SD Mines Named one of “America’s 100 Best College Buys”

SD Mines has been named one of “America’s 100 Best College Buys” for the 17th consecutive year. This year’s list is the 19th published by Institutional Research & Evaluation, an independent research and consulting organization that specializes in the recruiting and retention of students. Each year the organization identifies the 100 U.S. colleges and universities that provide students with the highest quality education at the lowest cost.

According to the survey, the annual cost for in-state students is $14,605. The annual cost for out-of-state students at SD Mines is $18,125, the second best in the nation among schools surveyed. The average high school grade point average of 3.51 and the average ACT score of 26 for entering freshman at SD Mines exceed the corresponding national averages of 3.32 and 23.

“At a time when families are wondering whether a college education is worth it, we are providing an exceptional engineering and science education at a price families can afford,” said President Heather Wilson. “Mines is a model for the nation of how to keep a great college education affordable.”

SD Mines is the only institution in South Dakota listed in “America’s 100 Best College Buys,” and graduates are showing the value of a Mines education.

The university’s placement rate is 98 percent, with an average early-career salary for graduates of $65,600, according to the 2014-2015 PayScale report.

$1.25 Million Research Project to Improve Mine Ventilation

SD Mines has been awarded a $1.25 million contract to design more advanced underground ventilation systems in block caving mines. The five-year project from the National Institute for Occupational Safety and Health (NIOSH) seeks to create safer and more comfortable working environments and could also lead to more efficient production for mining companies.

Block caving is an underground hard rock mining method that involves undermining an ore body and allowing it to progressively collapse under its own weight. It is the underground version of open pit mining.

For the first year, NIOSH has awarded the project a contract for $250,000, renewable annually for five years. Phase 1 of the project aims to develop numerical models to predict geo-mechanical parameters such as caved rock porosity and permeability. The models will also predict ventilation parameters such as gas emission rates from the caved rock; resistance offered by the caved rock to airflow; and adequate supply of fresh air to dilute gases.

Purushotham Tukkaraja, Ph.D., of the Department of Mining Engineering & Management, will lead the research as principal investigator. “With the discovery of near-surface mineral deposits declining, exploring for deep-seated deposits and finding innovative ways to mine them is one viable solution to the ever-growing need for minerals.

Block caving is one such innovative way, and it has the potential to rival surface mining both in rate of mineral production and production cost,” said Tukkaraja.

The project seeks to develop a practicalmine ventilation design procedure that an operating block caving mine could use to predict gas emission rates and adequate airflows in underground working areas. It will also allow for the simulation of the caving process in an underground metal/nonmetal mine and for the validation of the numerical models through field measurements. Additionally, the project will analyze the ventilation system by incorporating cave resistance values in the network models.

“This kind of research that uses advanced modeling to study an applied problem in mining is the kind of research at which we excel,” said Heather Wilson, president of the university.

Tukkaraja will be joined by other SD Mines faculty members who will bring expertise in geo-mechanics and computational fluid dynamics to this interdisciplinary project. They include: Kurt Katzenstein, Ph.D., assistant professor, Department of Geology & Geological Engineering; Khosro Shahbazi, Ph.D., assistant professor, Department of Mechanical Engineering; and Lance Roberts, Ph.D., head and professor, Department of Mining Engineering & Management.

On the cover, from left to right: Avinash Gunti, Doruk Erogul (M.S. Mining); Dr. Khosro Shahbazi (Assistant Professor, Mechanical Engineering); Dr. Kurt Katzenstein (Assistant Professor, Geology and Geological Engineering); Dr. Purushotham Tukkaraja (Assistant Professor, Mining Engineering and Management), Anil Baysal (M.S. Mining); Kayode Ajayi (Kneeling: Ph.D. student, Mechanical Engineering).
From consoles to computers, the student group Gamers for Service at South Dakota Mines picked up the controls Saturday, Oct. 25, to save lives. Hosting its second-ever 25-hour gaming marathon, the organization raised more than $3,000 for the Children’s Miracle Network, which it donated through Rapid City Regional Hospital.

“Last year, 25 people participated. This year, we had 75 registered, and instead of hosting the event alone, we partnered with seven other organizations,” said Jordan Weaver, a chemical engineering sophomore from Sioux Falls and president of Gamers for Service.

Other student clubs co-sponsoring the event were: the Robotics team, Association of Computer Scientists, Mines Gaming Network, E-sports, Pokémon League, Game Development Team and various Dungeons and Dragons groups.

