Foundation Board of Trustees Announces New President

Joel Kincart has been hired to become the next president of the South Dakota School of Mines & Technology Foundation. Kincart will start his new role at the Foundation on March 9. Kincart is currently chief operating officer of the Utah Valley University (UVU) Foundation and senior director of development at UVU. In this capacity, he has day-to-day responsibilities for the UVU Foundation and its board. Kincart also oversees the college-based development team, gift planning, development services and development research at Utah Valley University.

Prior to UVU, Kincart served as the central region vice president for the American Cancer Society. He has also held fundraising positions at the University of Utah, Utah State University, George Washington University, Georgetown University and the University of Maryland.

“I am very excited to be joining the South Dakota School of Mines & Technology Foundation. The School of Mines is an exceptional institution with loyal alumni. I am impressed with the leadership offered by President (Heather) Wilson as well as the leadership the Foundation board has demonstrated in preparing the Foundation for a great future,” Kincart said.

Kincart will succeed Mike Selzer, who will continue as a member of the Foundation’s development team.

“We conducted a national search and are very pleased that Joel will be joining us as the next president of the Foundation. Joel brings a wealth of experience in academic fundraising, and we look forward to his leadership as we implement the strategic plans of both the School of Mines and the Foundation,” said Lorin Brass, chairman of the Foundation’s Board of Trustees. “We are also thankful for Mike’s service as the Foundation president and are pleased that he will continue to help raise needed funds for the university.”

“The relationship between the Foundation and the university has never been better. Mike Selzer has done a great job, and the board is implementing this planned succession by bringing in a top-tier fundraising leader as we start a significant capital campaign,” President Wilson said. “Joel has the experience to take our relationship to the next level. We’re building an even greater team.”

Kincart earned both a Bachelor of Science degree in Zoology and a Master of Science degree in Higher Education from Iowa State University.

Spring Career Fair Hosts Record Number of Employers

The School of Mines hosted a record 100 employers for the annual spring Career Fair, including 13 who were recruiting on campus for the first time.

Around 1,200 Mines students attended, networking with employers including Barrick Gold, Cargill, Caterpillar, Kimberly-Clark and Nucor Corporation, as well as regional companies and engineering firms. In all, 100 employers from 18 states, including 35 from South Dakota, visited with Mines students. In addition, nearly half of the employers stayed to conduct next-day interviews with approximately 500 students.

This was the largest spring Career Fair ever held on campus. The traditionally larger fall Career Fair also broke a record in September with 153 companies recruiting on campus.

Mines graduates continue to be in demand, with a 98 percent placement rate and an average early-career salary of $65,600, according to the 2014-2015 PayScale report.

$1.4M Raised for Energy Resources Initiative

SD Mines has announced that $1.4 million has been raised for its new Energy Resources Initiative, and the search will begin for a director.

The initiative includes both research and teaching to better meet the growing demands of the upstream and downstream oil and gas industry. The Energy Resources Initiative was announced last summer along with the creation of a minor in petroleum systems and leverages the university’s expertise and research in rock properties, water resources and materials development, as well as its location in an energy-rich pocket of the country, within 300 miles of the Williston, Denver and Powder River basins.

“This fall our first students started courses in the petroleum systems minor. We will have our first petroleum field camp this summer, and, with the support of very generous donors, we are now ready to recruit a program director and senior faculty member to lead the initiative,” said SD Mines President Heather Wilson.

A search will begin immediately for a new senior faculty member in petrophysics or geomechanics who will serve as director of the Energy Resources Initiative. The new director will have broad leadership responsibility for significant research, teaching, fundraising and further development of the initiative.

“Funding for the Energy Resources Initiative is off to a great start thanks to the collaborative efforts of the university’s Foundation and staff. We are encouraged by the support of alumni and energy industry members and are well on our way towards our goal of being able to provide better-prepared students to industry,” said Steve O’Rourke, an alumnus who is serving as chair of the steering committee. O’Rourke, president of Heat Mining LLC, is former president of global exploration for BHP Billiton.

With 20 percent of SD Mines graduates already hired into the energy industry, the interdisciplinary Energy Resources Initiative aims to better prepare students for more advanced career options, as well as position the university’s faculty researchers as resources for upstream and downstream oil and gas companies.

