Daniel J. Soeder has been hired as the inaugural Energy Resources Initiative director. He will join SD Mines at the end of April after departing from the U.S. Department of Energy (DOE).

A research scientist, hydrologist and geologist, Soeder has been a researcher and technical project coordinator with the DOE National Energy Technology Laboratory in Morgantown, W.V. since 2009, focusing on shale gas, tight oil and geological sequestration of carbon dioxide.

He previously worked as a hydrologist for the United States Geological Survey (USGS) at its Maryland-Delaware-Washington, D.C., Water Science Center and at the Yucca Mountain Project branch in Nevada. Prior, he investigated unconventional gas resources at the Gas Technology Institute in Chicago.

SD Mines announced plans for its Energy Resources Initiative (ERI) in 2014, when a Petroleum Systems minor was approved. Fundraising has since resulted in over $3 million from industry and alumni supporters.

“Dan is a great fit to lead our Energy Resources Initiative,” said SD Mines President Heather Wilson. “Mines is committed to working with industry in the region to prepare graduates and also to advance knowledge about energy production.”

The Energy Resources Initiative builds upon the university’s research expertise in enhanced recovery of hydrocarbons from fine-grained reservoirs, water resources and materials development. The state of South Dakota previously funded the university’s Shale Research Initiative, in which faculty and students collaborated with RESPEC. Researchers investigated the geomechanical and hydrological properties, mineralogy and composition of various shale units to further the scientific and engineering applications of shale and other fine-grained rocks.

Mines is located within 300 miles of the Williston, Denver and Powder River basins, and in recent years nearly 20 percent of Mines graduates have gone to work in the oil and gas industry.

“Oil and gas production is essentially an empirical activity, where successful operators know what works, but they often don’t know why it works,” Soeder said. “Oil production from the Bakken Shale is better in some areas than others. Operators know where the line is between marginal and good production, but not why the line is there. The role of research at Mines is to investigate the underlying principles to better understand the problem. If we learn how production works on the Bakken, that knowledge can be applied to other resources. Many companies in Rocky Mountain basins cannot support a research staff, and ERI staff will meet with them to learn their needs and develop relevant scientific research,” he said.

This experience will also offer students the opportunity to understand practical issues faced by industry, making them better job candidates.

Mines will apply monitoring technology to understand how drilling and production activities impact the environment, and investigate ways to improve recovery efficiencies for oil and gas. “Higher efficiency means lower costs for operators, less wasted resources and lower impacts to the environment.”

For more on the Energy Resources Initiative.
SD Mines has been named one of the top ten best value colleges nationwide for a bachelor's in mining engineering. The ranking, by College Values Online, considered tuition, financial aid, specialization options and unique aspects – like Mines' hands-on learning experience and management emphasis.

“Through the recent downturn, we were still able to place all of our mining engineering graduates. This bodes well for the future of our program,” said SD Mines President Heather Wilson.

Last year's mining engineering graduates saw a 100 percent placement rate, with an average starting salary of $69,800, at major companies like Kiewit, Barrick Gold, Lafarge, Cargill, Freeport-McMoRan, BHP Billiton, Newmont Mining and more. Mines graduates earned a higher first-job salary than the national average of $65,398, according to the National Association of Colleges and Employers. Experienced full-time mining engineers earn a median wage of $94,041 per year, according to the Bureau of Labor Statistics.

SD Mines’ mining engineering students gain experience with industry-grade equipment in state-of-the-art facilities and labs, including the rock mechanics laboratory, the mine ventilation lab and the computer-aided mine design lab. Students also have the opportunity to survey a mile underground and train with mine rescue teams at the Sanford Underground Research Facility.

Click here for the College Values Online ranking.
Click here for more information on SD Mines’ mining engineering program.
A recent award by the U.S. Army Corps of Engineers is funding South Dakota School of Mines & Technology research on how changes in land use increase pollutants and influence the health of the Kootenai River and Lake Koocanusa in Montana, Idaho and British Columbia.

