERICAN</td>
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<td>JOBE, LOWELL A.</td>
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<td>Logar Scholarship (Edward W.)</td>
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<td>SHEDD, JACK (JOHN) &amp; WINNIE</td>
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<td>VUCUREVICH, JOHN T. (MINORITY)</td>
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<td><strong>Total</strong></td>
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Scholarships for African American, Hispanic, and American Indian students in the chemical sciences - ACS awards renewable scholarships to underrepresented minority students who want to enter the fields of chemistry or chemistry-related fields. Awards of up to $5,000* are given to qualified students. African American, Hispanic, or American Indian high school seniors or college freshman, sophomores, or juniors pursuing a college degree in the chemical sciences or chemical technology are eligible to apply.

Contact Person: Dr. Justin Meyer, Senior Lecturer Chemistry and Applied Biological Sciences
OTHER RESOURCES
SDSM&T is the lead institution of the NASA South Dakota Space Grant Consortium (SDSGC). SDSGC seeks to expand opportunities for Native Americans in particular through education, research, and public services in the fields of aerospace, earth science, and supporting STEM disciplines. The goal of the SDSGC Fellowship/Scholarship program is “To administer a Fellowship/Scholarship program that offers educational and research opportunities to students from diverse backgrounds who are pursuing degrees in fields of STEM that align with NASA’s mission and those of SDSGC members and affiliates.” SDSGC’s Diversity goal is “To model diversity in all Consortium programs and activities, with an emphasis on Native Americans, which make up the state’s largest minority group.” SDSGC provided $1,561,500 in scholarships and fellowships to 505 students at nine South Dakota public, private, and tribal colleges/universities from FY2005-2014 and annually meets its objective of providing at least 10% of its awards to minority students; most of whom are Native American. Several Native American students at SDSM&T have conducted 10-week summer research internships at NASA Centers. The first Native American to graduate from SDSM&T with a Ph.D. was largely supported by NASA funding. For at least the last thirteen years, SDSGC provided funding and staff for NASA-related STEM programs as part of the curriculum offered through the “South Dakota GEAR UP Honors Program” held on the campus of SDSMT each summer.

Contact Person: Thomas Durkin Deputy Director of SD Space Grant Consortium

SDSM&T is the lead institution of the South Dakota NASA EPSCoR Program, which focuses on strengthening South Dakota’s research infrastructure. South Dakota NASA EPSCoR was selected for funding under a 2014 NASA Cooperative Agreement Notice for a three-year, $750,000 major research project titled: “High Performance and Durable Lithium-ion Battery for NASA Space Applications”. The project addresses the grand challenge of energy generation and storage related to lithium-ion batteries. As a part of the project, a novel educational plan focused on training American Indian students in sustainable energy has been developed. It involves two K-12 schools on South Dakota Indian reservations (Red Shirt and Red Cloud Schools), Oglala Lakota College (a Tribal College), the Office of Indian Education in Rapid City Schools, and the Office of Multicultural Affairs at SDSM&T.

Contact Person: Dr. Edward Duke SD Space Grant Consortium, Manager of Analytical Services Engineering and Mining Experiment Station, Professor Geology and Geological Engineering

Conference on Science at the Sanford Underground Research Facility – In meeting announcements and invitations, we have emphasized, and we will continue to emphasize, the possibility of travel support for junior scientists as well as scientists who are members of groups underrepresented in science and engineering (e.g., underrepresented minorities, women, and persons with disabilities). An application form for this support is available on the conference website. Furthermore, a lower-cost housing option, using dorm rooms on campus, is planned to encourage the participation of students and others on tight budgets. The poster session with prizes will provide additional motivation for the participation of young scientists.

In addition, we are working with the SDSMT Tiospaye Scholar program and the SDSMT chapter of the American Indian Science and Engineering Society (AISES) to encourage participation of Native American students, scientists, and engineers in the conference. Dr. Corwin promoted this
conference at the monthly Tiospaye lunch in February. We are working with the president of the SDSMT AISES chapter in order to promote the conference via the local, regional, and national components of AISES.

Contact Person: Dr. Luke Corwin, Assistant Professor, Physics

Chemical and Biological Engineering Department worked with students from Crow Creek and Lower Brule high schools on educational/outreach activities involving “Biofuels from Extremophiles”. Research scientist Dr. Sudhir Kumar and Associate Professor Dr. Rajesh Sani went to Crow Creek and Lower Brule tribal high schools, South Dakota in October 2011. Their tour was facilitated by Peggy Norris of Sanford Laboratory. This was part of the outreach activity and purpose was to interact with students. Also, to teach them basics of microbiology and biofuels along with hands on experimental training. For this purpose they carried their laboratory equipment (spectrophotometer, incubator, and hot plate), chemicals, grass slurry, glassware, and DUSEL enzymes with them to Crow Creek and Lower Brule tribal high schools.

In both the schools, Dr. Sani gave an introductory lecture about extremophilic microbes and their industrial applications. Students were happy to know about different types of microbes and their applications in biofuel area. Then this was followed by experimental session for the students. In Crow Creek, there was interaction with three batches of 10th and 11th standard whereas in Lower Brule, there was interaction with four batches of students.

Contact Person: Dr. Robb Winter, Department Head/Professor Chemical and Biological Engineering

Apex Gallery – The Apex Gallery is always on the look out to feature American Indian artists. At least one exhibit every year is preferred.

Contact Person: Deborah Mitchell, Associate Professor Humanities, Director of APEX Gallery

Museum of Geology – Sally Shelton, Associate Director of the Museum, is helping to teach an ongoing paleontology monitoring class at Cheyenne River, which includes a session at the Museum’s Paleontology Research Laboratory. This is intended to serve as a laboratory for any of our Lakota colleagues who need a place for fossil preparation and curation. She is also working with a program with Red Cloud Indian School and agate Fossil Beds National Monument to develop a pre-college fossil program.

The PRL labs have been used by GEAR-UP every summer since 2011 (the first year that the lab was fully open). Staff provides information on paleontology work in the field and lab as part of that program.

Museum curator Darrin Pagnac has developed a presentation on the Native American sources of many paleontological species names.

Discussion continues with several of the tribal governments on a project to provide Lakota labeling in our exhibits. We continue to work with the paleontology/earth sciences program at Oglala Lakota College.
We continue to manage fossils from South Dakota reservation lands, notably Pine Ridge, Rosebud, and Crow Creek, working with THPO and other tribal government representatives to determine the best way to store and care for these respectfully. At the moment, we are in consultation with the InterTribal Buffalo Council regarding buffalo skulls removed from the Missouri River after the flooding in 2011.

Our hope is to provide program resources in order to encourage all Native American students seeking certification for paleontology monitoring and mitigation jobs under the new Paleontology Resources Preservation Act. Paleontology resource management issues are extremely important on most of the tribal lands in the state.

Contact Person: Laurie Anderson, Department Head/Professor Geology and Geological Engineering, Director of the Museum of Geology

Moving Diversity Forward
“The Office of Multicultural Affairs will aid in achieving and maintaining national prominence for the recruitment, retention and graduation of underrepresented students. Working with other programs like Mines Advantage we strive to promote cultural proficiency as well as an inclusive campus climate that supports underrepresented populations and fosters respect for those with diverse backgrounds.”

The South Dakota Board of Regents Factbook for the fiscal year of 2014 shows that American Indian students comprise of 3.40% (95 AI students) of the total student body (2,798) in the fall 2014. In comparison to the previous year, there was a slight decrease from 3.64% (96 AI students) in fall 2013. Also in fall 2014, there were four American Indian students pursuing graduate degrees and one pursuing a doctorate.

SDSM&T operates through Strategic Priorities each with implications for American Indian support and access.
Goal One Student Success: Prepare more undergraduate students for leadership in engineering and science – The American Indian population is among the highest minority population on campus. Within the state, SDSM&T has the second highest American Indian percentage of students. Through the programs listed above American Indian students will continue to succeed.

Goal Two Research: Increase research to prepare science and engineering experts, advance knowledge, and catalyze economic development – It is common in research proposals to include a section on how the research will impact the broader community. There are several service learning projects mentioned above involving American Indian students taking place on tribal reservations. Current and future graduate programs are designed to address and solve problems faced by tribal reservations. Many of these issues are especially addressed through the Civil and Environmental, and Geological Engineering graduate and research programs. Many of these pertinent to tribal communities are being produced.
Goal Three Facilities: Redevelop and expand needed living, learning, and research spaces – An integral part of all strategic planning has been the development of a campus master plan for facilities expansion and improvement. Included in the ongoing discussion of this master plan is the proposal for a Multicultural Center. The purposes of the center would be to create a center of support for our American Indian students and other minority students amidst the dominant culture.

Goal Four People: Recruit, develop, and retain excellent faculty and staff – It is important to continue recruiting and retaining diverse faculty and staff. Faculty and staff with diverse backgrounds help to bring new ideas and methods to our rapidly changing country. This also means recognizing and rewarding employees for implementing the university’s strategic priorities. Employees who are able to incorporate aspects of multiculturalism into their classrooms or department will help to promote new ideas and perspectives which in turn contributes to creating a more welcoming campus climate allowing students of color one less obstacle as they move forward. The OMA is committed to increasing cultural proficiency on campus by inviting speakers and conducting sessions or workshops based on multiculturalism. The Intercultural Development Inventory (IDI) is an instrument meant to assess, address, and develop a plan to better develop campus cultural proficiency.

Goal Five Administration: Responsibly steward financial and physical resources – With the help of SDSM&T Foundation, resources for American Indian initiatives are continually sought for and secured from a wide range of entities on and off campus. In addition to the scholarship amounts mentioned earlier, in the 2014-2015 academic year, the Office of Multicultural Affairs and AISES secured over $15,000 in external funds for American Indian student support (not including scholarship funds):

- $14,000 from external funding for the SDSM&T AISES chapter to host the AISES Region V Conference
- $5,000 from 3M for student support initiatives

Goal Six Development: Establish a robust culture of philanthropy to enable the university to sustain excellence – Through the many initiatives noted above, SDSM&T is intentionally creating programs to promote inclusion among students as well as faculty and staff. Through the Mines Advantage program as well as the GPI, students are encouraged to expand their global and cultural understanding. For faculty and staff, the IDI is meant to address the areas of need in regard to campus cultural proficiency. Through these initiatives there is an underlying message of service to the community and giving back to the university. Engaging students in this way creates loyalty now and long after they have graduated. By engaging alums, especially those of color, current students will be inspired to come back someday themselves.
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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Program</th>
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<tr>
<td>Anderson, Laurie</td>
<td>Department Head/Professor GEOL, GEOE, Director of MOG</td>
<td>Museum of Geology</td>
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<td>Benning, Jennifer</td>
<td>Assistant Professor CEE</td>
<td>NSF PEEC, HUD Designing for People and Place, Sustainable Food Production</td>
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<td>Corwin, Luke</td>
<td>Assistant Professor PHYS</td>
<td>Conference at SURF</td>
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<td>Duke, Edward</td>
<td>Manage of Analytical Services (EMES) /Professor GEOL, GEOE</td>
<td>South Dakota Space Grant Consortium</td>
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<td>Durkin, Thomas</td>
<td>Deputy Director &amp; Outreach Coordinator</td>
<td>South Dakota Space Grant Consortium</td>
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<td>Filipova, Tsvetanka</td>
<td>Lecturer Chemistry and Applied Biological Sciences</td>
<td>Green Chemistry Education Workshops</td>
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<td>Gunn, Mike</td>
<td>Vice Provost Enrollment Management</td>
<td>Scholarship Committee</td>
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<tr>
<td>Herrera, Jesse</td>
<td>Director of the Office of Multicultural Affairs</td>
<td>OMA, AISES, Jump Start, SDCACG, Bridge Program</td>
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<td>Johnson, Brad</td>
<td>Vice President of Development</td>
<td>Foundation</td>
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<td>Kellogg, Stuart</td>
<td>Department Head/Pietz Professor IE</td>
<td>Tiospaye</td>
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<tr>
<td>Kenner, Scott</td>
<td>Professor CEE</td>
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<tr>
<td>Kerk, Carter</td>
<td>Professor IE, Assistant to the Provost for Native American Initiatives</td>
<td>GEAR UP, ANLSAM, Tiospaye,</td>
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<td>Kliche, Donna</td>
<td>Associate Professor MCS</td>
<td>Embracing Science – “Field to the Fair”</td>
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<td>Mahon, Pat</td>
<td>Vice President for Student Development/Dean of Students Student Development</td>
<td>Emergency Fund</td>
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<td>Moore, Molly</td>
<td>Assistant Vice Provost for Enrollment Management/Director of Admissions</td>
<td>Admission Outreach</td>
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<td>Sawyer, Foster</td>
<td>Associate Professor GEOL, GEOE</td>
<td>EPA, NSF PEEC, AI Research and Education Initiative, US Dept. Energy Grant</td>
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<td>Shelton, Sally</td>
<td>Collections Manager MOG, Instructor GEOL, GEOE</td>
<td>Museum of Geology</td>
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<td>Sinden, Richard</td>
<td>Department Head/Professor for Chemistry and Applied Biological Sciences, Interim Provost/Vice President for Academic Affairs</td>
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<td>Songbird, Abena</td>
<td>Program Assistant II Office of Multicultural Affairs</td>
<td>OMA, AISES, AI Honoring Ceremony, SDCACG, Bridge Program</td>
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<td>Two Bulls, Kaylynn</td>
<td>Jump Start Retention Advisor</td>
<td>SD Jump Start Program</td>
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<td>West, Mike</td>
<td>Department Head/Associate Professor MET</td>
<td>Summer REUs</td>
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<td>Wilson, Heather</td>
<td>President</td>
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<td>Winter, Robb</td>
<td>Department Head/Professor CBE, Professor CBERD – NSF I/UCRC</td>
<td>AISES, Chemical and Biological Engineering Dept.</td>
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Compiled by Jesse Herrera, Director - Multicultural Affairs
Programming to Support Access and Success of Native American Students Summary Report
2015 – 2016
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South Dakota School of Mines and Technology
Programming to Support Access and Success of Native American Students Summary Report