The university is also developing a graduate certificate in petroleum systems focusing on graduate-level training.

Last summer SD Mines was among a handful of higher education institutions invited to testify before a Congressional subcommittee on its energy education efforts.

For additional information about the Energy Resources Initiative: http://www.sdsmt.edu/Campaign/Energy-Resources/Energy-Resources-Initiative/
Students to Showcase QR Code Research at State Capitol

Research of South Dakota School of Mines & Technology students, which has led to development of an invisible ink reader with significant economic growth potential, will be showcased in the state capitol tomorrow, March 5.

The research addresses technology gaps in the development and commercialization of a cyber-enabled device that, among other things, can read and decode covert markings of inks embedded in QR codes which are invisible to the naked eye.

The trio of John J. Rapp, a mechanical engineering major from Rapid City, Julian A. Brackins, a computer science major from Rapid City, and David F. Langerman, a computer engineering major from Hermosa, will display their work in the capitol’s rotunda during the annual South Dakota Board of Regents Student Poster Session from 11 a.m.-3 p.m. Rapp, Brackins and Langerman are among 15 undergraduates selected from colleges and universities throughout the state.

With national security implications, their research builds upon a patent-pending process jointly conducted by SD Mines and the University of South Dakota (USD) and is currently being evaluated by the private sector for licensing and commercialization. Use of this technology could thwart counterfeiting, detect security breaches and be used in many other applications.

The project funded by the National Science Foundation focuses on reading and translating newly-developed nanoparticle-based inks embedded into QR codes and invisible to the naked eye. The covert red-green-blue markings are “upconverted” upon excitation with near-infrared light and decoded with a smartphone or other reader.

The multidisciplinary student team has integrated software, hardware and 3D printing to create a unique reader system that holds great intellectual property potential.

“Fifteen percent of our undergraduate students at Mines are involved in externally sponsored research. That’s very high and I’m glad these students have had such a great opportunity to do the research and present it,” said SD Mines President Heather Wilson.

Research on covert markings in QR codes conducted by Mines and USD made international news over two years ago with published research announcing the discovery of a secure QR Code. The work led to the 2013 establishment of the Center for Security Printing and Anti-Counterfeiting Technology (SPACT), headquartered on the SD Mines campus.

Mines students displaying at the Student Poster Session are advised by Jon Kellar, Ph.D., and William Cross, Ph.D., of SD Mines and Stan May, Ph.D., of USD.

The poster session is organized by the Research Affairs Council of the South Dakota Board of Regents, SD EPSCoR and the Governor’s Office of Economic Development.

Mines Tops the List of Best Public Universities for ROI in Wall Street Journal

South Dakota School of Mines & Technology tops the list of “Best Public Universities for Returns on Investment” in a March 2 article published in the Wall Street Journal. The rankings accompanied a bigger-picture story examining whether private colleges are worth the additional cost, inviting Levi Bisonn, a high-school senior, Patty Pogemiller, director of talent acquisition at Deloitte, and Scott Thomas, dean of the School of Educational Studies at Claremont Graduate University in California, to weigh in.

Based on projected earnings over 20 years, the Wall Street Journal highlights colleges and universities that offer the best tuition value for all majors, according to the 2014 PayScale Return on Investment (ROI) Report.

Mines came in at 10.9 percent ROI with a 20-year net ROI of $656,000, outpacing second-place, New Mexico Institute of Mining & Technology, by nearly 2 percent and more than $100,000, and catapulting past the competition including universities such as Colorado School of Mines, Massachusetts Maritime Academy, Georgia Institute of Technology and Texas A&M.

The cost of a Mines degree also came in at nearly $25,000 less than the New Mexico Institute of Mining & Technology. Four-year cost was based on 2013 out-of-state tuition, room and board on campus, with no financial aid.

“Mines provides an exceptional education at a price families can afford,” said SD Mines President Heather Wilson.

The School of Mines placement rate is 98 percent, with an average early-career salary for graduates of $65,600, according to the most recent PayScale report.