Recent land use changes in the Kootenai River watershed include increased coal mining and alterations to agricultural practices.

Lisa Kunza, Ph.D., assistant professor of chemistry and applied biological sciences, is heading a collaborative research team that includes students, other university partners and agency collaborators.

The team has already received $160,000 and is expecting to receive up to $400,000 for its efforts over the next five years.

Selenium and nitrate loads are on the rise in the Kootenai River as it enters Lake Koocanusa. Selenium is a metal found in natural deposits and may be exposed during mining activity.

In 2012 alone, selenium loads into the river exceeded 29,000 pounds, a five-fold increase since 1992. There is heightened concern about possible buildup of selenium in fish tissue. Nitrate loads have increased substantially, as well, and may alter the resources available for fisheries.

Endangered Kootenai White Sturgeon and other organisms in the river and reservoir could also be affected by the pollutants.

Both undergraduate and graduate student researchers from SD Mines will play a significant role in the research projects. Emily Stickney, from Boise, Idaho, is pursuing a master's degree in atmospheric and environmental sciences. She will have the opportunity to spend the summer in Montana collecting data for her thesis. After graduation in 2018, she plans to study environmental law.

Research is being conducted in collaboration with the University of Wyoming, the Kootenai Tribe of Idaho, Idaho Fish and Game, Montana Fish, Wildlife & Parks, Montana Department of Environmental Quality, British Columbia Ministry of the Environment and other stakeholders.

Kunza recently discussed the research with the Kootenai Tribe of Idaho at the International Kootenai River Ecosystem Team meeting.
SD Mines opened a new exhibit, “A Thousand Words,” by artist Len Davis in the Apex Gallery on campus.

The exhibit will run through Monday, Feb. 20.

The exhibit showcases 100 collages incorporated with drawings of people's faces on newsprint pages.

“When looking at a person's facial expression, you can tell how they're feeling at that particular moment. Whereas text, words and verbiage explain it for you. These collages/drawings explore the interplay between the figurative and the literal, illustrating the fact that a picture is worth a thousand words,” Davis said.

**Mines to Host High Plains Regional Science & Engineering Fair**

The 62nd annual High Plains Regional Science and Engineering Fair draws in middle and high school students from western South Dakota and neighboring states. The fair will run from 7 a.m.-4 p.m. Tuesday, March 28, at SD Mines. The registration deadline is February 24, and SD Mines is also seeking volunteer judges. For more information, visit the website. To register as a judge, please contact Dani Mason.

**Intern Spotlight**

**Justin Slattery**
Braun Intertec Corporation

Senior civil engineering major Justin Slattery from Maple Grove, Minnesota, completed his third internship with Braun Intertec Corporation. He worked in North Dakota on Department of Transportation projects. He performed various quality assurance field and laboratory testing on construction materials including soils, aggregates, and concrete under North Dakota Department of Transportation, ASTM, and AASHTO specifications.
The MLK Day food drive collected a total of 3,600 pounds of food. SD Mines students collected over 2900 lbs. of food on MLK day during the MLK food drive for Feeding South Dakota and the Mines student food pantry. The nonprofit East of 5th kicked off the drive, filling a truck Friday with 700 pounds of food.

SD Mines will host the 19th annual Health and Wellness Fair from 10 a.m. to 2 p.m., Thursday, Feb. 2, in the Surbeck Center ballroom. The Wellness Fair promotes healthy lifestyles and balanced living for Mines faculty, staff and students. The theme this year is “Global Wellness Starts at Home.”
South Dakota School of Mines & Technology scholar-athletes collectively earned a 3.14 GPA last fall, higher than the entire student body.

It was the 17th consecutive semester in which scholar-athletes achieved a combined GPA of at least 3.0, higher than the entire student body during this stretch dating back to the fall of 2008.

“We are very proud of our women and how hard they train for their track and field events, but they have an even greater dedication to their academic programs,” said Jerry Schafer, Hardrocker track and field head coach. “While we want our athletes to succeed on the track and on the field we know the main reason for being here is to work at their studies. Their classroom dedication and success is what carries over to the athletic realm.”

