Mines Signs Collaborative Agreement with Harvard Business School

The South Dakota School of Mines & Technology has signed a collaborative agreement with the Harvard Business School to make available the HBX Credential of Readiness (CORe) business fundamentals program to SD Mines students.

The HBX Credential of Readiness (CORe) is a multi-week online program focused on the fundamentals of business thinking. Designed for non-business majors, CORe includes coursework in business analytics, economics for managers and financial accounting taught using the Harvard Business School case-study method.

“Several of our students took CORe last summer and rated it highly as a good complement to our exceptional engineering program. We are particularly interested in encouraging our students to take this program while on internships and co-ops,” said Heather Wilson, president of the South Dakota School of Mines & Technology.

In recent years, 78 percent of SD Mines students have had at least one paid internship or co-op experience in industry before graduation.

The program is taught entirely by Harvard Business School faculty and is offered online through the school’s unique HBX platform with a worldwide cohort of students. HBX will reserve space for Mines students in each CORe cohort, and Mines will share information with HBX on financial aid eligibility for need-based scholarships. Because the workload requires approximately 150 hours and takes place over a multi-week period, Mines will recommend students participate in CORe while on internship or co-op to enhance their professional readiness.

“Through this agreement, we are delighted to bring the CORe program to the South Dakota School of Mines & Technology and look forward to deepening our engagement with this community,” said Harvard Business School professor Bharat Anand, faculty chair of HBX.

Mines students may apply now for the next HBX CORe programs beginning May 17 or June 7.

To complement its array of engineering and science majors, SD Mines offers the Six Sigma Greenbelt, Certificate in Engineering Management and Leadership, Global Engineering Certificate and Technology Innovation Certificate, as well as its signature Mines Advantage professional development program designed to boost the workplace success of its graduates.

Learn more at the HBX or South Dakota Mines HBX Credential of Readiness in Business webpages.

Nathan Streyle Selected as National Co-op Student

Nathan Streyle, a SD Mines mechanical engineering senior from Sioux Falls, has been selected for the national Co-op Student Achievement Award, for his work at Emerson Process Management, Fisher Controls International LLC.

The Cooperative Education & Internship Association (CEIA) selects one student each year nationwide. It is the second consecutive year that a Mines student has received the prestigious honor.

Seventy-eight percent of Mines students have at least one paid internship or co-op before graduating. Last year, Streyle was one of 530 Mines students who completed an internship or co-op at 225 companies throughout the country.

“The integration of study with professional work experience prepares our students to succeed,” said Heather Wilson, SD Mines president. “Mines places a lot of emphasis on experiential learning, and we are very pleased that Nathan has been recognized nationally for his success.”

Streyle is working at Bobcat this spring semester on a separate co-op work experience and will receive his award at the CEIA Conference in April.

As an Emerson co-op last spring, Streyle worked as a test and evaluation engineer who designed, built and ran test setups for fugitive emission testing, cycle testing and step response testing. He also worked with design engineers, customers and manufacturing to determine testing parameters and analyzed, reported and presented test results for the Fortune 500 company.

Streyle will graduate from Mines next year and plans to enter the engineering field in research and development, eventually earning a master’s in business or engineering management.

“The test engineering co-op with Emerson has profoundly impacted my college and future career by providing what the classroom could not: hands-on application,” Streyle said.

As an SD Mines student, Streyle has been on the Robotics Design Team, Human Powered Vehicle Design Team and participated in the Global Summit Leadership Conference. He has also been a leader in the InterVarsity campus organization and has participated in intramural sports.

He will receive a $500 cash award from the national organization and an additional $500 from the university’s Career & Professional Development Center, which nominated him for the honor.

Learn more at the HBX or South Dakota Mines HBX Credential of Readiness in Business webpages.
Zach Tinker will be the new head coach of the SD Mines Hardrockers football program. Tinker has served as the assistant head coach and offensive coordinator for the Hardrockers.

“Coach Tinker has been the right-hand man of the Hardrocker football program under Coach Collins. He is the same kind of high-expectations, values-driven leader that we need here,” said SD Mines President Heather Wilson. “I know he likes to win football games. I also know he likes to recruit students who will succeed at SD Mines and help them to develop into leaders in engineering and science.”