Gamers for Service joined groups around the globe participating in Extra Life, a gaming marathon in which players recruit sponsors and raise donations for Children’s Miracle Network hospitals. Since 2008, thousands of gamers have raised more than $8 million.

Trent Slichter, a chemical engineering senior from Sioux Falls and vice president of Gamers for Service, said that SD Mines remains the only university in the state to hold the marathon.

Extra Life was the second Gamers for Service fundraiser this fall. In September, the organization held a campus-wide game of Humans vs. Zombies, which attracted 140 participants and raised $800. The money was donated to Help Hope Live, a charity organization that helped a Rapid City resident pay for a heart and double lung transplant.

South Dakota Mines recently received a $20,000 gift from Peabody Energy for student support in the Department of Mining Engineering & Management. The gift will fund scholarships, travel and conference registrations as part of Peabody’s continuing support of the university.

A team of Peabody representatives was on campus during the university’s record Fall Career Fair to present the check to Lance Roberts, Ph.D., a 1998 alumnus and head of the Department of Mining Engineering & Management. Among Peabody’s team visiting campus were Ted Gardner and Chrissy Gilbert, human resources managers; Jim Guthrie, director of operational support and a 1979 alumnus; Josh Price, director of technical services a 2001 and 2003 alumnus; and Steve Hector, a senior engineer and 2009 alumnus.

“I want to personally thank Peabody for being such a great supporter of the mining engineering and management department at SDSM&T. I look forward to continuing the close relationship and know that we will continue to provide the best talent to serve their needs,” Roberts said.

Peabody Energy is the world’s largest private-sector coal company headquartered in St. Louis, Mo., with a workforce of more than 8,000 employees. Peabody President and Chief Operating Officer Glenn Kellow visited the SD Mines campus last April and delivered the keynote address at the spring commencement ceremony.
South Dakota Mines will celebrate Veterans Day from 11 a.m.-1 p.m. Friday, Nov. 7, with a ceremony and open house honoring its veterans. Located in the Student Activities and Leadership Center, the ceremony will begin with a presentation of the flag by the Honor Guard followed by remarks from President Heather Wilson who graduated from the U.S. Air Force Academy in the third class to include women.

The ceremony will also include an honor board, a photo wall of remembrance, a slideshow of military students, faculty, staff and their families and the Missing Man table, recognizing those who remain missing in action.

Apex Gallery Exhibit Features Art Crafted with Building Materials

“Garden” is among the Cathryn Mallory works of art crafted from simple building materials. Mallory’s “Typography” exhibit will be on display at the Apex Gallery until Nov. 7.

Yale’s Saltzman Receives 2014 Mines Medal

W. Mark Saltzman, an expert in biomedical engineering, drug delivery, tissue engineering and gene therapy, received the 2014 Mines Medal by Gov. Dennis Daugaard and SD Mines President Heather Wilson during a dinner and award ceremony.

Mines Designated Military-Friendly School for Sixth Consecutive Year

SD Mines has been designated a 2015 Military Friendly® School by Victory Media for the sixth consecutive year, having earned the distinction every year since the list’s inception.

The Military Friendly® Schools designation is awarded to the top 15 percent of colleges, universities and trade schools in the country that are doing the most to embrace military and veteran students and to dedicate resources to ensure their success.

Mines enrolled 158 active duty and veteran students this year, attracting students from all military branches.

“I’m particularly proud of our achievement this year, since the evaluation process for earning the military-friendly designation was even more rigorous than in past years. The fact that we have maintained this designation for six consecutive years shows that the support services we provide to our military students continue to be among the best in the country,” said Cathy Payne, director and scholarship coach, Veterans Resource Center.

Payne attributes the military-friendly designation to campus support services that help military students succeed, including a knowledgeable registration officer dedicated to certifying students’ military educational benefits; a partnership with Western Nebraska Community College TRIO Veterans Upward Bound, a program funded by the Department of Education offering free college-prep classes and tutoring in math and writing; information and referrals regarding VA benefits; and an active ROTC program.

“We work hard to make sure our veterans are supported, welcomed and successful at Mines. But more than that, our veterans are respected and welcomed on campus,” said President Heather Wilson. “We are very proud to earn this honor for the sixth year in a row.”