Expectations of student-athletes increased as SD Mines transitioned from the NAIA to the NCAA Div. II, and through its affiliation with the Rocky Mountain Athletic Conference, yet Hardrocker athletes continue to succeed in the classroom.

“This is the second year of the Hardrocker athletics Academic Investment program requiring first-semester freshman, transfer students and scholar-athletes with a GPA below 3.0 to attend a weekly study hall with access to tutors.”
An analysis provided by the South Dakota Board of Regents shows that public investment in South Dakota Mines yields huge returns for the state. In fiscal year 2016 SD Mines generated approximately $238 million in annual economic impact from a public investment of $16.3 million.

“Mines is a catalyst for economic growth in Rapid City and beyond,” said SD Mines President Heather Wilson. “We educate people who create wealth and we advance knowledge, which can spin out into companies.”

SD Mines creates jobs. The university directly supports more than 500 full-time jobs. Mines students injected approximately $16.2 million into the South Dakota economy through day-to-day living expenses. This amount does not include tuition and fees.

The economic activity connected to SD Mines generates 1,981 full-time jobs beyond the campus. This number includes start-up companies and the overall impact the university has on the local economy. In the last five years alone, 116 employers in 27 South Dakota communities have hired Mines graduates as full-time employees.

Over the years Mines graduates have gone on to establish well-known businesses in the state. These companies have a global impact and employ thousands of people in the region. They include Daktronics, RESPEC and RPM & Associates.

“SD Mines continues to create not only world-class science and engineering talent, but an impressive array of technologies, many of which are being commercialized in new and existing businesses right here in Rapid City,” said Benjamin Snow, president of the Rapid City Economic Development Partnership. “The impact of this phenomenon is among Mines’ most impressive contributions to our economy and community.”

Current research at Mines is spinning off new companies that drive growth in the local economy. In fiscal year 2016 Mines brought in $11.5 million in federal and private grants for research, development, and projects. SD Mines start-up VRC Metal Systems is one example. The company builds high pressure systems that deposit metal in a similar way to spray paint. The technology was developed at Mines and the process is now revolutionizing the way metal parts are manufactured and maintained.

VRC Metal Systems has quickly grown to employ 42 people in four years, with a list of clients that includes the Department of Defense (DOD). The company helps the DOD complete cost-effective repairs for critical parts on military aircraft including the fleet of B-1 Bombers stationed at Ellsworth Airforce Base.
SD Mines is hosting prospective high school students and their families at the second annual STEM Careers Night.

Current students will share stories of their Mines experiences with prospective students, reflecting on internship experiences and future career plans, as well as campus clubs and organizations.

STEM Careers Night will be held from 5:30-7:30 p.m. Monday, Feb. 13, in the Surbeck Ballroom on campus.

For more information, contact Samantha Smith at samantha.smith@sdsmt.edu or Brittney Lystad at brittney.lystad@sdsmt.edu
Alumni Meet & Greet

Pictured from top to bottom:
President Wilson and Alumni Association Director Larry Simonson stand with alumni at the Mines on the Road event at Daktronics.
President Wilson tours Shur-Co with Dean Washburn and Wade Dangler (ME 91).
President Wilson speaks with prospective students and alumni at the Mines on the Road event in Sioux Falls.
President Wilson stands with Dean Hummula (EE 89) at Wurth Electronics Midcom.
Mines in the News

Alumni’s Hay Camp Brewing Co. Hopes to Become Hot Spot

Mines Earns Sweep of Black Hills State

Programming Team Hones Skills in Russia

Men’s Basketball Gains A New Member

Kootenai Selenium Study Recruits SD Help

Young Girls Learn Why STEM is Cool

Students Collect 3,000 lbs. of Food

Mines Has Something Bright in Research

One Thousand Words, One Hundred Faces

‘Cookie University’ prepares Girl Scouts for annual selling season

About Legacy News

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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