South Dakota School of Mines and Technology (SD Mines) has at least 25 faculty members and staff who work with Native American initiatives and/or populations in pre-college, bridge, undergraduate, and graduate education efforts in some direct and concerted way. The following is a summary of programming and activities that are currently taking place on campus to support access and success for American Indian students:

RECRUITMENT

AISES Pre-College Outreach—SD Mine’s chapter of the American Indian Science & Engineering Society (AISES) provides science and engineering experiences for places with high concentrations of American Indian children such as the Black Hills Children’s Home. They also strive to strengthen AISES Region V, by assisting other institutions to develop associate AISES chapters. In the past, AISES members have worked with SD Mines faculty with a science based program at Central High School. The chapter also invited to speak to K-12 reservation based schools when they visit campus. The purpose of the pre-college outreach is to build a foundation among American Indian youth to pursue higher education, particularly in the STEM fields.

Contact Person: Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

Admissions Outreach – SD Mine’s Department of Admissions makes concerted efforts to connect with high school students, school guidance counselors and math and science teachers at tribal high schools and high schools with high concentrations of Native American students in South Dakota and surrounding states. The purpose of these connections is to educate Native American parents and pre-college students about the value and process of entering higher education, as well as the benefits of a science or engineering education at SD Mines.

Connection is accomplished in a variety of modalities including technology, media and literature, but primarily through in-person contact such as: high school visits; college fairs (Mobridge, Eagle Butte, etc.); representation at Lakota Nations Invitational basketball tournament in Rapid City; collaboration with the SD GEAR UP summer program on SD Mines campus; collaboration with the Jump Start Program Access Advisors and the SD Mines Jump Start Retention Advisor; presentations to middle and high schools visiting the campus; participation in Tiospaye luncheons and OMA networking luncheons (see below) to encourage and recruit current students to reach out to their home high schools, family and friends regarding education at SD Mines.

Contact Person: Molly Moore, Assistant Vice Provost for Enrollment Management and Director of Admissions

Green Chemistry Outreach Program – Dr. Filipova develop Green Chemistry outreach program designed to promote excitement and an appreciation for both science and higher education to middle school and high school students as well as to provide educational resources for science teachers in Pine Ridge Reservation and Rapid City area. The Green Chemistry program provides an environment that allows students to be comfortable and able to learn, while helping them to
understand the unlimited opportunities open to them at SD Mines. The program aim is to stimulate students' interest in chemistry, to demonstrate the relevance of chemistry in everyday life, and to encourage students to consider pursuing careers in Science. Collaborative interactions between Dr. Filipova and the six schools in on the Pine Ridge Reservation (Loneman Day School, Batesland School, Pine Ridge School, Red Shirt School, Red Cloud Elementary School, and Rockyford School) were established. Over 400 middle and high school students participated in Green Chemistry workshops at schools on Pine Ridge Reservation, in local schools and CABS labs.

The workshops are sponsored by the National Science Foundation DakotaBioCon grand (NSF IIA-1330842). Green Chemistry hands-on experiments are culturally relevant to the students’ lives and inspire them to consider Science as a possibility for their future professional development. The workshops at the CABS Department at SD Mines include working lunch with guest speaker Abena Songbird and Jesse Herrera from Multicultural Affairs, and SD Mines Native American students. The learning activities apply all three Dimension 1: Scientific and Engineering Practices, Dimension 2: Crosscutting Concepts and Dimension 3: Disciplinary Core Ideas – Physical Sciences from “A Framework for K–12 Science Education”, established as a guide for the updated National Science Education Standards.

The very first chemistry related summer camp at SDSMT, Green Chemistry Summer Camp (July 26-31, 2015) was organized by Dr. Filipova. Twelve high school students participated and four of them were Native American students (three from Red Cloud Elementary School and one from Batesland School).

**Contact Person:** Dr. Tsvetanka Filipova, Lecturer of Chemistry, Chemistry and Applied Biological Sciences

**SD GEAR UP** is a year-round program funded by the US Department of Education that prepares American Indian K-12 students for college. SD GEAR UP is operated by the SD Department of Indian Education. SD Mines has been privileged to partner with the program as the host site for the summer grade 6-12 component. The program completed its 23rd summer in 2015 on the SD Mines campus. In 2015 the program and campus hosted close to 300 GEAR UP students from all nine SD reservations as well as other schools.

**Contact Person:** Dr. Carter Kerk, Professor of Industrial Engineering and Assistant to the Provost for American Indian Initiatives

**RETENTION/SUPPORT**

**Multicultural Affairs Pre-Orientat**on – Beginning in 2011, SD Mines began an early arrival Bridge Program for incoming American Indian students including non-traditional and transfer students. At the start of the fall semester, students come to campus the week before classes begin to start the acclimation process to college life. The Office of Residential Life allows students to move in prior to official move-in day. During this time students attend sessions to reinforce math skills, get oriented to their class schedule, meet their advisors, are paired with mentors, build relationships with each other, and learn about how to be successful in college. In the past, if students participated in this program, their textbooks were covered through a book loan program. Due to funding this aspect of the program is evaluated on a year by year basis. This program is expected
to serve up to 25 first year students this coming year, but will continue providing support throughout their time at SD Mines.

**Contact Person:** Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

**American Indian Peer Mentor Program** – To ensure that no American Indian student feels isolated or unsupported, peer mentorship is offered to all students who participate in the Bridge Program as well as those who feel they could benefit from such a relationship. Mentors will provide guidance, connection and support throughout the first semester. The goal of the program is to positively impact retention rates of American Indian students. Related objectives are for minority students to have a successful and satisfactory first year, whether they are first-time freshmen, transfer, or non-traditional students. The program is also geared toward reinforcing a Native support system for student who may feel out of place. Mentors are volunteers, but OMA does its best to compensate students when funds are available.

**Contact Person:** Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

**South Dakota Jump Start Program** – The South Dakota Jump Start Program is a federally funded First in the World program designed to help students succeed in college by providing them a financial and academic “jump start”. This $3.6 million federal grant is shared among all six public universities in South Dakota and also includes Oglala Lakota College. Eligible individuals are Native American and low-income students who have graduated from a South Dakota high school and want to attend college for the first time.

Participating students enter a summer campus-based experience prior to their freshman year of college to earn free college credits and have an opportunity to get acclimated to the campus. During the academic year, students work with a South Dakota Jump Start advisor on campus to connect with resources, create a success plan, and participate in Jump Start events and activities. Once a student enters the Jump Start Program they will be tracked through the end of their third year in school. The ultimate goal behind this program is to give students a Jump Start on college success by providing personnel and resources to give students momentum toward graduation.

**Contact Person:** Jesse Herrera, Director or Kaylynn Two Bulls, Jump Start Advisor - Multicultural Affairs

**NSF PEEC Grant** is a Pre-Engineering Education Collaborative with Oglala Lakota College, South Dakota State University, and SD Mines. The program is designed for Native American students to complete their first two years of engineering education at Oglala Lakota College and then to complete their engineering education at an engineering university in South Dakota. A primary component of the PEEC program includes project based service learning projects on the Pine Ridge Indian Reservation which enhances student engagement with Reservation communities and promotes hands-on undergraduate research opportunities involving important local and regional issues. Interaction with faculty from mainstream engineering universities at every stage of the student’s progression strengthens their engineering background and helps to prepare the students for successful completion of an engineering curriculum at a mainstream university. Summer research programs and continuous opportunities for mentoring from engineering faculty also are
important components of the program. The grant has been active for approximately six years, and SD Mines faculty are currently applying for an additional three years of funding.  
**Contact Person:** Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering, Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering

**HUD Designing for People and Place: Sustainable & Affordable Housing for the Pine Ridge Indian Reservation** is a project lead by the University of Colorado Boulder, through partnership with Oglala Lakota College and the South Dakota School of Mines and Technology. It is an education-based research project, promoting service-learning, to bring together stakeholders and students to offer the Oglala Lakota Nation viable models of sustainable, culturally-appropriate, affordable, energy-efficient housing. The Oglala Sioux Housing Authority observed that there is a need for 4,000 new homes to combat homelessness on Pine Ridge.  
**Contact Person:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering

**Sustainable Food Production for the Pine Ridge Indian Reservation** is a multi-disciplinary design team project that partners faculty and students from South Dakota School of Mines and Technology with faculty and students at the Oglala Lakota College to design, implement, and test the design and business plan development of sustainable food production systems. The US Department of Agriculture has classified the Pine Ridge Reservation as a “food desert,” due to physical and economic barriers that limit the population’s access to healthy foods.  
**Contact Person:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering; Dr. Daniel Dolan, Professor Mechanical Engineering

**Engineering Projects in Community Service (EPICS)** program will launch in the fall of 2016. Of the 23 EPICS universities worldwide, Mines will be the first to partner with a tribal college, Oglala Lakota College (OLC), and 50 percent of projects will meet critical needs on the Pine Ridge Reservation. The EPICS program will offer technical training and professional development in collaboration, communication, project management, diversity awareness, and understanding social and cultural implications of engineering designs. The EPICS program will feature project teams that will be multi-disciplinary, vertically-integrated, and student-led.  
**Contacts:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering; Andrea Surovek, Research Scientist IV Mechanical Engineering/Senior Lecturer Civil and Environmental Engineering; Stuart Kellogg, Department Head/Pietz Professor Industrial Engineering; Christopher Shearer, Assistant Professor Civil and Environmental Engineering

**Emergency Fund** – The Emergency Fund is intended for students with a dire financial need. The purpose is to assist students with unexpected expenses which may put them at risk for dropping out of school. Funds may be used to pay for vehicle repairs, utility bills, textbooks, counseling, and other support. This fund has also helped many students who have encountered acute financial need due to illness or injury, or loss of employment. Funds are accumulated from private donations. The Emergency Fund is open to all students including American Indian students.  
**Contact Person:** Dr. Pat Mahon, Vice President for Student Development and Dean of Students Student Development
American Indian Science & Engineering Society (AISES) – SD Mines has an award-winning AISES chapter that promotes excellence, leadership, and opportunities in education and professional development of students. AISES provides national and regional conferences, scholarships, job placement assistance, internships and coop opportunities, networking and social support, community service and involvement. In the spring of 2015, the SD Mines AISES chapter hosted the Region V Conference on campus. That was the third time the chapter has hosted this conference on campus.