The Veterans Resource Center offers orientations for new military and veteran students, study space, lockers, veteran-to-veteran tutoring, counseling referrals, assistance with résumé writing, study skills and scholarship searches and applications, and regular, monthly visits by a patient advocate from the VA Black Hills Health Care System.
Family Weekend Game Day
A SD Mines student has received a full-ride nearly $66,000 Army ROTC scholarship based on his academic achievements, military aspirations and hard work.

Carson T. Purtell, 19, has been awarded $65,986 for four years. Purtell is a sophomore mechanical engineering student from Phoenix, Ariz. A cadet with the Mt. Rushmore ROTC Battalion program headquartered at SD Mines, Purtell played for the Hardrocker football team as a freshman and is active in a number of other campus and community activities.

“He's a hard worker from a family with a history of military service,” said Lt. Col. Lynna Speier, professor of military science and head of the Mt. Rushmore Battalion. “I have no question Carson will succeed at his goals of graduation from the School of Mines and military service. We are honored to have him part of our team.”

ROTC provides financial support to many students who commit to military service following graduation, Speier said. The U.S. Army supports cadets in their academic studies followed by service in active duty, the National Guard or the Army Reserve.

Purtell is an active member of the American Society for Mechanical Engineers and has participated in several community service projects at SD Mines, including a canned food drive and shoveling snow after Storm Atlas last October.

“We are very proud of Carson,” Speier said. “He is working very hard to develop himself academically, physically and professionally toward becoming an officer in the U.S. Army. The four-year scholarship is a signal of the Army’s confidence in his ability to graduate from the School of Mines and gain a commission.”

Purtell applied for the scholarship his freshman year after meeting eligibility requirements that included preparing an academic plan, meeting medical qualifications and completing a fitness exam.

SD Mines hosted the Mines Buddies Hardrocker Olympics at O’Harra Stadium on Oct. 29. The Hardrocker Track and Field team organized the event in conjunction with Mines Buddies, a campus organization which pairs SD Mines student volunteers with young adults throughout the community who have intellectual disabilities. College students offer support and mentoring by participating in a variety of one-on-one or group events.

“The Hardrocker Track and Field Team volunteers every year to give back to the community. We typically hold clinics for local middle and high school track teams, but this event has been fun because we got to come up with the events on our own, and we ran the meet. It’s less about teaching skills and more about creating friendly competition between the buddies,” said senior Haley Dunn, a Hardrocker hammer thrower and weight thrower. Dunn, a chemical engineering major from Meridian, Idaho, has volunteered with Mines Buddies for the past three years.

She was among about 25 SD Mines athletes who ran events, according to Hardrocker Track and Field Coach Jerry Schafer.

“Mines Buddies is an activity that several of our student-athletes have been involved in over the years. Many of the Mines Buddies compete in the Special Olympics, and this event gave them an opportunity to compete in a similar event,” Schafer said.
The SD Mines music program has received several string and woodwind instrument donations for student use.

Jim Feiszli, music program director, and his family donated his late father’s soprano saxophone and a double bass (string bass). Alumni Kelly and Lorie Whiting of Rapid City donated a violoncello, and Thomas Regan of Lead donated a soprano clarinet and a bass clarinet. The total estimated value of the gifts is nearly $10,000.

Feiszli, D.M.A., has fond memories of his father Warren Feiszli’s colorful musical career, including his prized instruments. The elder Feiszli passed away in July, and the family began to look for opportunities to continue his legacy and that of the instruments themselves.

Warren Feiszli was a classical and jazz musician who was headed to the Cincinnati Conservatory of Music on a full-ride scholarship when he was drafted into World War II.

Feiszli began service in the Quartermaster Corps, driving supply trucks. But when musicians at the MacDill Air Force Base in Florida had him sit in with them, they went to their commanding officer and requested he be transferred to the band. He spent the rest of WWII in the Pacific theater, playing for dignitaries such as Chiang Kai-shek and Douglas MacArthur.

When he returned from the war, he went to work for General Motors, repaired instruments as a side job and continued to play music.

“It is vital to have industry support and involvement with Youth Programs. It allows us to make our programs accessible for all students, regardless of financial limitations and restrictions. Students also come to camps trying to figure out what they would like to do after graduating from college. Industry involvement allows them to hear from SD Mines alumni and see where STEM has taken them in life,” said Shawna Delaney, director of Youth Programs.

Halliburton Donates $12,000 for SD Mines Summer Camp Scholarships

The Halliburton Foundation has donated $12,000 to SD Mines to provide scholarships for students attending Youth Programs’ summer science and engineering camps.