Under Tinker’s direction, Mines has become a high-energy offense able to move the ball up and down the football field with ease. Tinker’s style of play and philosophies have yielded a number of team records on the offensive side of the ball, including total plays, total yards, passing yards, passing attempts, total first downs and points scored in a season. He was also instrumental in the program earning two winning seasons in four years.

“I am honored and humbled that President Wilson and our Athletics Director Joel Lueken have put their trust in me to be the head football coach. I’d like to thank Stacy for bringing me to the Black Hills four years ago to help establish Rapid City’s Hometown Team at the Division II level. Our players are anxious to continue preparation for the 2016 season and the challenging schedule that awaits us in our inaugural RMAC campaign,” Tinker said. The offense has also been rated high in the NCAA Div. II ranks as the team boasted the No. 1 red zone offense and the No. 25 scoring offense during the 2013 campaign.

“I couldn’t be more excited to have Coach Tinker as our next head football coach,” said Hardrocker Athletics Director Joel Lueken. “Zach brings a tremendous amount of energy, passion and (NCAA) Div. II experience to the head football coaching position. He truly understands the term scholar-athlete, and through his leadership we will continue to graduate leaders in science and engineering.”

Tinker joined Mines after a successful stint at Eastern Oregon University in La Grande, Ore., where he was the assistant head coach as well as the offensive and recruiting coordinator (2008-2011). Tinker spent four seasons with the Eastern Oregon Mounties, a NAIA Div. I institution. While there Tinker also served as the quarterbacks and wide receivers coach. He also made coaching stops at Southern Oregon University in Ashland, Ore., and Western Washington University in Bellingham, Wash. During that stint, he served as the special teams coordinator and wide receivers coach (2007) at Southern Oregon and was the offensive line coach, tight ends coach and recruiting coordinator at his alma mater Western Washington (2003-2007). Tinker and his wife, Marnie, have two children, Joey (22) and Julianna (14).

As an offensive asset to the Hardrockers, Tinker believes the key to football success is being able to make in-game adjustments, being flexible and to attack personnel matchups to name a few. He believes an aggressive game plan will net positive results.
Exceptional Academic Achievements Part of the Game for SD Mines Athletes

While some universities tout their student athletes, the South Dakota School of Mines celebrates its exceptional scholar-athletes. At a ceremony during halftime of a recent basketball game, Mines announced that, for 15 consecutive semesters dating back to 2008, Hardrocker athletes have earned an average cumulative Grade Point Average (GPA) above a 3.0. That is consistently higher than the average of the entire SD Mines student body.

“Our philosophy is that college athletes should balance sports at a high level with academic achievement,” said SD Mines President Heather Wilson. “Our athletes are well-rounded engineers and scientists who are studying hard and playing hard. We’re proud of them.”

While maintaining a high academic standard, Hardrocker Athletics has continued to grow as a group as well. Since the fall semester of 2008, SD Mines has added an additional 83 scholar-athletes with the addition of men’s soccer and the expansion of team rosters as the university became a Division II NCAA school and joined the Rocky Mountain Athletic Conference. That is over a 45 percent increase to the total number of scholar-athletes, making the continued academic success of these athletes all the more impressive.

“Hardrocker women’s basketball coach Ryan Larsen commends faculty and staff, as well as the scholar-athletes, in their dedication to the high academic achievements. “SD Mines professors and staff cannot go unrecognized. Their obligation to help our student athletes succeed makes SD Mines a superlative institution of higher education,” Larsen said.

To help maintain the high academic standard, SD Mines Athletics started an Academic Investment (AI) program at the start of the 2015-16 school year.

“With the initiation of the Academic Investment program in 2015, our main goal is to prepare our scholar-athletes to manage their time efficiently as well as maintain a high level of organization in regards to their academic environment,” said SD Mines Associate Athletic Director Tiffany McCampbell. “This program requires first-semester freshman, transfers and scholar-athletes with a GPA below 3.0 to attend study hall with coaches until they achieve a 3.0 GPA.”