Contact Person: Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

The Office of Multicultural Affairs (OMA) provides direct student support services for all underrepresented students, especially American Indian students. These support services include, but are not limited to, scholarship alerts, internship/coop information, as well as providing opportunities for leadership and professional development. The OMA also provides leadership and helps to facilitate the coordination of programs to underrepresented groups, especially those related to American Indian students and culture. The office reaches out to all underrepresented populations; holds free student support lunches for networking and social support each semester; and coordinates honoring ceremonies for American Indian graduates. Programing promotes diversity and inclusion initiatives for students, staff and faculty. The OMA also collaborates with several departments across campus to promote a diverse and inclusive campus atmosphere.

Contact Person: Jesse Herrera, Director or Abena Songbird, Program Assistant II – Multicultural Affairs

American Indian Honoring Ceremony – The OMA coordinates and sponsors the American Indian Honoring Ceremony established in December 2008. This is a special ceremony held in the spring the day before campus commencement. It celebrates and honors SD Mines Native graduates by providing a traditional meal for graduates, family, and invited community. Speakers are drawn from faculty, staff, alumni, and tribal communities. The Honoring Ceremony includes an invocation, prayers, songs, and tying of eagle feather/plume for each graduate.

Contact Person: Abena Songbird, Program Assistant II – Multicultural Affairs

Research Experiences for Undergraduates (REU) – SD Mines is host to the NSF REU “Back to the Future” Site. The REU site engages students in a funded 10-week summer undergraduate research experience. The site is open to students from all backgrounds that are interested in science and engineering. The theme of the site is Metallurgical/Materials engineering research, with many of the projects having historical, cultural, or artistic significance. Supplementary activities include many hands-on workshops involving art, history, and metallurgy some of which are led by local Lakota artists. The unique site activities may help to attract and retain underrepresented students. The site is in its seventh year with approximately 25% of the participants being Native American students. The program website is located at: http://met.sdsmt.edu/reu/. As part of the site activities, undergraduate students are involved in outreach activities which support ongoing programs that support Native American high school students such as the South Dakota GEAR-UP program and the UNITE program. Recent highlights include a student presentation at the national American Indian Science and Engineering (AISES) conference as well as a faculty presentation on undergraduate research at the Indian University of North America at Crazy Horse, SD.
Contact Person: Dr. Mike West, Department Head/Associate Professor Materials and Metallurgical Engineering

NSF Tiospaye Scholar Program has received three NSF S-STEM awards in excess of $1.8M of which 85% goes for scholarships for American Indian students in engineering, science, and mathematics. Applicants must be academically talented and financially needy. The program provides support in five areas: financial, academic, professional, cultural, and social. The students are provided weekly mentoring sessions, monthly mentoring with the director, weekly recitations in key gateway classes including algebra, trigonometry, calculus, differential equations, chemistry, physics, computer programming, statics, and dynamics. Specific tutoring is currently provided in Chemistry, Statics, and Dynamics. Bi-weekly professional lunch meetings feature programming in the five areas of support. During the Spring 2016 semester, the program is supporting 23 scholars. Since 2010, the program has graduated 24 scholars, including nine women. Engineering students may receive up to $8K per year in scholarships. The science/mathematics grant did not receive renewal funding, so we are working with our science/mathematics students to find other funding. We are moving into larger quarters in the summer of 2016.

Contact Person: Dr. Carter Kerk, Professor of Industrial Engineering and Assistant to the Provost for American Indian Initiatives

SCHOLARSHIPS
SD Mines is a member of the All Nations Louis Stokes Alliance for Minority Participation headquartered at Salish Kootenai College. The program provides merit-based scholarships for up to $1050 per semester, as well as travel funds for students to attend professional conferences. Since 2009, 60 students have received over $91K in stipends.

Scholarships—In addition to the above programs, SD Mines has sought out and awarded through our Foundation over $42,000 in scholarships. These figures do not include the Tiospaye Scholarship, departmental scholarships, or other outside scholarships.

Scholarships include:

<table>
<thead>
<tr>
<th>Scholarship Fund</th>
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<tr>
<td>AISES SCHOLARSHIP FUND</td>
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<td>CRAZY HORSE - CHARLES MORSS</td>
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<tr>
<td>CRAZY HORSE - LT COMM HERRINGTON</td>
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<tr>
<td>CRAZY HORSE - PAUL MUEHL</td>
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<td>HANSEN, WALTER &amp; MARILYN JACKSON NATIVE AMERICAN</td>
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<td>JOBE, LOWELL A.</td>
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Scholarships for African American, Hispanic, and American Indian students in the chemical sciences - ACS awards renewable scholarships to underrepresented minority students who want to enter the fields of chemistry or chemistry-related fields. Awards of up to $5,000 are given to qualified students. African American, Hispanic, or American Indian high school seniors or college freshman, sophomores, or juniors pursuing a college degree in the chemical sciences or chemical technology are eligible to apply.

Contact Person: Dr. Justin Meyer, Senior Lecturer Chemistry and Applied Biological Sciences

OTHER RESOURCES

NASA South Dakota Space Grant Consortium (SDSGC) – SD Mines is the lead institution of the SDSGC and seeks to expand opportunities for Native Americans in particular through education, research, and public services in the fields of aerospace, earth science, and supporting STEM disciplines. The goal of the SDSGC Fellowship/Scholarship program is “To administer a Fellowship/Scholarship program that offers educational and research opportunities to students from diverse backgrounds who are pursuing degrees in fields of STEM that align with NASA’s mission and those of SDSGC members and affiliates.” SDSGC’s Diversity goal is “To model diversity in all Consortium programs and activities, with an emphasis on Native Americans, which make up the state’s largest minority group.” SDSGC provided $1,671,500 in scholarships and fellowships to 544 students at nine South Dakota public, private, and tribal colleges/universities from FY2005-2015 and annually meets its objective of providing at least 14% of its awards to minority students; most of whom are Native American. Several Native American students at SD Mines have conducted 10-week summer research internships at NASA Centers. The first Native American to graduate from SD Mines with a Ph.D. was largely supported by NASA funding. For at least the last fourteen years, SDSGC provided funding and staff for NASA-related STEM programs as part of the curriculum offered through the “South Dakota GEAR UP Honors Program” held on the campus of SD Mines each summer.

Contact Person: Thomas Durkin Deputy Director of SD Space Grant Consortium

South Dakota NASA EPSCoR Program – SD Mines is the lead institution for this program and focuses on strengthening South Dakota’s research infrastructure. In 2015 SD NASA EPSCoR provided $11,500 for a Tribal College Collaboration Grant titled: “Deep Science: Building Capacity for Biological Research at Sinte Gleska University”. The principal investigator is Dana Gehring of Sinte Gleska University. The Co-PI is Bree Reynolds of Black Hills State University. Additional collaborators are Rajesh Sani of SD Mines, Cynthia Anderson of BHSU, and Jan Amend of the University of Southern California and NASA’s Life Underground Astrobiology Institute. Through additional travel support from SD NASA EPSCoR, three faculty members and three SGU students visited research facilities at NASA’s Jet Propulsion Laboratory, NASA’s Ames Research center, Caltech, and USC.

Contact Person: Dr. Edward Duke SD Space Grant Consortium
**Apex Gallery** – The Apex Gallery is always on the look out to feature American Indian artists. At least one exhibit every year is sought. This coming academic year a two person show of American Indian artists will be displaying their art in the gallery.

**Contact Person: Deborah Mitchell, Associate Professor Humanities, Director of APEX Gallery**

**Museum of Geology** – Sally Shelton, Associate Director of the Museum, is helping to teach an ongoing paleontology monitoring class at Cheyenne River, which includes a session at the Museum’s Paleontology Research Laboratory (PRL). This is intended to serve as a laboratory for any of our Lakota colleagues who need a place for fossil preparation and curation.

The PRL labs have been used by GEAR-UP every summer since 2011 (the first year that the lab was fully open). Staff provides information on paleontology work in the field and lab as part of that program. On top of this, the Museum also offers tours to groups and schools from around the region which includes Pine Ridge Schools.

Museum curator Darrin Pagnac has developed a presentation on the Native American sources of many paleontological species names. Dr. Pagnac has once again been asked to participate in Native Explorers with Kent Smith at Oklahoma State University as an official Native Explorers mentor. He will be working with them in New Mexico and Nevada in May 2016. Though he will not be working with South Dakota tribes he will be making contact with several tribal organizations from Oklahoma including Cherokee, Comanche, Chickasaw, Pottawatomie, as well as a number of other Southern Plains nations. This interaction could lead to students attending SD Mines in the future.

We continue to work with the paleontology/earth sciences program at Oglala Lakota College. We continue to manage fossils from South Dakota reservation lands, notably Pine Ridge, Rosebud, and Crow Creek, working with THPO and other tribal government representatives to determine the best way to store and care for these respectfully.

Our hope is to provide program resources in order to encourage all Native American students seeking certification for paleontology monitoring and mitigation jobs under the new Paleontology Resources Preservation Act. Paleontology resource management issues are extremely important on most of the tribal lands in the state.

**Contact Person: Laurie Anderson, Department Head/Professor Geology and Geological Engineering, Director of the Museum of Geology**

**Moving Diversity and Inclusion Forward**


“The Office of Multicultural Affairs will aid in achieving and maintaining national prominence for the recruitment, retention and graduation of underrepresented students. Working with other programs like Mines Advantage we strive to promote cultural proficiency as well as an inclusive campus climate that supports underrepresented populations and fosters respect for those with diverse backgrounds.”
The South Dakota Board of Regents Factbook for the fiscal year of 2015 shows that SD Mine’s American Indian students comprise of 3.52% (100 AI students) of the total student body (2,843) in the fall 2015. In comparison to the previous year, there was a slight increase from 3.40% (95 AI students) in fall 2014. Also in fall 2015, there were 10 American Indian students pursuing graduate degrees and one pursuing a doctorate.

SD Mines operates through Strategic Priorities, each with implications for American Indian support and access.

Goal One Student Success: Prepare more undergraduate students for leadership in engineering and science – The American Indian population is among the highest minority population on campus. Within the state, SD Mines has the second highest percentage of American Indian students. Through the programs listed above American Indian students will continue to succeed.

Goal Two Research: Increase research to prepare science and engineering experts, advance knowledge, and catalyze economic development – It is common in research proposals to include a section on how the research will impact the broader community. There are several service learning projects mentioned above involving American Indian students taking place on tribal reservations. Current and future graduate programs are designed to address and solve problems faced by tribal reservations. Many of these issues are specifically addressed through graduate and research programs in the Civil and Environmental, and Geological Engineering departments. Many of these research projects are pertinent to tribal communities.

Goal Three Facilities: Redevelop and expand needed living, learning, and research spaces – An integral part of all strategic planning has been the development of a campus master plan for facilities expansion and improvement. Included in the ongoing discussion of this master plan is the proposal for a Multicultural Center or space similar to that of WiSE. The purpose of this center would be to create a space where all underrepresented groups, including American Indian students might find comfort and community amidst the dominant culture on campus and Rapid City.

Goal Four People: Recruit, develop, and retain excellent faculty and staff – It is important to continue recruiting and retaining diverse faculty and staff. Faculty and staff with diverse backgrounds help to bring new ideas and methods to our rapidly changing country. Furthermore, such hiring could affect retention as students like to see faculty and staff that mirror their own community. This also means recognizing and rewarding employees for implementing the university’s strategic priorities. Employees who are able to incorporate aspects of multiculturalism into their classrooms or department will help to promote new ideas and perspectives which in turn contributes to creating a more welcoming campus climate allowing students of color one less obstacle as they move forward. The OMA is committed to increasing cultural proficiency on campus by inviting speakers to conduct sessions and workshops based on multiculturalism. The Intercultural Development Inventory (IDI) is an instrument used to assess, address, and develop a plan to better promote campus cultural proficiency.