Additionally, Mines was recently named first nationwide in the 2015 ranking of the “50 Best Online Master’s in Engineering Programs” by Best Master’s Programs, an online graduate school guide that showcases universities doing the best job of balancing cost and quality. The ranking is based on an equal weight of program quality, as measured by U.S. News & World Report, and estimated program cost.

The full Wall Street Journal story and ranking of “Best Public Universities for Returns on Investment” may be found here: http://www.wsj.com/articles/are-prestigious-private-colleges-worth-the-cost-1425271052.
President Wilson Speaks at Inventing America Conference

SD Mines President Heather Wilson spoke at the Inventing America Conference in Washington, D.C., Wednesday, March 4. She spoke on how patent laws enable university innovation and job creation.

Wilson joined Carly Fiorina, former CEO of Hewlett-Packard and current chairman of the American Conservative Union Foundation, U.S. Sen. Christopher Coons of Delaware, former U.S. Trade Representative Carla Hills, and other business executives, education leaders and policy makers.

Before becoming president of SD Mines in 2013, Wilson served in the U.S Congress for 10 years and was a senior member of the House Energy and Commerce Committee.

At the South Dakota School of Mines & Technology, Wilson leads a research science and engineering university where, within the past three years, faculty research has led to the launching of four start-up companies and the filings of 44 invention disclosures – the most ever for a three-year period at the university.

With members representing the majority of the nation's patent holders and inventors, Inventing America is comprised of a diverse array of innovators including universities, nonprofit foundations, start-ups and small businesses, as well as large manufacturing, technology and life sciences companies.

For details on Inventing America: http://www.inventingamerica.org/

Kadlec Named Men’s Soccer Head Coach

Jordan Kadlec has been promoted to the head coaching position of the SD Mines men’s soccer program. Kadlec had been interim head coach since December.

Kadlec served as assistant coach during the Hardrockers’ final season as an affiliate member in the Great Northwest Athletic Conference (GNAC) and will lead the soccer program into its first year in the Rocky Mountain Athletic Conference (RMAC) beginning with the 2015 season.

“Jordan has shown exceptional leadership skills over the last two months as the interim head soccer coach. I believe Jordan will do an exceptional job of recruiting the scholar-athletes needed to compete in the Rocky Mountain Athletic Conference in the present and the future,” said Hardrocker Athletic Director Joel Lueken.

Kadlec came to SD Mines in 2014 after stints at Grand Junction Soccer Club in Colorado and the University of the Cumberlands (Williamsburg, Ky.). While in Grand Junction, Kadlec was head coach for the Under-11 boys’ and Under-14 girls’ premier teams. At Cumberlands, Kadlec served as a graduate assistant and was responsible for recruiting, daily training of goalkeepers and monitoring the academic progress of student-athletes.

Kadlec replaces Joe Burger as head coach.

E-Week 2015
Students Use Math to Eradicate Ebola in Modeling Contest

A team of three undergraduate students tackled the largest Ebola epidemic in history at the 31st-annual Mathematical Contest in Modeling (MCM), developing a math model of the logistics involved in eradicating the deadly disease. In one weekend, students researched the topic, developed a mathematical model, used a computer to simulate the model and wrote a technical report.

Student teams from colleges and universities throughout the world chose either the problem of eradicating Ebola or searching for a lost plane, wherein they would develop a mathematical model that could assist in a search for a plane feared to have crashed in open water, similar to Malaysian flight MH370. In January 2015, the Centers for Disease Control and Prevention estimated more than 550,000 reported cases of Ebola in Liberia and Sierra Leone, but a predictive pattern of underreporting cases places the actual number at more than 1.4 million. Even if a vaccine is quickly developed, there are still many factors that must be addressed in combating a virus like Ebola.

For instance, though modeling the spread of a disease in a population has been a classic math problem for many years, modeling the logistics to eradicate a disease from the population is far more complicated. Students must not only estimate the persistence of the disease in isolated pockets of the population, but account for the variance in vaccine effectiveness, as some vaccines require multiple treatments, or boosters, to remain effective. The team also faced the challenge of designing a distribution network and strategies for encouraging people to get the vaccine.

“This is a great illustration of how mathematics can actually save lives and a great challenge to work on an open-ended question that allows for creative solutions and the opportunity to reflect on 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 and Computer Science.