The grant, used for both academic and need-based scholarships, will make high-quality science, technology, engineering and math (STEM) experiences available to high school students of all means, including those who may not otherwise be able to attend one of the 12 residential camps SD Mines offers.

Impressed by its youth STEM initiatives, the Halliburton Foundation reached out to Youth Programs as one of a select few organizations invited to apply for a grant. The hands-on immersion camps give students a pre-college experience designed to build confidence in their technical abilities and showcase the possibilities a science or engineering career holds.

“We want to showcase American Indian fashion designers,” said Jesse Herrera, director of the university’s multicultural affairs office. “We want to break down stereotypes that American Indians look or dress a certain way.”

In truth, he said, there are many successful American Indian fashion designers who create and work with both traditional and contemporary designs. The fashion show, which is the first of its kind held on campus, will feature local models and local designers, Herrera said.

Fashion Show to Highlight Lakota Designers for Identification

In an effort to support local Native artists and break down stereotypes tied to American Indian culture, the South Dakota School of Mines & Technology will host a fashion show featuring northern plains designers, models and art vendors.

The Red Spirit Fashion Show will be at 6 p.m. Thursday, Nov. 13, in the Surbeck Center ballroom. The event is hosted by the Multicultural Affairs office on campus.

“Coordinator Dixie Holy Eagle said the Red Spirit Fashion Show has been featured at events such as Lakota Nation Invitational and the Central States Fair.

“It’s an honor and pleasure to serve the Native and non-Native community in the Black Hills area,” she said. “We hope it brings more cultural awareness to the students.”

The activity will do just that, Herrera said. One of the campus initiatives is called the Mines Advantage program, which encourages students to develop skills, including leadership, community service and global diversity.

“We’re trying to create a more well-rounded student who is culturally competent,” he said.

Three designers are currently signed up for the show, but Holy Eagle said there is room for more. For more information about the event, visit http://www.sdsmt.edu/Campus-Life/Student-Services/Multicultural-Affairs/.
Research recently published by a SD Mines professor and his team in *Marine Geology* offers new evidence that a massive underwater landslide combined with the 9.1 magnitude earthquake to trigger the deadly tsunami that killed nearly 20,000 people in Japan.

It was initially thought the earthquake was solely responsible for triggering the deadly March 2011 tsunami, but research by SD Mines Professor Timothy Masterlark, Ph.D., and his international colleagues discovered new evidence that points to a different conclusion.

“What we do here at Mines can literally have global impact.”

In most of the affected areas, waves reached about 10 meters, a height easily explained by the earthquake’s size – the fifth largest ever measured. However, near Japan’s Sanriku Coast, where waves neared 40 meters, the tsunami was unusually large even for an earthquake of that magnitude. Masterlark, who specializes in modeling, noted that his earthquake models alone were unable to reproduce waves of this size.

At the same time, one of Masterlark’s colleagues, David Tappin of the British Geological Survey, was looking at the shape of the sea floor where these monstrous waves hit. He soon found evidence of a large piece, 40 kilometers by 20 kilometers, that appeared as if it had broken off. Masterlark’s and Tappin’s modeling of the tsunami and earthquake together reproduced the waves that had devastated Japan’s coast, proving what the researchers suspected: the earthquake had triggered a underwater landslide the size of Paris, creating a wave that combined with the power of the earthquake reached deadly proportions.

They submitted their research to *Marine Geology*, and a press release was soon thereafter published in the prestigious journal *Science* and picked up by NBC News.

Masterlark said this research is a game changer. “If we want to warn people and work with governments, we have to be able to tell them how big tsunamis will be, and we can’t do that with just earthquake data. You do an earthquake simulation, then based on that, predict a sea floor shift, and then predict the tsunami to give the true worst-case scenario,” he explained.

Though a veteran of natural disaster research, having studied earthquakes for more than a decade, Masterlark is excited about the possibilities such wide publication of this research may bring.

“The scientific community is demanding more information, and some of my colleagues are working with folks in Japan right now to get a ship to go out there, do more geophysical observations and verify the piece that broke off, in order to pin down what it looks like. I’m very excited about this because it really changes what kinds of tsunamis we can predict,” he said. “It’s an opportunity for us to understand what we do here at Mines can literally have global impact.”

Masterlark is an associate professor in the Department of Geology & Geological Engineering.

About Legacy News

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