Goal Five Administration: Responsibly steward financial and physical resources – With the help of SD Mines Foundation, resources for American Indian initiatives are continually sought for and
secured from a wide range of entities on and off campus. In addition to the scholarship amounts mentioned earlier, in the 2015-2016 academic year, the Office of Multicultural Affairs secured over $17,000 in external funds for American Indian student support (not including scholarship funds):

- $12,250 from Shakopee Mdewakanton Sioux Community for AI mentoring/tutoring and emergency funding.
- $5,000 from 3M for student support initiatives

**Goal Six Development: Establish a robust culture of philanthropy to enable the university to sustain excellence** – Through the many initiatives noted above, SD Mines is intentionally creating programs to promote inclusion among students as well as faculty and staff. Through the Mines Advantage program as well as the Global Perspective Inventory (GPI), students are encouraged to expand their global and cultural understanding. For faculty and staff, the IDI assessment is meant to address the areas of need in regard to campus cultural proficiency. Through these initiatives there is an underlying message of service to the community and giving back to the university. Engaging students in this way creates loyalty now and long after they have graduated. By engaging alums, especially those of color, current students may be inspired to come back someday themselves.
### Contact List in Alphabetical Order

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<tr>
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<th>Title</th>
<th>Program</th>
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<td>Department Head/Professor GEOL, GEOE, Director of MOG</td>
<td>Museum of Geology</td>
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<tr>
<td>Benning, Jennifer</td>
<td>Assistant Professor CEE</td>
<td>NSF PEEC, HUD Designing for People and Place, Sustainable Food Production, EPICS</td>
</tr>
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<td>Dolan, Dan</td>
<td>Professor Mechanical Engineering, Director CAMP</td>
<td>Sustainable Food Production</td>
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<td>Duke, Edward</td>
<td>Manage of Analytical Services (EMES) /Professor GEOL, GEOE</td>
<td>South Dakota Space Grant Consortium</td>
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<td>Durkin, Thomas</td>
<td>Deputy Director</td>
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<tr>
<td>Filipova, Tsvetanka</td>
<td>Lecturer Chemistry and Applied Biological Sciences</td>
<td>Green Chemistry Education Workshops</td>
</tr>
<tr>
<td>Herrera, Jesse</td>
<td>Director of the Office of Multicultural Affairs</td>
<td>OMA, AISES, Jump Start, Pre-Orientation Program</td>
</tr>
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<td>Johnson, Brad</td>
<td>Vice President of Development</td>
<td>Foundation</td>
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<td>Kellogg, Stuart</td>
<td>Department Head/Pietz Professor IE</td>
<td>Tiospaye, EPICS</td>
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<td>Kerk, Carter</td>
<td>Professor IE, Assistant to the Provost for Native American Initiatives</td>
<td>ANLSAM, Tiospaye</td>
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<td>Mahon, Pat</td>
<td>Vice President for Student Development/Dean of Students Student Development</td>
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<td>Meyer, Justin</td>
<td>Senior Lecturer, Chemistry/ABS</td>
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<td>Mitchell, Deborah</td>
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<td>APEX Gallery</td>
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<td>Moore, Molly</td>
<td>Vice Provost for Enrollment Management/Director of Admissions</td>
<td>Admission Outreach</td>
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<td>Sawyer, Foster</td>
<td>Associate Professor GEOL, GEOE</td>
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<td>Shearer, Christopher</td>
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<tr>
<td>Shelton, Sally</td>
<td>Collections Manager MOG, Instructor GEOL, GEOE</td>
<td>Museum of Geology</td>
</tr>
<tr>
<td>Songbird, Abena</td>
<td>Program Assistant II Office of Multicultural Affairs</td>
<td>OMA, AISES, AI Honoring Ceremony, Pre-Orientation Program</td>
</tr>
<tr>
<td>Surovek, Andrea</td>
<td>Research Scientist IV ME, Senior Lecturer CEE</td>
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<tr>
<td>Two Bulls, Kaylynn</td>
<td>Jump Start Retention Advisor</td>
<td>SD Jump Start Program</td>
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<td>West, Mike</td>
<td>Department Head/Associate Professor MET</td>
<td>Summer REUs</td>
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<tr>
<td>Wilson, Heather</td>
<td>President</td>
<td>SD Mines</td>
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Compiled by Jesse Herrera, Director - Multicultural Affairs
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South Dakota School of Mines and Technology (SD Mines) has several faculty and staff members who work with Native American initiatives and/or populations in pre-college, bridge, undergraduate, and graduate education efforts in some direct and concerted way. The following is a summary of programming and activities that are currently taking place on campus to support access and success for American Indian students:

RECRUITMENT

AISES Pre-College Outreach—SD Mines’ chapter of the American Indian Science & Engineering Society (AISES) provides science and engineering experiences for places with high concentrations of American Indian children such as the Black Hills Children’s Home. They also strive to strengthen AISES Region V, by assisting other institutions to develop associate AISES chapters. In the past, AISES members have worked with SD Mines faculty with a science based program at Central High School. Currently, AISES members serve as tutors for Central HS students. The chapter is also invited to speak to K-12 reservation based schools when they visit campus. The purpose of the pre-college outreach is to build a foundation among American Indian youth to pursue higher education, particularly in the STEM fields.

Contact Person: Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II, Multicultural Affairs

Admissions Outreach – SD Mines’ Department of Admissions makes concerted efforts to connect with high school students, school guidance counselors and math and science teachers at tribal high schools and high schools with high concentrations of Native American students in South Dakota and surrounding states. The purpose of these connections is to educate Native American parents and pre-college students about the value and process of entering higher education, as well as the benefits of a science or engineering education at SD Mines. SD Mines participates in College Application Week. This program provides fee waivers for students at targeted high schools across the state, many of which are tribal schools.

Connection is accomplished in a variety of modalities including technology, media and literature, but primarily through in-person contact such as: high school visits; college fairs (Mobridge, Eagle Butte, etc.); representation at Lakota Nations Invitational basketball tournament in Rapid City; collaboration with the Jump Start Program Access Advisors and the SD Mines Jump Start Retention Advisor; presentations to middle and high schools visiting the campus; participation in Tiospaye luncheons and OMA networking luncheons (see below) to encourage and recruit current students to reach out to their home high schools, family and friends regarding education at SD Mines.

Contact Person: Molly Moore, Associate Provost for Academic Administration and Director of Admissions

Green Chemistry Outreach Program – The Green Chemistry outreach program is designed to promote excitement and an appreciation for both science and higher education to middle school and high school students. The program delivers educational resources aligned with the SD Science Standards for science teachers on the Pine Ridge Reservation and Rapid City area. The Green
Chemistry program provides an environment that allows students to be comfortable and able to learn, while helping them to understand the unlimited opportunities open to them at SD Mines. The program aim is to stimulate students' interest in chemistry, to demonstrate the relevance of chemistry in everyday life, and to encourage students to consider pursuing careers in Science.

Over 300 middle and high school students participated in Green Chemistry workshops at schools on Pine Ridge Reservation, in local schools and Chemistry and Applied Biological Sciences (CABS) labs.

The professional development (PD) workshop “Green Chemistry and Sustainable Energy Education 2016” was held at the Department of Chemistry and Applied Biological Sciences, South Dakota School of Mines and Technology on July 10-15, 2016. The workshop was structured as an active learning environment that empower teachers to bring chemistry and engineering alive to students, stressing the satisfaction with compelling questions and the joy of discovery. During the week-long workshop, educators gained knowledge of Green Chemistry and Sustainable Energy in an active learning environment using practices, crosscutting concepts, and Disciplinary Core Ideas. Teachers worked directly with science faculty (Dr. Filipova, PI, and Dr. Smirnova, Co-PI), and education faculty (Dr. Briggs, Co-PI) who assisted them in development and integration of Students Learning Objectives (SLO). Content of the SLO was selected based on alignment with the SD Science Standards, and the Oceti Sakowin Essential Understandings and Standards. Participating teachers were from Oglala Lakota and Hill City School districts, Rapid City School district, Northwestern Area School, Little Wound, Loneman School, Harding County, Red Cloud Indian School, Sanborn Central School, Calvary Christian School, Lemmon School, Lead Deadwood School and St. Thomas More School. The new ideas and lessons from the PD are currently applied by the teachers in their own classrooms. This PD program sponsored by a No Child Left Behind Title II-A grant from the South Dakota Board of Regents was the collaborative effort between SDSMT, BHSU, Oglala Lakota County and Hill City School Districts focused on Green Chemistry and Sustainable energy.

The Green Chemistry Summer Camp (July 17-22, 2016) was organized by Dr. Filipova. The students, who participated in the Green Chemistry summer camp became involved in science projects for science fair (American Indian student from Timber Lake High School, SD) as well as capstone school project (student from Legacy High School, CO). One student is accepted at SD Mines.

Contact Person: Dr. Tsvetanka Filipova, Lecturer of Chemistry, Chemistry and Applied Biological Sciences

**RETENTION/SUPPORT**

**Multicultural Affairs Pre-Orienation** – This program is geared toward incoming American Indian students including non-traditional and transfer students. At the start of the fall semester, students come to campus the week before classes begin to start the acclimation process to college life. The Office of Residential Life allows students to move in prior to official move-in day. During this time students attend sessions to get oriented to their class schedule, meet their advisors, are paired with mentors, build relationships with each other, and learn about how to be successful in college. If students participate in this program, some of their textbooks are covered through the OMA Book Loan Library.

Contact Person: Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs
**American Indian Peer Mentor Program** – To ensure that no American Indian student feels isolated or unsupported, peer mentorship is offered to all students who participate in the OMA Pre-O as well as those who feel they could benefit from such a relationship. Mentors will provide guidance, connection and support throughout the first semester. The goal of the program is to positively impact retention rates of American Indian students. Related objectives are for minority students to have a successful and satisfactory first year, whether they are first-time freshmen, transfer, or non-traditional students. The program is also geared toward reinforcing a Native support system for students who may feel out of place. Mentors are volunteers, but OMA does its best to compensate students when funds are available.

**Contact Person:** Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs

**South Dakota Jump Start Program** – The South Dakota Jump Start Program is a federally funded First in the World program designed to help students succeed in college by providing them a financial and academic “jump start”. This $3.6 million federal grant is shared among all six public universities in South Dakota and also includes Oglala Lakota College. Eligible individuals are Native American and low-income students who have graduated from a South Dakota high school and want to attend college for the first time.

Participating students enter a summer campus-based experience prior to their freshman year of college to earn free college credits and have an opportunity to get acclimated to the campus. During the academic year, students work with a South Dakota Jump Start advisor on campus to connect with resources, create a success plan, and participate in Jump Start events and activities. Once a student enters the Jump Start Program they will be tracked through the end of their third year in school. The ultimate goal behind this program is to give students a Jump Start on college success by providing personnel and resources to give students momentum toward graduation.

**Contact Person:** Jesse Herrera, Director Multicultural Affairs; Kaylynn Two Bulls, Jump Start Advisor Multicultural Affairs

**NSF OSSPEEC II Grant** is a Pre-Engineering Education Collaborative with Oglala Lakota College, South Dakota State University, and SD Mines. The project aims to increase recruitment, retention, persistence, and completion rates in pre-engineering and engineering for Native American students. OSSPEEC II provides culturally centered and integrated project based experiential learning through pre-engineering classroom activities and co-curricular activities consisting of research on reservation needs in the areas of water quality and quantity, geology, and sustainability. The project also will investigate and elucidate the impact of the OSSPEEC model which emphasizes the importance of experiential learning and incorporation of the Lakota world view as the basis for making essentially correct preconceptions in engineering. The program is designed for Native American students to complete their first two years of engineering education at Oglala Lakota College and then to complete their engineering education at South Dakota State University or SD Mines. An additional goal of the OSSPEEC II project is to improve the quality of engineering education at Oglala Lakota College through professional development of faculty and staff.