The modeling team members, all applied and computational mathematics majors, included senior Jessica Gillaspie from Rapid City, senior Noah Brubaker from Lincoln, Neb., and junior Tyler Hensen, from Baker, Mont.

Results, judged by faculty members across the United States, will be released in April and could be considered for further study by researchers or health organizations. The top papers will be published in a journal and become part of the professional literature. Additionally, two Sigma Scholarship Awards will be presented to the top MCM United States teams with a cash prize of $10,000 per team, $9,000 of which goes to the team members and $1,000 to the school represented.

SD Mines President Heather Wilson was the special guest at February’s Morning Fill Up, the conversation series that invites local, regional and national leaders to participate in a public interview at The Garage.

The conversation was moderated by Matt Ehlman, principal of The Numad Group, and followed by a question-and-answer session with attendees.

Morning Fill Up is a series of public gatherings intended to inspire and engage residents around western South Dakota to put their creative energies into action for the betterment of the entire community. Morning Fill Up is sponsored by The Numad Group and The Bush Foundation.

ASCE Students Hosts Dodgeball Tournament to Raise Funds

The American Society of Civil Engineers (ASCE) student chapter hosted its second-annual dodgeball tournament in the King Center February 28.

Registration brackets included an elementary division for kindergarten through fifth grade; a middle school division for sixth through eighth grade; a high school division for ninth through twelfth grade; and an adult division. Teams were comprised of six players.

All money raised will fund student travel to the ASCE 2015 regional conference in Albuquerque, N.M.
Garrand Receives National Teaching Assistant Award

Master’s candidate Kasey Garrand has been selected as the recipient of the National Association of Geoscience Teachers (NAGT) Outstanding Teaching Assistant Award for 2015. This annual award identifies undergraduate and graduate teaching assistants who demonstrate teaching excellence in geoscience education.

A West Chazy, N.Y., native, Garrand, who is pursuing his master’s in geology and geological engineering, was a teaching assistant for the Black Hills Natural Sciences Field Station geology camp during the summers of 2013 and 2014.

Christopher Pellowski, Ph.D., coordinator and instructor at the Black Hills Natural Sciences Field Station and the Department of Geology & Geological Engineering at Mines, nominated Kasey for his impressive teaching abilities and positive outlook.

“Kasey was an invaluable member of the instructional staff and not only met, but exceeded the expectations of myself and those of the other instructors. He was comfortable working in the field and no matter how steep the terrain or how hot or rainy the weather, he always had a positive outlook. … Kasey was able to offer explanations and ask guiding questions to help the students make their own discoveries or interpretations without giving away the answer, a formidable task even for the best professors,” said Pellowski.

NAGT strives to foster improvement in the teaching of the Earth sciences by K-12 teachers, university faculty and educators at museums and science centers, to emphasize the cultural significance of the Earth sciences and to disseminate knowledge in this field to the general public.

Mines to Host 51st Annual Concrete Conference

The South Dakota School of Mines & Technology will host the 51st annual Concrete Conference, “High-Performance Concrete,” Friday, March 6, in the Surbeck Center ballroom.

More than 100 professionals from throughout South Dakota and Wyoming will attend. Among them will be contractors, concrete suppliers, representatives from testing firms and government agencies and M.R. Hansen, Ph.D., conference coordinator and Mines senior lecturer, who attended the third annual conference as a student.

Hansen has installed concrete at the S.D. National Guard, the concrete fish at Founder’s Park and Storybook Island’s Willy the Whale exhibit. He’s also taught in Mongolia for 12 years, during sabbaticals at Mines, founding both an annual concrete conference in Mongolia and a professional organization that establishes building codes.

“Concrete is the most widely used building material in the world, and we are always trying to make it better and more durable,” Hansen said.

Mike Schneider, senior vice president and chief people officer of Baker Concrete Construction, will deliver the luncheon address from noon-1:20 p.m. Schneider has been named one of the “10 Most Influential People in the Concrete Industry” by Concrete Construction magazine. Schneider will also deliver an afternoon address on “High Performance Concrete in Action.”