Mines Holds Food Drive, Builds Giant Canned Food Sculpture for Charity

The Mines American Society of Civil Engineers participated in Construction using canned food to build a giant Minion. The Construction event showcased colossal structures from community organizations made out of canned food in a week-long competition. Rapid City Leadership Class of 2014 is hosting the event to benefit Feeding South Dakota and the Hope Center.

Other teams included Black Hills Federal Credit Union, Boys Scout Venture Crew 320, HDR Engineering and Banner Associates.

The team won and Best Meal and Honorable Mention. Canned food will be donated to Feeding South Dakota, and monetary proceeds will go towards the addition of an in-house laundry facility in the HOPE Center, laundry supplies and the project Soap for HOPE.

The Student Activities & Leadership Center and Alpha Omega Epsilon also hosted a canned food drive to benefit Feeding South Dakota on Fat Tuesday.

Fermentation Club Hosts Fundraiser for Safe Rides Program

The Fermentation Club of the South Dakota School of Mines & Technology hosted a fundraiser to benefit the university’s Safe Rides Program for students, as well as the club.

All proceeds from the beer sales will benefit the club and the Safe Rides program, which offers rides to university students through Rapid Taxi.

Brewed at Crow Peak Brewing Company, the India Pale Ale was on tap at Independent Ale.

The bright and citrusy beer, named “Study Break,” is brewed with Citra hops, citrus zest, and clementine puree and was brewed during a full industrial run at Crow Peak in Spearfish in late January.

“This is a great opportunity for us to raise some funds for a program that many students take for granted and to help take the burden off the school,” said Tom Hinkemeyer, a mechanical engineering major and one of the Fermentation Club members organizing the event.

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YouTube Star, Chicago Field Museum Correspondent Coming to Mines

Emily Graslie, chief curiosity correspondent at Chicago’s Field Museum of Natural History, will speak at the South Dakota School of Mines & Technology at 4 p.m. Thursday, March 3, in the Surbeck Center Ballroom on campus. The event is open to the public and the media.

Graslie’s YouTube channel, “The Brain Scoop,” is listed as one of the “New Media Rockstars” by the online magazine of the same name and has been featured on The Huffington Post, New York Times, National Public Radio, Scientific American and the Chicago Sun-Times.

In her talk, Graslie will speak on women in science, technology, engineering and math (STEM) fields. Geared towards high school and college women in STEM, the event is sponsored by Mines’ Women in Science & Engineering and the Office of Multicultural Affairs.

Graslie will also speak at the Women in Science Conference Tuesday, March 8, which is co-organized by SD Mines Women in Science & Engineering and Youth in Science Rapid City. The event is a free, one-day career learning workshop designed to provide young women in grades six through 12 with engaging opportunities to learn about careers in science, technology, engineering and math. Last year, 500 students from 15 schools across South Dakota and Wyoming attended. This year, attendance is anticipated to be over 600 students.

Spring Career Fair Hosts Nearly 100 Employers

SD Mines hosted 91 employers for the annual spring Career Fair, including 13 who recruited on campus for the first time. Around 1,000 Mines students attended, networking with employers including Alcoa, Barrick Gold, Bobcat, Cargill, Caterpillar, Daktronics, Kiewit, Kimberly Clark, Nucor and Sandia National Laboratories, as well as regional companies and engineering firms.

In all, 90 employers from 18 states, including 32 from South Dakota, were on hand to visit with Mines students.

In addition, nearly half of the employers stayed to conduct next-day interviews. SD Mines graduates continue to be in demand, with a 98 percent placement rate and an average starting salary of over $62,300.

Moore Speaks on Renewable Energy in Africa

Sharlissa Moore, Ph.D., kicked off the Women in Science & Engineering (WISE) Speaker Series. Moore’s studies in astronomy and physics have led her from researching solar and wind energy in North Africa to impact policy at the White House. Published in multiple journals for her work on sustainable development, Moore teaches international energy policy at Michigan State University. Geared toward high school and college females, Moore offered career advice, a fresh perspective on where education and research can lead and how science, technology, engineering and math studies span the globe.