**Contact Person:** Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering; Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering
**BIA Rosebud Sioux Tribe Grant** The goal of this project is to study the feasibility of a community-scale energy development project on the Rosebud Sioux Reservation using the shallow natural gas resource in the Niobrara Formation. Project objectives include siting and design of the wellhead, a preliminary engineering report for a small community distribution system, a companion environmental monitoring plan to ensure compliance through all phases of the project, and a feasibility study that assesses and evaluates the technical and economic feasibility of installation of the proposed well and distribution system. The outcome will provide Tribal leadership with the necessary information to decide on the future of the development of shallow, stranded gas resources on the reservation in an environmentally responsible manner. The project also will provide educational and experiential opportunities for Tribal students at Sinte Gleska University and SD Mines as well as potential opportunities for economic development on the Rosebud Reservation.

**Contact Person:** Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering; Daniel J. Soeder, Director Energy Research Institute

**HUD Designing for People and Place: Sustainable & Affordable Housing for the Pine Ridge Indian Reservation** is a project lead by the University of Colorado Boulder, through partnership with Oglala Lakota College and the South Dakota School of Mines and Technology. It is an education-based research project, promoting service-learning, to bring together stakeholders and students to offer the Oglala Lakota Nation viable models of sustainable, culturally-appropriate, affordable, energy-efficient housing. The Oglala Sioux Housing Authority observed that there is a need for 4,000 new homes to combat homelessness on Pine Ridge.

**Contact Person:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering

**Sustainable Food Production for the Pine Ridge Indian Reservation** is a multi-disciplinary design team project that partners faculty and students from South Dakota School of Mines and Technology with faculty and students at the Oglala Lakota College to design, implement, and test the design and business plan development of sustainable food production systems. The US Department of Agriculture has classified the Pine Ridge Reservation as a “food desert,” due to physical and economic barriers that limit the population’s access to healthy foods.

**Contact Person:** Dr. Jennifer Benning, Assistant Professor Civil and Environmental Engineering; Dr. Daniel Dolan, Professor Mechanical Engineering

**Engineering Projects in Community Service (EPICS)** program launched in the fall of 2016. Of the 23 EPICS universities worldwide, Mines is the first to partner with a tribal college, Oglala Lakota College (OLC), and strives to have at least 50 percent of the community design projects addressing critical needs on the Pine Ridge Reservation. The EPICS program will offer technical training and professional development in collaboration, communication, project management, diversity awareness, and understanding social and cultural implications of engineering designs. The EPICS program will feature project teams that will be multi-disciplinary, vertically-integrated, and student-led. In the first year of the program, projects addressing the needs of Pine Ridge include: the design of seed starter kits for home gardening in collaboration with Kyle Serenity Gardens; the design of affordable housing with Oglala Lakota College; sustainable food production system designs with Oglala Lakota College; and flood mitigation for the town of Manderson in collaboration with the US Department of Agriculture, Lewis Berger Group, Inc., and Oglala Sioux Lakota Housing.
Contacts: Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering; Dr. Andrea Surovec, Research Scientist IV Mechanical Engineering/Senior Lecturer Civil and Environmental Engineering; Dr. Stuart Kellogg, Department Head/Pietz Professor Industrial Engineering; Dr. Christopher Shearer, Assistant Professor Civil and Environmental Engineering

Emergency Fund — The Emergency Fund is intended for students with a dire financial need. The purpose is to assist students with unexpected expenses which may put them at risk for dropping out of school. Funds may be used to pay for vehicle repairs, utility bills, textbooks, counseling, and other support. This fund has also helped many students who have encountered acute financial need due to illness or injury, or loss of employment. Funds are accumulated from private donations. The Emergency Fund is open to all students including American Indian students.

Contact Person: Dr. Pat Mahon, Vice President for Student Development and Dean of Students

Student Development

American Indian Science & Engineering Society (AISES) — SD Mines has an award-winning AISES chapter that promotes excellence, leadership, and opportunities in education and professional development of students. AISES provides national and regional conferences, scholarships, job placement assistance, internships and co-op opportunities, networking and social support, community service and campus involvement.

Contact Person: Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs

The Office of Multicultural Affairs (OMA) provides direct student support services for all underrepresented students, especially American Indian students. Support services include, but are not limited to, scholarship alerts, internship/co-op information, as well as providing opportunities for leadership and professional development. The OMA also provides leadership and helps to facilitate the coordination of programs to underrepresented groups, especially those related to American Indian students. The office reaches out to all underrepresented populations; holds free student lunches for networking and social support each semester; and coordinates the Honoring Ceremony for American Indian graduates. Programing promotes diversity and inclusion initiatives for students, staff and faculty. The OMA also collaborates with several departments across campus to promote a diverse and inclusive campus atmosphere.

Contact Person: Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs

American Indian Honoring Ceremony — The OMA coordinates and sponsors the American Indian Honoring Ceremony established in December 2008. This is a special ceremony held in the spring the day before campus commencement. It celebrates and honors SD Mines Native graduates by providing a traditional meal for graduates, family, and invited community. Speakers are drawn from faculty, staff, alumni, and tribal communities. The Honoring Ceremony includes an invocation, prayers, songs, and the tying of an eagle feather/plume for each graduate.

Contact Person: Abena Songbird, Program Assistant II Multicultural Affairs

Research Experiences for Undergraduates (REU) — SD Mines is host to two NSF REU programs, the NSF REU “Back to the Future” Site and the NSF REU “Security Printing and Anti-Counterfeiting Technologies (SPACT)” Site. These programs provide research opportunities for underrepresented
students (particularly Native American students). The REU sites engage students in a funded 10-week summer undergraduate research experience. The sites are open to students from all backgrounds that are interested in science and engineering.

The theme of the “Back to the Future” site is Metallurgical/Materials engineering research, with many of the projects having historical, cultural, or artistic significance. Supplementary activities include many hands-on workshops involving art, history, and metallurgy some of which are led by local Lakota artists. The program website is located at: [http://met.sdsmt.edu/reu/](http://met.sdsmt.edu/reu/).

The REU SPACT site focuses on research to combat counterfeiting. Several of the past projects engaged students in the authentication of Native American artifacts. Recently, the SPACT research team and students have teamed with area museums such as the Heritage Center at Red Cloud Indian School to address issues with counterfeiting of Native American art. The program website is located at: [http://spact-center.org/reu/](http://spact-center.org/reu/).

As part of the site activities, undergraduate students are also involved in outreach activities which support ongoing programs that support Native American high school students such as the South Dakota GEAR-UP program and the UNITE program. Recent highlights include student presentations at the national American Indian Science and Engineering (AISES) conference and student mentoring of local Native American high school students. The sites have had an average participation of nearly 20% Native American students.

**Contact Persons:** Dr. Michael West, Department Head and Associate Professor; Department of Materials and Metallurgical Engineering; Dr. Grant Crawford, Assistant Professor

**NSF Tiospaye Scholar Program** has received three NSF S-STEM awards in excess of $1.8M of which 85% goes for scholarships for American Indian students in engineering, science, and mathematics. Applicants must be academically talented and financially needy. The program provides support in five areas: financial, academic, professional, cultural, and social. The students are provided weekly mentoring sessions, monthly mentoring with the director, weekly tutoring in key gateway classes including trigonometry, calculus, differential equations, chemistry, physics, computer programming, statics, and dynamics. Bi-weekly professional lunch meetings feature programming in the five areas of support. During the Spring 2017 semester, the program is supporting 18 scholars. Since the first scholarships were awarded in 2009, the program has graduated 28 scholars, including nine women. Engineering students may receive up to $8K per year in scholarships. We are exploring options to fund the program as funding is likely to end in 2018. We moved into larger quarters in the summer of 2016.

**Contact Person:** Dr. Carter Kerk, Professor of Industrial Engineering, Director

**SCHOLARSHIPS**

SD Mines is a member of the [All Nations Louis Stokes Alliance for Minority Participation](http://salishkootenai.edu/) headquartered at Salish Kootenai College. The program provides merit-based scholarships for up to $1050 per semester, as well as travel funds for students to attend professional conferences. Since 2009, 50 students have received over $78K in stipends.
**Scholarships**—In addition to the above programs, SD Mines has sought out and awarded through our Foundation over $44,000 in scholarships. These figures do not include the Tiospaye Scholarship, departmental scholarships, or other outside scholarships.

Scholarships include:

<table>
<thead>
<tr>
<th>Scholarship Fund</th>
<th>AY 16-17 Available</th>
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<tbody>
<tr>
<td>AISES SCHOLARSHIP FUND</td>
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<tr>
<td>CRAZY HORSE - CHARLES MORSS</td>
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<td>CRAZY HORSE - PAUL MUEHL</td>
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<tr>
<td>HINS, ALLAN NATIVE AMERICAN</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
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**Scholarships for African American, Hispanic, and American Indian students in the chemical sciences** – The American Chemical Society (ACS) awards renewable scholarships to underrepresented minority students who want to enter the fields of chemistry or chemistry-related fields. Awards of up to $5,000 are given to qualified students. African American, Hispanic, or American Indian high school seniors or college freshman, sophomores, or juniors pursuing a college degree in the chemical sciences or chemical technology are eligible to apply.

**Contact Person:** Dr. Justin Meyer, Senior Lecturer Chemistry and Applied Biological Sciences

**OTHER RESOURCES**

**NASA South Dakota Space Grant Consortium (SDSGC)** – SD Mines is the lead institution of the SDSGC and seeks to expand opportunities for Native Americans in particular through education, research, and public services in the fields of aerospace, earth science, and supporting STEM disciplines. The goal of the SDSGC Fellowship/Scholarship program is “To administer a Fellowship/Scholarship program that offers educational and research opportunities to students from diverse backgrounds who are pursuing degrees in fields of STEM that align with NASA’s mission and those of SDSGC members and affiliates.” SDSGC’s Diversity goal is “To model diversity in all Consortium programs and activities, with an emphasis on Native Americans, which make up the state’s largest minority group.” SDSGC provided $2,003,900 in scholarships and fellowships to 639 students at nine South Dakota public, private, and tribal colleges/universities from FY2005-2017 and annually meets its objective of providing at least 15% of its awards to minority students;
most of whom are Native American. Several Native American students at SD Mines have conducted 10-week summer and 16-week semester research internships at NASA Centers. The first Native American to graduate from SD Mines with a Ph.D. was largely supported by NASA funding.

**Contact Person: Thomas Durkin Deputy Director of SD Space Grant Consortium**

**South Dakota NASA EPSCoR Program** – SD Mines is the lead institution for this program and focuses on strengthening South Dakota’s research infrastructure. In 2016, SD Mines succeeded in winning a $750,000 NASA EPSCoR major research grant for a project titled: “Advanced Bioelectrochemical Module (BEM) for Waste-to-Electricity Generation during Long-term Space Exploration.” This project led by SD Mines, includes collaborative research with SDSU, USD, Oglala Lakota College, United Tribes Technical College, NASA Jet Propulsion Laboratory, NASA Ames Research Center, two national labs, and several industry partners.

**Person: Dr. Edward Duke, SD Space Grant Consortium; Dr. Venkata Gadhamshetty, Principal Investigator for BEM and Assistant Professor Civil and Environmental Engineering**

**Apex Gallery** – The Apex Gallery is always on the look out to feature American Indian artists. At least one exhibit every year is sought.

**Contact Person: Deborah Mitchell, Associate Professor Humanities, Director of APEX Gallery**

**Museum of Geology** – Sally Shelton, Associate Director of the Museum, is helping to teach an ongoing paleontology monitoring class at Cheyenne River, which may include a session at the Museum’s Paleontology Research Laboratory (PRL). This is intended to serve as a laboratory for any of our Lakota colleagues who need a place for fossil preparation and curation. In addition, the Museum offers tours to groups and schools from around the region, which includes Pine Ridge Schools.

Museum curator Darrin Pagnac has once again been asked to participate in Native Explorers with Kent Smith at Oklahoma State University as an official Native Explorers mentor. He will be working with them in New Mexico and Nevada in May 2016. Though he will not be working with South Dakota tribes he will be making contact with several tribal organizations from Oklahoma including Cherokee, Comanche, Chickasaw, Pottawatomie, as well as a number of other Southern Plains nations. This interaction could lead to students attending SD Mines in the future.