Mines student Cody Schellinger and alumnus Gary Mass will also be among the featured speakers.

Senior civil engineering student Schellinger will speak on his travels throughout Colombia and Mongolia as part of the Engineers and Scientists Abroad (ESA) program, where he worked on a rain-water harvesting system and repaired a commuter bridge, among other projects. Schellinger is the American Society of Civil Engineers (ASCE) historian, ESA secretary and member of the Concrete Canoe and Steel Bridge teams. He will speak on self-healing concrete at 10:15 a.m. and his Mongolia experience at 3:40 p.m.

Schellinger’s accomplishments are just a few of many concrete milestones at Mines, including an 18-pound concrete airplane that two years ago made the record books as the only one of its kind to have taken flight and stayed intact upon landing. The Mines Concrete Canoe team consistently impresses at the ASCE Rocky Mountain conference as well.

Mass has worked on numerous water resource projects worldwide, including construction of a 380-foot-high roller-compacted concrete dam on the border between Jordan and Syria and the Three Gorges Hydroelectric Project in China. He also served as the concrete specialist during the construction of the airfield at Denver International Airport. He will speak on expansion of the Panama Canal at 8:55 a.m.

Other speakers include Charles Nmai, Ph.D., PE, engineering manager at BASF Construction Chemicals, and Chris Shearer, Ph.D., Mines assistant professor in the Department of Civil & Environmental Engineering.

Sponsors of this year’s Concrete Conference are: GCC of America, Dakota Chapter of ACI, South Dakota Ready Mix Concrete Association, Croell Redi-Mix Inc., Hills Materials Co., Pete Lien & Sons Inc., Cretex West, LAFARGE-NA, School of Mines Department of Civil & Environmental Engineering and the Mines ASCE student chapter.
Featured in Films, 300 Shows Nationwide, Miles Brings Her Art to Mines

SD Mines has opened its newest art exhibition, “Everything’s A OK,” by artist Sheila Miles at the Apex Gallery.

The exhibit features oils, collages and watercolor paintings with themes ranging from home and the prairie to odd characters and nature.

“The set designer who has used my work in his film productions calls me an outsider artist, (meaning) an artist who accesses the child within… I draw from life experiences such as current news events, relationships, folk tales, animals, weather, landscape and the psychological, emotional, visual and intellectual world,” Miles said.

Miles has exhibited in over 300 shows, and 100 of her works are included in public collections such as the Federal Reserve Bank of Minneapolis, Provincetown Art Association and Museum, Yellowstone Art Museum, Holter Museum, Missoula Museum of the Arts and the Missoula International Airport.

For over 35 years, Miles has exhibited widely throughout the country. She is currently an Artist in Public Places, New Mexico Roster Artist and was a San Francisco Public West Coast Artist for the Public Arts Projects. In 1999 she received the $20,000 Gottlieb Foundation grant. In 2013, 11 of her oils, several of her drawings and studio accoutrement were used in a film “Big Sky.” Recently another 18 works were used in the movie “Jubilee.”

Mines Myth Busters Tests Levitating Boats, Fire, Floating Concrete

Can you tell a tall tale from the truth? Faculty and students at the School of Mines teamed up for the second-annual Mines Myth Busters to debunk or prove some of history’s most popular urban legends, with Mines’ signature twist of explosive experimentation. More than 100 kids attended the event.

Myths included:

Can concrete float?
The American Society of Civil Engineers student chapter’s concrete canoe team tested the myth that concrete cannot float. Concrete by nature is heavy and dense. Could the group make a concrete cylinder that floats in water?

Does fire always burn?
Most people consider fire a destructive force that damages items like wood or skin. But is that always the case? A chemistry faculty member and student explored the science behind combustion.

Is friction stronger than two snowmobiles?
The physics team began with two phone books whose pages were interwoven. Could CAMP’s two electric snowmobiles pull them apart?

Can a child outmatch a football team?
This myth started with two broomsticks wrapped together with rope, while two football players kept the wooden rods apart. Then young audience members tested their strength by attempting to pull them together.

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 Fran LeFort, communications manager, at 605.394.6082 or at fran.lefort@sdsmte.edu. For more Mines news, visit news.sdsmt.edu.

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