Intern Spotlight

Rebecca Ceremuga
Senior, mechanical engineering, pre-med

As an intern at Medtronic’s Renal Care Solutions, Rebecca Ceremuga helped develop a new cartridge for dialysis machines, the only alternative to an organ transplant for patients with kidney failure. With plans to attend medical school, she now works as a medical scribe and shadows a range of doctors in neurology, neurosurgery, orthopedic medicine and trauma.
The 2016 Engineers Week was celebrated Feb. 16-20 with events for university students, hundreds of area middle school students and the general public. Over 400 middle and high school students converged on campus for tours and demonstrations by academic departments, a visit to the Museum of Geology and a NASA presentation.

Faculty and students also teamed up for Mines Myth Busters & Super Science to debunk or prove some of history’s most popular urban legends and offer interactive experiments Feb. 16 at the Surbeck Center ballroom on campus. Around 200 attendees watched as Mines Myth Busters walked on fire, tested household items for radioactivity, learned about forces in a snowmobile tug-of-war and floated concrete.

The public also attended magic chemistry shows, featuring experiments involving chemicals that create colorful smoke and flames. Tom Durkin, deputy director and outreach coordinator of the South Dakota Space Grant Consortium headquartered at the School of Mines, presented “NASA’s Mission to Pluto” that same day.
Stanford, NASA Scientists Speak on Energy, Biomedical Engineering

The SD Mines Chemical and Biological Engineering speaker series launched with Stacey Bent, Ph.D., of Stanford University, who spoke on nanoscale materials for sustainable energy. Other speakers from Pacific Northwest Laboratory, NASA and Princeton will speak on topics ranging from biomedical engineering to biofuels.

Bent’s presentation focused on creating nanoscale materials for solar cells and water splitting to produce hydrogen for fuel. “With the intensifying global need for alternative energy, there is strong interest in developing new materials for sustainable energy devices. Underlying a diverse set of energy conversion devices are similar physical and chemical phenomena, many of which can be controlled with nanoscale materials,” she said.

Bent is the chair of the Department of Chemical Engineering at Stanford University. Bent’s research has been published in over 200 papers, and she has presented nearly 250 talks. An associate editor of Chemistry of Materials, Bent has been recognized with a number of awards for research and teaching, including a National Science Foundation CAREER Award.

Vinod Amar and Ian Walters from SD Mines spoke on water production March 1.

The speaker series will also include:
March 15 – Tim Tesslink, Solar Photovoltaics, GenPro Energy Solutions
March 22 – Doug Elliot, Ph.D., Biofuels and Bioenergy, Pacific Northwestern National Laboratory
April 8 – Bruce Koel, Ph.D., Catalysis and Materials, Princeton University
April 12 – Travis Walker, Ph.D., Complex Fluids and Soft Materials, Oregon State University
April 19 – Kara Spiller, Ph.D., Biomedical Engineering, Drexel University
April 26 – Meyya Meyyappan, Ph.D., Sensors, NASA

Physics Senior Takes Underground Research to Capitol

Joe VanDriel, a senior physics major at SD Mines, presented his underground research at the State Capitol in Pierre at the 2016 Student Research Poster Session.

VanDriel is working on the Compact Accelerator System Performing Astrophysical Research (CASPAR) project, a multi-university collaboration a mile below the surface at the Sanford Underground Research Facility in Lead. The CASPAR accelerator will help researchers mimic nuclear fusion in stars to help complete scientists’ understanding of the mechanisms that generate energies in stars, the number of neutrinos produced in the Sun and how elements in the universe are built.

CASPAR’s principal investigator is Frank Strieder, Ph.D., physics department. The collaboration includes Colorado School of Mines and the University of Notre Dame.

Above ground, VanDriel assembled and tested a CASPAR vacuum system before disassembling and shipping it underground. In Sanford’s CASPAR laboratory VanDriel helped assemble a beam line and install the accelerator in preparation for when the experiment begins taking data this summer.

VanDriel, from Mitchell, is among 13 student from South Dakota colleges and universities at the State Capitol sharing their research with state lawmakers and the public.

The session is organized by the South Dakota Board of Regents, South Dakota’s Experimental Program to Stimulate Competitive Research (EPSCoR), and the Governor’s Office of Economic Development.