We continue to work with the paleontology/earth sciences program at Oglala Lakota College. We continue to manage fossils from South Dakota reservation lands, notably Pine Ridge, Rosebud, Cheyenne River, and Crow Creek, working with Tribal Historic Preservation Officers (THPO) and other tribal government representatives to determine the best way to store and care for these respectfully.

Our hope is to provide program resources in order to encourage all Native American students seeking certification for paleontology monitoring and mitigation jobs under the new Paleontology Resources Preservation Act. Paleontology resource management issues are extremely important on most of the tribal lands in the state.

**Contact Person: Dr. Laurie Anderson, Department Head/Professor Geology and Geological Engineering, Director of the Museum of Geology**
Moving Diversity and Inclusion Forward
The following is the mission statement for the Office of Multicultural Affairs (OMA) at SD Mines: “The Office of Multicultural Affairs cultivates an inclusive campus climate that supports underrepresented populations, fosters respect for those with diverse backgrounds, and promotes cultural proficiency among faculty, staff and students.”

Recently, SD Mines has adopted the following Inclusion Statement:
“South Dakota School of Mines & Technology is committed to cultivating an inclusive learning environment where faculty, staff, and students can grow and succeed. We value the diversity of unique backgrounds, experiences, perspectives, and talents within our community. It is our goal to promote a culture of respect, honor, understanding, integrity, and collaboration. It is through this diversity and inclusion that we find our strength.”

The South Dakota Board of Regents Factbook for the fiscal year of 2016 shows that American Indian students comprise of 3.11% (89 AI students) of the total student body (2,859) in the fall 2016 at SD Mines. In comparison to the previous year, there was a slight decrease from 3.52% (100 AI students) in fall 2015. Also in fall 2016, there were 11 American Indian students pursuing graduate degrees and two pursuing doctorates.

SD Mines operates through Strategic Priorities, each with implications for American Indian support and access.
Goal One Student Success: Prepare more undergraduate students for leadership in engineering and science – The American Indian population is among the highest minority population on campus. Within the state, SD Mines has the third highest percentage of American Indian students. Through the programs listed above American Indian students will continue to succeed.

Goal Two Research: Increase research to prepare science and engineering experts, advance knowledge, and catalyze economic development – It is common in research proposals to include a section on how the research will impact the broader community. There are several service learning projects mentioned above involving American Indian students taking place on tribal reservations. Current and future graduate programs are designed to address and solve problems faced by tribal reservations. Many of these issues are specifically addressed through graduate and research programs in the Civil and Environmental, and Geological Engineering departments. Many of these research projects are pertinent to tribal communities.

Goal Three Facilities: Redevelop and expand needed living, learning, and research spaces – An integral part of all strategic planning has been the development of a campus master plan for facilities expansion and improvement. Included in the ongoing discussion of this master plan is the proposal for a Multicultural Center. The purpose of this center would be to create a space where all underrepresented groups, including American Indian students might find comfort and community amidst the dominant culture on campus and within the Rapid City community.

Goal Four People: Recruit, develop, and retain excellent faculty and staff – It is important to continue recruiting and retaining diverse faculty and staff. Diverse employees help to bring new
ideas and methods to our rapidly changing country. Furthermore, such hiring could affect retention as students like to see faculty and staff that mirror their own community. This also means recognizing and rewarding employees for implementing the university’s strategic priorities. Employees who can incorporate aspects of multiculturalism into their classrooms or department are actively helping to promote a welcoming campus climate. The OMA is committed to increasing cultural proficiency on campus by inviting speakers to conduct sessions and workshops based on multiculturalism. The Intercultural Development Inventory (IDI) is an instrument used to assess, address, and develop a plan to better promote campus cultural proficiency.

Goal Five Administration: Responsibly steward financial and physical resources – With the help of SD Mines Foundation, resources for American Indian initiatives are continually sought for and secured from a wide range of entities on and off campus. In addition to the scholarship amounts mentioned earlier, in the 2016-2017 academic year, the Office of Multicultural Affairs secured $12,500 in external funds for American Indian student support (not including scholarship funds):

- $5,000 from 3M for student support initiatives
- $7,500 from Marilyn Jackson for student support initiatives

Goal Six Development: Establish a robust culture of philanthropy to enable the university to sustain excellence – Through the many initiatives noted above, SD Mines is intentionally creating programs to promote inclusion among students, faculty and staff. Through the Mines Advantage program and the Global Perspective Inventory (GPI), students are encouraged to expand their global and cultural understanding. For employees, the IDI assessment is meant to address the areas of need regarding campus cultural proficiency. Through these initiatives there is an underlying message of service to the community and giving back to the university. Engaging students in this way fosters loyalty, now and long after they have graduated. By engaging alums, especially those of color, current students may be inspired to come back someday themselves.
## Contact List in Alphabetical Order

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Program</th>
</tr>
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<tbody>
<tr>
<td>Anderson, Laurie</td>
<td>Department Head/Professor, Geology and Geological Engineering; Director, Museum of Geology</td>
<td>Museum of Geology</td>
</tr>
<tr>
<td>Benning, Jennifer</td>
<td>Associate Professor, Civil and Environmental Engineering</td>
<td>NSF PEEC, HUD Designing for People and Place, Sustainable Food Production, EPICS</td>
</tr>
<tr>
<td>Dolan, Dan</td>
<td>Director, Center of Excellence for Advanced Manufacturing and Production; Professor, Mechanical Engineering</td>
<td>Sustainable Food Production</td>
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<tr>
<td>Duke, Edward</td>
<td>Manager, Analytical Services; Professor, Geology and Geological Engineering</td>
<td>South Dakota NASA EPSCoR Program</td>
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<tr>
<td>Durkin, Thomas</td>
<td>Deputy Director, South Dakota Space Grant Consortium</td>
<td>South Dakota Space Grant Consortium</td>
</tr>
<tr>
<td>Filipova, Tsvetanka</td>
<td>Lecturer, Chemistry and Applied Biological Sciences</td>
<td>Green Chemistry Outreach Program</td>
</tr>
<tr>
<td>Herrera, Jesse</td>
<td>Director, Multicultural Affairs</td>
<td>OMA, AISES, Jump Start, Pre-Orientation Program</td>
</tr>
<tr>
<td>Johnson, Brad</td>
<td>Vice President of Development</td>
<td>Foundation</td>
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<tr>
<td>Kellogg, Stuart</td>
<td>Department Head/Pietz Professor, Industrial Engineering</td>
<td>Tiospaye, EPICS</td>
</tr>
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<td>Kerk, Carter</td>
<td>Professor, Industrial Engineering</td>
<td>ANLSAM, Tiospaye</td>
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<td>Mahon, Pat</td>
<td>Vice President, Student Development; Dean of Students, Student Development</td>
<td>Emergency Fund</td>
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<tr>
<td>Meyer, Justin</td>
<td>Senior Lecturer, Chemistry and Applied Biological Sciences</td>
<td>ACS Scholarships</td>
</tr>
<tr>
<td>Mitchell, Deborah</td>
<td>Associate Professor, Humanities; Director, APEX Gallery</td>
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<tr>
<td>Moore, Molly</td>
<td>Associate Provost, Academic Administration</td>
<td>Admission Outreach</td>
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<tr>
<td>Sawyer, Foster</td>
<td>Associate Professor, Geology and Geological Engineering</td>
<td>NSF PEEC II</td>
</tr>
<tr>
<td>Shearer, Christopher</td>
<td>Assistant Professor, Civil and Environmental Engineering</td>
<td>EPICS</td>
</tr>
<tr>
<td>Shelton, Sally</td>
<td>Collections Manager, Museum of Geology; Instructor, Geology and Geological Engineering</td>
<td>Museum of Geology</td>
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<tr>
<td>Songbird, Abena</td>
<td>Program Assistant II, Office of Multicultural Affairs</td>
<td>OMA, AISES, AI Honoring Ceremony, Pre-Orientation Program</td>
</tr>
<tr>
<td>Surovek, Andrea</td>
<td>Research Scientist IV, Mechanical Engineering; Senior Lecturer, Civil and Environmental Engineering</td>
<td>EPICS</td>
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<tr>
<td>Two Bulls, Kaylynn</td>
<td>Jump Start Retention Advisor</td>
<td>SD Jump Start Program</td>
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<tr>
<td>West, Mike</td>
<td>Department Head/Associate Professor, Materials and Metallurgical Engineering</td>
<td>Summer REUs</td>
</tr>
<tr>
<td>Wilson, Heather</td>
<td>President</td>
<td>SD Mines</td>
</tr>
</tbody>
</table>

Compiled by Jesse Herrera, Director - Multicultural Affairs
Support Access and Success of American Indian Students

Summary Report 2017-2018
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## Moving Diversity and Inclusion Forward

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The South Dakota School of Mines and Technology (SD Mines) has several activities and programs geared toward supporting the access and success of the American Indian student and surrounding community. Whether through pre-college orientation, summer bridge programs, research, or undergraduate and graduate education, there are many opportunities to support South Dakota’s largest minority group. All programs described in this report are facilitated by someone on the SD Mines campus.

// RECRUITMENT

**American Indian Science and Engineering Society (AISES) Pre-College Outreach**

SD Mines’ chapter of the National American Indian Science & Engineering Society (AISES) provides science and engineering experiences for places with high concentrations of American Indian children such as the Black Hills Children’s Home. They also strive to strengthen AISES Region V, by assisting other institutions to develop associate AISES chapters. In the past, AISES members have worked with SD Mines faculty with a science-based program at Central High School as well as offered tutoring. The chapter is also invited to speak to K-12 reservation-based schools when they visit campus. The purpose of the pre-college outreach is to build a foundation among American Indian youth to pursue higher education, particularly in the STEM fields.

**Contacts:**
Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II, Multicultural Affairs

**Admissions Outreach**

SD Mines’ Admissions Office makes concerted efforts to connect with high school students, school counselors and math and science teachers at tribal high schools and high schools with high concentrations of Native American students in South Dakota and surrounding states. The purpose of these connections is to educate Native American parents and pre-college students about the value and process of entering higher education, as well as the benefits of a science or engineering education at SD Mines. SD Mines participates in College Application Week. This program provides fee waivers for students at targeted high schools across the state, many of which are tribal schools.

Connection is accomplished in a variety of modalities including technology, media and literature, but primarily through in-person contact such as: high school visits; college fairs (Mobridge, Eagle Butte, Winner, etc.); representation at Lakota Nations Invitational basketball tournament in Rapid City; collaboration with the Jump Start Program Access Advisors and the SD Mines Jump Start Retention Advisor; presentations to middle and high schools visiting the campus; encourage and recruit current students to both reach out to their home high schools, family, and friends regarding education at SD Mines and represent the university through the Student Ambassador program.

**Contact:**
Molly Moore, Associate Provost for Academic Administration and Director of Admissions
Tribal School Outreach and Engagement Plan

The President’s Office is making a specialized effort to increase engagement with regional tribal schools through personal visits by the special projects coordinator. The initial stage of this plan targets ten high schools on or near reservations in central and western South Dakota with the hope to increase the number of schools in the coming years. The coordinator has been making presentations to freshmen and sophomore science classes to discuss college planning, the opportunities available at SD Mines, and creating a dialogue with the students. During these visits, the coordinator also provides science fair preparation coaching to teachers and discusses potential avenues for future collaboration.

Contact:
Jade Herman, Special Projects Coordinator, President and Office of the President

Green Chemistry Outreach Program

The Green Chemistry outreach program is designed to promote excitement and an appreciation for both science and higher education to middle school and high school students. The program delivers educational resources aligned with the SD Science Standards for science teachers on the Pine Ridge Reservation and Rapid City area. The program aim is to stimulate students’ interest in chemistry, to demonstrate the relevance of chemistry in everyday life, and to encourage students to consider pursuing careers in STEM. Over 200 middle and high school students participated in Green Chemistry workshops at Chemistry and Applied Biological Sciences (CABS) labs on the SD Mines campus.

The Green Chemistry Summer Camp (July 9-14, 2017) was organized by Dr. Filipova. Three American Indian students from Timber Lake High School (SD) and one from Lewis & Clark Middle School (NE) participated in the Green Chemistry summer camp.

Dr. Filipova was mentor and supervisor of Elsie Dubray, 10th grade student form Timber Lake High School, Mobridge, SD on a research project titled “Buffalo vs. Beef: Analyzing Lipid Content in Search of Potential Health Benefits”. The research was presented by Elsie Dubray at the 62nd High Plains Regional Science and Engineering Fair, March 28th 2017 (won 1st place), at the International Science & Engineering Fair (ISEF) in Los Angeles, May 14-19, 2017 (won the 3rd place and a $1000 prize in the biochemistry category), at 4th annual Native Youth in Food and Agriculture Leadership Summit, July 16-25, 2017, University of Arkansas, and at 2017 AISES National Conference, September 21-23, 2017, Denver.

Contact:
Dr. Tsvetanka Filipova, Senior Lecturer of Chemistry, Chemistry and Applied Biological Sciences
Multicultural Affairs Pre-Orientation

This program is geared toward incoming American Indian students including non-traditional and transfer students. At the start of the fall semester, students come to campus the week before classes begin to start the acclimation process to college life. The Office of Residential Life allows students to move in prior to official move-in day. During this time students attend sessions to get oriented to their class schedule, meet their advisors, are paired with mentors, build relationships with each other, and learn how to be successful in college. If students participate in this program, some of their textbooks are covered through the OMA Book Loan Library.

Contacts:
Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs

American Indian Peer Mentor Program

To ensure that no American Indian student feels isolated or unsupported, peer mentorship is offered to all students who participate in the OMA Pre-Orientation as well as those who feel they could benefit from such a relationship. Mentors provide guidance, connection and support throughout the first semester. Although the commitment for students is only for the first semester, many continue their relationship well into the future. The goal of the program is to positively impact retention rates of American Indian students. Related objectives are for minority students to have a successful and satisfactory first year, whether they are first-time freshmen, transfer, or non-traditional students. The program is also geared toward reinforcing a Native support system for students who may feel out of place. Mentors are volunteers, but OMA does its best to compensate students when funds are available.

Contacts:
Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs

South Dakota Jump Start Program

The South Dakota Jump Start Program is a federally funded First in the World program designed to help students succeed in college by providing them a financial and academic “jump start”. This $3.6 million federal grant is shared among all six public universities in South Dakota and includes Oglala Lakota College. Eligible individuals are Native American and low-income students who have graduated from a South Dakota high school and want to attend college for the first time.

Participating students enter a summer campus-based experience prior to their freshman year of college to earn free college credits and have an opportunity to get acclimated to the campus. During the academic year, students work with a South Dakota Jump Start advisor on campus to connect with resources, create a success plan, and participate in Jump Start events and activities. Once a student enters the Jump Start Program they will be tracked through the end of their third year in school. The goal behind this program is to give students a Jump Start on college success by providing personnel and resources to give students momentum toward graduation.

RECRUITMENT CLOSED: Program Wrap-Up September 30, 2018 (possible 1-year extension)

Contacts:
Jesse Herrera, Director Multicultural Affairs; Kaylynn Two Bulls, Jump Start Advisor Multicultural Affairs
National Science Foundation (NSF) OSSPEEC II Grant

National Science Foundation (NSF) OSSPEEC II Grant is a Pre-Engineering Education Collaborative with Oglala Lakota College, South Dakota State University, and SD Mines. The project aims to increase recruitment, retention, persistence, and completion rates in pre-engineering and engineering for Native American students. OSSPEEC II provides culturally centered and integrated project based experiential learning through pre-engineering classroom activities and co-curricular activities consisting of research on reservation needs in the areas of water quality and quantity, geology, and sustainability. The project also investigates and elucidates the impact of the OSSPEEC model which emphasizes the importance of experiential learning and incorporation of the Lakota world view as the basis for making essentially correct preconceptions in engineering. The program is designed for Native American students to complete their first two years of engineering education at Oglala Lakota College and then to complete their engineering education at South Dakota State University or SD Mines. An additional goal of the OSSPEEC II project is to improve the quality of engineering education at Oglala Lakota College through professional development of faculty and staff.

Contacts:
Dr. Foster Sawyer, Associate Professor Geology and Geological Engineering;
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering

Engineering Projects in Community Service (EPICS)

Engineering Projects in Community Service (EPICS) program launched in the fall of 2016. Of the 23 EPICS universities worldwide, Mines is the first to partner with a tribal college, Oglala Lakota College (OLC), and strives to have at least 50 percent of the community design projects addressing critical needs on the Pine Ridge Reservation. The EPICS program offers technical training and professional development in collaboration, communication, project management, diversity awareness, and understanding social and cultural implications of engineering designs. The EPICS program features project teams that are multi-disciplinary, vertically-integrated, and student-led. Courses offered are: GE/IS 283/483 Community Design I and GE/IS 483/484 Community Design II; currently, 6 OLC students are participating in these design courses. Projects addressing the needs of Pine Ridge include:

- Designing a greenhouse and education center with the He Sapa OLC campus in Rapid City
- Emergency management and community facilities planning for the Pine Ridge Reservation in collaboration with Louis Berger, Inc.
- The design of bee hives for honey production on Pine Ridge Reservation with the Lakota Food Sovereignty Coalition
- The design of seed starter kits for home gardening in collaboration with Kyle Serenity Gardens and SDSU Extension’s iGrow
- Safety and environmental impacts of dams on Pine Ridge Reservation in collaboration with the Oglala Sioux Tribe Environmental Protection Program and the Bureau of Indian Affairs

Contacts:
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering; Dr. Andrea Surovek, Research Scientist Mechanical Engineering; Dr. Stuart Kellogg, Professor Industrial Engineering; Dr. Daniel Dolan, Professor Mechanical Engineering; Dr. Scott Kenner, Professor Civil and Environmental Engineering

Memorandum of Agreement: Oglala Sioux Tribe, Oglala Sioux Lakota Housing, Louis Berger, Inc.; South Dakota School of Mines & Technology, and U.S. Department of Agriculture

The MOA establishes a formal partnership between the institutions for the development of projects and service learning opportunities for students that address the needs of the OST and OSLH.

Contacts:
Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering; Dr. Scott Kenner, Professor Civil and Environmental Engineering; Dr. Demitris Kouris, Provost
Sustaining Urban Waters through Green Infrastructure

Sustaining Urban Waters through Green Infrastructure, through a U.S. EPA Urban Waters Small Grant project, Rapid City’s urban growth impact on the water quality of the Box Elder Creek drainage, a tributary to the Cheyenne River, was addressed. The project developed collaborations with a proposed large development project to implement innovative stormwater/greenway planning and design and demonstrated methods to protect urban waters before they become impaired. By partnering with the Rural American Initiatives (RAI) agency, the project directly engages the Native American community, supporting stakeholder involvement and education (K-12 through adult), and included a full-day educational event with approximately 80 Lakota middle and high school students with RAI.

Contacts:
Jason Phillips, Ph.D. student Civil and Environmental Engineering; Dr. Jennifer Benning, Associate Professor Civil and Environmental Engineering; Dr. Scott Kenner, Professor Civil and Environmental Engineering

Groundwater and surface water interactions modeling along the White River near Oglala, South Dakota

Radionuclide contamination in water has been found in areas near the White Clay fault in South Dakota, where streamflow losses along the White River are observed as well. The potentially contaminated water could migrate into the Arikaree aquifer through the fault and threaten the safety of drinking water in the Pine Ridge Indian Reservation. This work presents a collaboration between OLC and SD Mines for developing a coupled surface water-groundwater interactions model at the streamflow loss zone along the White River, near Oglala. The model developed in this work can be used to scientifically manage the water resources for the region. A graduate student from SD Mines and an undergraduate student from OLC will be supported by this project.

Contact:
Dr. Liangping Li, Assistant Professor, Geology and Geological Engineering

Emergency Fund

The Emergency Fund is intended for students with a dire financial need. The purpose is to assist students with unexpected expenses which may put them at risk for dropping out of school. Funds may be used to pay for vehicle repairs, utility bills, textbooks, counseling, and other support. This fund has also helped many students who have encountered acute financial need due to illness or injury, or loss of employment. Funds are accumulated from private donations. The Emergency Fund is open to all students including American Indian students.

Contact:
Dr. Pat Mahon, Vice President for Student Development and Dean of Students Student Development

American Indian Science & Engineering Society (AISES)

SD Mines has an award-winning AISES chapter that promotes excellence, leadership, and opportunities in education and professional development of students. AISES participates in national and regional conferences, scholarships, job placement assistance, internships and co-op opportunities, networking and social support, community service and campus involvement.

Contacts:
Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs
Office of Multicultural Affairs (OMA)

The Office of Multicultural Affairs (OMA) provides direct student support services for all underrepresented students, especially American Indian students. Support services include, but are not limited to, scholarship alerts, internship/co-op information, as well as providing opportunities for leadership and professional development. The OMA also provides leadership and helps to facilitate the coordination of programs to underrepresented groups, especially those related to American Indian students. The office reaches out to all underrepresented populations; holds free student lunches for networking and social support each semester; and coordinates the Honoring Ceremony for American Indian graduates. The OMA also collaborates with several departments across campus to promote diversity and inclusion initiatives for students, staff and faculty.

Contacts:
Jesse Herrera, Director Multicultural Affairs; Abena Songbird, Program Assistant II Multicultural Affairs

American Indian Honoring Ceremony

The OMA coordinates and sponsors the American Indian Honoring Ceremony established in December 2008. This is a special ceremony held in the spring the day before campus commencement. It celebrates and honors SD Mines Native graduates by providing a traditional meal for graduates, family, and invited community. Speakers are drawn from faculty, staff, alumni, and tribal communities. The Honoring Ceremony includes an invocation, prayers, songs, a traditional meal and presents to the graduates from their families.

Contact:
Abena Songbird, Program Assistant II Multicultural Affairs
Research Experiences for Undergraduates (REU)

SD Mines is host to two NSF REU programs, the NSF REU “Back to the Future” Site and the NSF REU “Security Printing and Anti-Counterfeiting Technologies (SPACT)” Site. These programs provide research opportunities for underrepresented students (particularly Native American students). The REU sites engage students in a funded 10-week summer undergraduate research experience. The sites are open to students from all backgrounds that are interested in science and engineering.

The theme of the “Back to the Future” site is Metallurgical/Materials engineering research, with many of the projects having historical, cultural, or artistic significance. Supplementary activities include many hands-on workshops involving art, history, and metallurgy some of which are led by local Lakota artists. The program website is located at: http://met.sdsmt.edu/reu/.

The REU SPACT site focuses on research to combat counterfeiting. Several of the past projects engaged students in the authentication of Native American artifacts. Recently, the SPACT research team and students have teamed with area museums such as the Heritage Center at Red Cloud Indian School to address issues with counterfeiting of Native American art. The program website is located at: http://spact-center.org/reu/.

As part of the site activities, undergraduate students are also involved in outreach activities which support ongoing programs that support Native American high school students such as the Army Educational Outreach REAP and UNITE program. Recent highlights include student presentations at the national American Indian Science and Engineering (AISES) conference and student mentoring of local Native American high school students. The sites have had an average participation of nearly 20% Native American students.

Contacts:
Dr. Michael West, Department Head and Associate Professor Department of Materials and Metallurgical Engineering; Dr. Grant Crawford, Associate Professor Department of Materials and Metallurgical Engineering

NSF Tiospaye Scholar Program

NSF Tiospaye Scholar Program has received three NSF S-STEM awards in excess of $1.8M of which 85% goes for scholarships for American Indian students in engineering, science, and mathematics. Applicants must be academically talented and financially needy. The program provides support in five areas: financial, academic, professional, cultural, and social. The students are provided weekly mentoring sessions, monthly mentoring with the director, weekly tutoring in key gateway classes including trigonometry, calculus, differential equations, chemistry, physics, computer programming, statics, and dynamics. Bi-weekly professional lunch meetings feature programming in the five areas of support. During the Spring 2018 semester, the program is supporting 12 scholars. Since the first scholarships were awarded in 2009, the program has graduated 36 scholars, including ten women, in the following STEM majors: Chemistry, Civil Engineering, Geological Engineering, Geology, Industrial Engineering & Engineering Management, Mechanical Engineering, Mining Engineering, and Physics. Currently, engineering students may receive up to $8K per year in scholarships. We are exploring options to continue to fund the program as current funding is likely to end in 2019. The Tiospaye Program moved into larger quarters in the summer of 2016.