SD Mines Students Use Math to Take a Bath in Modeling Contest

Three students from the South Dakota School of Mines & Technology participated in the 32nd annual Mathematical Contest in Modeling Jan. 30-31. The international contest is hosted by the Consortium for Mathematics and Its Applications.

Thousands of three-person teams from throughout the world are given open-ended complex problems and challenged to research a topic, develop a mathematical model, use a computer to simulate the model and write a technical report all in one weekend. Teams compete for the chance to win one of two $10,000 Sigma Scholarship Awards. Results will be announced in April.

The SD Mines team members were Noah Brubaker, a senior majoring in math and computer science from Lincoln, Neb.; Quinn Del Val, a sophomore majoring in math and physics from Fargo, N.D.; and Ryan Waggner, a sophomore majoring in math from Alliance, Neb.

They were asked to manage the temperature of a bath with no circulation system. The challenge was to control the flow of incoming warm water, using the least amount possible, with existing water to maintain a uniform temperature in the tub.

“This is a great illustration of the challenge that occurs when students work on an open-ended question that allows students to apply creative solutions to a problem, reflect on their work, and critically analyze the results. This type of experience helps develop the skills that many employers are looking for and it is a great way for students to discover what they can accomplish with the math content they learn in their classes,” said Kyle Riley, Ph.D., associate professor and head of the Department of Mathematics & Computer Science.

Solutions are judged by mathematicians and educators from across the country.

Additional information on the contest may be found at http://www.comap.com/undergraduate/contests/.
New Exhibit Features Chainmail, Chessboards and Interdisciplinary Art

South Dakota Mines students and alumni are exhibiting their work at the Apex Galley on campus in an interdisciplinary exhibit, titled “Communicate/Innovate/Fabricate,” featuring work ranging from drawings and metal roses to chessboards and chainmail. The exhibit will run through March 24.

Dreyer Lectures on Military Advisors in Afghanistan from Soviets to Today


“Military advising missions act as the basis for the spread of norms to smaller and less advanced armies. In this presentation I discussed how advisory missions operate, how they succeed or fail, and if they have any lasting impact on the objectives of their parent militaries. I briefly discussed the idea of norms and war then delved into a more in-depth examination of the actions of various advising missions, concentrating on the Soviet and American experience in Afghanistan,” said Dreyer, an associate professor of social sciences at SD Mines.

Community Attends Drug Awareness Event at SD Mines

The South Dakota School of Mines & Technology hosted a drug awareness presentation. Sgt. Tony Harrison, lead on the Rapid City Police Department’s UNET Drug Task Force, and Mark Vargo, Pennington County State’s Attorney, were featured panelists. Drug trends in Rapid City, state laws and legal consequences, as well as long-term academic and career effects were among the topics.

Interactive Series Raises Awareness of Poverty Plight

An interactive series on poverty awareness is being hosted at the South Dakota School of Mines & Technology campus to shed light on the realities of poverty and serve as a call to action.

The three-part series covered topics such as cultural and global diversity, personal development and community involvement and will be led by Kelsie Lawrence of the Rapid City Prosperity Initiative.

More than 20 agencies from Rapid City and the Black Hills region participate in the Prosperity Initiative, which strives to improve lives by assisting individuals in the transition from poverty to prosperity.

The interactive sessions aim primarily at personal and professional development of Mines students, faculty and staff. The media is invited.

All sessions will be at 6 p.m. in the Surbeck Center ballroom. The first session was March 1. Others are:

March 14 – “Can you really become successful alone?” (Personal Development): This interactive session will explore internal/external assets and how individual privilege plays a role in personal success. There will be a discussion on how living in the crisis of poverty can cause barriers to success.

March 21 – “The Community Needs You!” (Community Involvement): This session focuses on a call to action for all who would like to learn more about helping individuals transition from poverty to prosperity. Community involvement helps others as well as enhances the lives and personal wellbeing of volunteers.

About Legacy News

Legacy News is produced by the Office of University Relations the first Wednesday of each month. The newsletter is a compilation of news releases, photos and Web articles.

To submit news or story ideas or to subscribe to the email distribution list, please contact Dani Mason, public relations officer, at 605.394.2554 or at Danielle.Mason@sdsmt.edu. For more Mines news, visit news.sdsmt.edu

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