Contact:
Dr. Carter Kerk, Professor of Industrial Engineering, Director NSF Tiospaye Scholar Program
SD Mines is a member of the NSF All Nations Louis Stokes Alliance for Minority Participation headquartered at Salish Kootenai College. The program provides merit-based scholarships for up to $1050 per semester, as well as travel funds for students to attend professional conferences. Since 2009, 50 SD Mines students have received over $78K in stipends.

Scholarships

In addition to the above programs, SD Mines has sought out and awarded through our Foundation over $49,000 in scholarships. These figures do not include the Tiospaye Scholarship, departmental scholarships, or other outside scholarships.

### AY 17-18 Available

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<th>Scholarship Fund</th>
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<td>VUCUREVICH, JOHN T. (MINORITY)*</td>
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<td><strong>Total</strong></td>
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*This scholarship will no longer be available after the 2017-2018 academic year.

Scholarships for African American, Hispanic, and American Indian students in the chemical sciences

The American Chemical Society (ACS) awards renewable scholarships to underrepresented minority students who want to enter the fields of chemistry or chemistry-related fields. Awards of up to $5,000 are given to qualified students. African American, Hispanic, or American Indian high school seniors or college freshman, sophomores, or juniors pursuing a college degree in the chemical sciences or chemical technology are eligible to apply.

**Contact:**
Dr. Justin Meyer, Senior Lecturer Chemistry and Applied Biological Sciences
NASA South Dakota Space Grant Consortium (SDSGC)

SD Mines is the lead institution of the SDSGC and seeks to expand opportunities for Native Americans in particular through education, research, and public services in the fields of aerospace, earth science, and supporting STEM disciplines. The goal of the SDSGC Fellowship/Scholarship program is “To administer a Fellowship/Scholarship program that offers educational and research opportunities to students from diverse backgrounds who are pursuing degrees in fields of STEM that align with NASA’s mission and those of SDSGC members and affiliates.” SDSGC’s Diversity goal is “To model diversity in all Consortium programs and activities, with an emphasis on Native Americans, which make up the state’s largest minority group.” SDSGC provided $2,068,800 in scholarships and fellowships to 675 students at nine South Dakota public, private, and tribal colleges/universities from FY2005-2017 and annually meets its objective of providing at least 15% of its awards to minority students; most of whom are Native American. Several Native American students at SD Mines have conducted 10-week summer and 16-week semester research internships at NASA Centers. The first Native American to graduate from SD Mines with a Ph.D. was largely supported by NASA funding.

Contact:
Thomas Durkin, Deputy Director of South Dakota Space Grant Consortium

South Dakota NASA EPSCoR Program

Under a Tribal College Collaboration Grant, SD NASA EPSCoR is funding a project at SDSMT titled “Groundwater and Surface Water Interactions Modeling along the White River near Oglala, South Dakota.” The principal investigator is Dr. Liangping Li in the Department of Geology and Geological Engineering (GGE). Dr. Li will collaborate with Dr. Foster Sawyer, also in GGE, and with Charles Jason Tinant of Oglala Lakota College (OLC). The one-year grant provides $15,000 for the project, which includes support one student from OLC. The project will use NASA remote sensing data to investigate possible streamflow losses along the White Clay fault and the impact on water resources for the Pine Ridge Indian Reservation.

Contacts:
Dr. Edward Duke, South Dakota Space Grant Consortium; Dr. Liangping Li, Principal Investigator for the Tribal College Collaboration Grant and Assistant Professor of Geology and Geological Engineering

Prosperity Initiative

The John T. Vucurevich Foundation seeks to invest in community programs and partners that align collaborative approaches to move people who aspire to break the cycle of poverty through a continuum of success from cradle to career. The vision of this program is a poverty informed community working from a common framework to help people achieve prosperity. This program serves the broad identities within our community, which could include the families of current or prospective American Indian students.

Contacts:
Nancy Sprynczynatyk, Counselor, Counseling and ADA Services; Tracy Palecek, Education Coordinator, Catholic Social Services, Family Services Department
Apex Gallery

The Apex Gallery has a tradition of exhibiting Native American artists and has shown the work of local, regional, and national tribal members.

Contact:
Allison Gilmore, Department Head and Professor Social Sciences and Department Head Humanities

Museum of Geology

Sally Shelton, Associate Director of the Museum, is helping to teach an ongoing paleontology monitoring class at Cheyenne River, which may include a session at the Museum's Paleontology Research Laboratory (PRL). This is intended to serve as a laboratory for any of our Lakota colleagues who need a place for fossil preparation and curation. In addition, the Museum offers tours to groups and schools from around the region, which includes Pine Ridge Schools.

We continue to manage fossils from South Dakota reservation lands, notably Pine Ridge, Rosebud, Cheyenne River, and Crow Creek, working with Tribal Historic Preservation Officers (THPO) and other tribal government representatives to determine the best way to store and care for these respectfully.

Our hope is to provide program resources in order to encourage all Native American students seeking certification for paleontology monitoring and mitigation jobs under the new Paleontology Resources Preservation Act. Paleontology resource management issues are extremely important on most of the tribal lands in the state.

Contact:
Dr. Laurie Anderson, Department Head/Professor Geology and Geological Engineering, Director of the Museum of Geology
The following is the mission statement for the Office of Multicultural Affairs (OMA) at SD Mines:
“The Office of Multicultural Affairs cultivates an inclusive campus climate that supports underrepresented populations, fosters respect for those with diverse backgrounds, and promotes cultural proficiency among faculty, staff and students.”

The SD Mines Inclusion Statement:
“South Dakota School of Mines & Technology is committed to cultivating an inclusive learning environment where faculty, staff, and students can grow and succeed. We value the diversity of unique backgrounds, experiences, perspectives, and talents within our community. It is our goal to promote a culture of respect, honor, understanding, integrity, and collaboration. It is through this diversity and inclusion that we find our strength.”

The South Dakota Board of Regents Factbook for the fiscal year of 2017 shows that American Indian students comprise of 3.31% (92 AI students) of the total student body (2,778) in the fall 2017 at SD Mines. In comparison to the previous year, there was a slight increase from 3.11% (89 AI students) in fall 2016. Also, in fall 2017, there were eight American Indian students pursuing graduate degrees and three pursuing doctorates.

SD Mines operates through Strategic Priorities, each with implications for American Indian support and access.

Goal One Student Success:
Prepare more undergraduate students for leadership in engineering and science

The American Indian population is among the highest minority population on campus. Within the state, SD Mines has the third highest percentage of American Indian students. Through the programs listed above American Indian students will continue to be supported and be successful.

Goal Two Research:
Increase research to prepare science and engineering experts, advance knowledge, and catalyze economic development

It is common in research proposals to include a section on how the research will impact the broader community. There are several service learning projects mentioned above involving American Indian students taking place on tribal reservations. Current and future graduate programs are designed to address and solve problems faced by tribal reservations. Many of these issues are specifically addressed through graduate and research programs in the Civil and Environmental, and Geological Engineering departments. Many of these research projects are pertinent to tribal communities.

Goal Three Facilities:
Redevelop and expand needed living, learning, and research spaces

An integral part of all strategic planning has been the development of a campus master plan for facilities expansion and improvement. Included in the ongoing discussion of this master plan is the proposal for a Multicultural Center. The purpose of this center would be to create a space where all underrepresented groups, including American Indian students might find comfort and community amidst the dominant culture on campus and within the Rapid City community.
**Goal Four People:**
*Recruit, develop, and retain excellent faculty and staff*

It is important to continue recruiting and retaining diverse faculty and staff. Diverse employees help to bring new ideas and methods to our rapidly changing country. Furthermore, such hiring could affect retention as students like to see faculty and staff that mirror their own community. This also means recognizing and rewarding employees for implementing the university’s strategic priorities. Employees who can incorporate aspects of multiculturalism into their classrooms or department are actively helping to promote a welcoming campus climate. The OMA is committed to increasing cultural proficiency on campus by inviting speakers to conduct sessions and workshops based on multiculturalism. The Intercultural Development Inventory (IDI) is an instrument used to assess, address, and develop a plan to better promote campus cultural proficiency.

**Goal Five Administration:**
*Responsibly steward financial and physical resources*

With the help of SD Mines Foundation, resources for American Indian initiatives are continually sought for and secured from a wide range of entities on and off campus. In addition to the scholarship amounts mentioned earlier, in the 2017-2018 academic year, the Office of Multicultural Affairs secured $32,500 in external funds for American Indian student support (not including scholarship funds):

- $5,000 from Shakopee Mdewakanton Sioux Community for American Indian initiatives
- $7,500 from Marilyn Jackson for student support initiatives
- $20,000 from GEAR UP for the OMA Book Loan Library

**Goal Six Development:**
*Establish a robust culture of philanthropy to enable the university to sustain excellence*

Through the many initiatives noted above, SD Mines is intentionally creating programs to promote inclusion among students, faculty and staff. Through the Mines Advantage program and the Global Perspective Inventory (GPI), students are encouraged to expand their global and cultural understanding. For employees, the IDI assessment is meant to address the areas of need regarding campus cultural proficiency. Through these initiatives there is an underlying message of service to the community and giving back to the university. Engaging students in this way fosters loyalty, now and long after they have graduated. By engaging alums, especially those of color, current students may be inspired to come back someday themselves.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Program</th>
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<tr>
<td>Anderson, Laurie</td>
<td>Department Head and Professor, Geology and Geological Engineering; Director, Museum of Geology</td>
<td>Museum of Geology</td>
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<tr>
<td>Benning, Jennifer</td>
<td>Associate Professor, Civil and Environmental Engineering</td>
<td>NSF PEEC, EPICS, MOA Tribal Project, Sustaining Urban Waters</td>
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<td>Crawford, Grant</td>
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<td>Dolan, Dan</td>
<td>Director, Center of Excellence for Advanced Manufacturing and Production; Senior Lecturer, Mechanical Engineering</td>
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<td>Duke, Edward</td>
<td>Manager of Analytical Services, Engineering and Mining Experiment Station; Professor, Geology and Geological Engineering</td>
<td>South Dakota NASA EPSCoR Program, South Dakota Space Grant Consortium</td>
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<td>Filipova, Tsvetanka</td>
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<td>Gilmore, Allison</td>
<td>Department Head and Professor Social Sciences; Department Head Humanities</td>
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<td>Herman, Jade</td>
<td>Special Projects Coordinator, President and Office of the President</td>
<td>Tribal School Outreach and Engagement Plan</td>
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<td>Herrera, Jesse</td>
<td>Director, Multicultural Affairs</td>
<td>OMA, AISES, Jump Start, Pre-Orientation Program</td>
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<td>Johnson, Brad</td>
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<td>Kerk, Carter</td>
<td>Professor, Industrial Engineering; Director NSF Tiospaye Scholars Program</td>
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<td>Kouris, Demitris</td>
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<td>Moore, Molly</td>
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<td>Palecek, Tracy</td>
<td>Education Coordinator, Catholic Social Services, Family Services Department</td>
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<td>Rankin, Jim</td>
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<td>SD Mines</td>
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<td>Sawyer, Foster</td>
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<td>Shelton, Sally</td>
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<td>Songbird, Abena</td>
<td>Program Assistant II, Office of Multicultural Affairs</td>
<td>OMA, AISES, AI Honoring Ceremony, Pre-Orientation Program</td>
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<td>Sprynczynatyk, Nancy</td>
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<tr>
<td>West, Mike</td>
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Hi Molly,
Our diversity reports are too large to send via email, so I have uploaded them to our Dropbox account. You can download them at
https://www.dropbox.com/sh/amt306rsz8b2s7c/AABCf6GisilXzaZA4nc8T99Fa?dl=0

If you have any trouble downloading them, please let me know.

Thank you,
Angela Davis
Administrative Assistant
Office of the President
South Dakota School of Mines & Technology
501 E. St. Joseph St.
Rapid City, SD 57701
(605) 394-2257