Enrollment at the South Dakota School of Mines & Technology continues to grow, with the total fall enrollment of 2,798 students representing a 5.98 percent increase compared to last fall.

The growth aligns with the university’s strategic plan to increase enrollment by about 5 percent annually to a total undergraduate enrollment of 3,000. Enrollment in fall 2013 was 2,640, which represented an 8.9 percent growth compared to the previous year.

“Mines is an exceptional engineering and science university with a growing national reputation,” said Heather Wilson, president of SD Mines. “The region needs more well-prepared engineers and scientists, and we are doing our part to help meet that need.”

Undergraduate and graduate student groups are both increasing. The freshmen class includes 591 first-time, full-time bachelor-degree seeking students, a 9.2 percent growth compared to one year ago. Graduate student enrollment increased 4.8 percent compared to last year.

This year’s students come from 45 states, including South Dakota, and 39 foreign countries. The percentage of in-state and out-of-state students is about evenly split, with 50.5 percent coming from outside South Dakota. The fastest-growing state for admissions is Minnesota, with Colorado second and Washington State third. California and Texas are tied at fourth.

**Applied Biological Sciences Growing Rapidly**

The new Applied Biological Sciences program is by far the fastest-growing major. In its second year, enrollment in the ABS program this fall jumped 71.4 percent compared to the same time last year.

“Within four years, we expect that Applied Biological Sciences will be one of the five largest majors at Mines,” said Wilson. “We expect our graduates will fill a need in the health professions, as well as the growing bio-tech industry in South Dakota.”

The Applied Biological Sciences program allows students to specialize in one of three areas: biomedical engineering, pre-health professions and molecular biology/genetics. Mines is the only school in South Dakota that offers an undergraduate degree related to Biomedical Engineering.

While Mines is growing, the quality of the students coming to the university is staying high. The average high school GPA for first-time freshmen was 3.5 on a 4.0 scale.

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$4.8 Million Air Force Contract Awarded

SD Mines has been awarded a $4.8 million research contract from the United States Air Force to develop ultra-efficient energy technologies to improve military performance in hostile environments.

While the end goal is to reduce Air Force demand for energy, the effort also offers economic development opportunities for the university.

The $4.8 million contract was awarded to SD Mines largely due to recently completed multidisciplinary faculty research, which has positioned the university to deliver commercial prototypes, a requirement for this project.

Ultimately, developed technologies would provide energy independence for the Air Force in often unfriendly or austere settings by reducing the need for fuel and water to be delivered and by lowering the amount of solid waste that must be removed from bases.

In addition to conserving water, liquid and gaseous fuels from base waste could be
The newest PayScale report for college graduates ranks the South Dakota School of Mines & Technology as 11th nationally for early career salaries.

The 2014-2015 PayScale College Salary Report, which examined salary figures for more than 1,000 colleges and universities nationwide, lists the average early career salary of SD Mines graduates as $65,600 with an average mid-career salary as $94,800. This listing includes both public and private institutions.

“Mines prepares leaders in science and engineering, and companies are willing to pay good salaries for our graduates,” said Heather Wilson, SD School of Mines president.

The new PayScale report underscores the demand for engineering and science students. In the overall ranking for early-career salaries, the U.S. Naval Academy at Annapolis, Harvey Mudd College, the U.S. Military Academy at West Point, California Institute of Technology and Massachusetts Institute of Technology were ranked in the top five.

“Public schools that graduate a large percentage of STEM (science, technology, engineering and math) majors tend to have alumni with high earning potential, especially for early career salaries, because graduates with those skills are immediately in high demand in our current economy,” according to PayScale, which went on to specifically name the SD School of Mines and its 92 percent of graduates with STEM degrees.

According to the annual report, the average early career salary for SD School of Mines graduates is higher than that of all eight Ivy League universities, with Princeton University ranked first among the Ivy League at $60,000.

Among colleges and universities in the state of South Dakota, the School of Mines is #1 in both early career salaries and mid-career salaries.

Here is the ranking to the full report: http://www.payscale.com/college-salary-report/bachelors

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**New PayScale Report: SD Mines 11th Nationally in Early Career Salaries**

SD Mines hosted its largest ever Career Fair on Sept. 23, with 153 companies from throughout the United States and Canada on campus to recruit students.

Employers this year filled both the King Center’s gymnasium and Surbeck Center ballroom. Sixty-four companies stayed on campus an extra day and conducted more than 1,000 interviews with SD Mines students.

The list of employers included 35 companies recruiting on campus for the first time. Employers were from 28 states and Canada, including 38 South Dakota companies.

About 76 percent of students graduate with at least one internship or co-op experience, and 98 percent of students either have a job in their field of study or go on to graduate school after commencement. The average early career salary of graduates is $65,600, 11th highest in the nation, according to the recently published 2014-2015 PayScale report.

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**Jim Scull Study Room Dedicated at Rocker Square**

A study room has been named in honor of Jim Scull, a South Dakota School of Mines & Technology alumnus and local contractor, in the Rocker Square I apartment building. Scull, left, attended the dedication event with SD Mines President Heather Wilson.

The Jim Scull Study Room honoring alumnus and local contractor Jim Scull has been dedicated at the Rocker Square I apartment building.

Outfitted with sofas, tables and chairs, the room is a dedicated space for students to study independently or in small groups. The Jim Scull Study Room is located on the ground floor of the apartment building at East Saint Joseph and Birch streets.

Scull, a local contractor and a 1974 civil engineering graduate, has been a generous supporter of the university. He was instrumental in construction not only of the twin Rocker Square apartment buildings but also in Einstein Bros. Bagels opening in Rocker Square I this fall. Einstein’s is located on the ground floor of Rocker Square I. Scull has been involved in other construction projects on campus, including the Stephen D. Newlin Family Student Wellness & Recreation Center expected to be completed next spring.

“We needed Jim’s help to get Einstein Bagels open, and he generously gave that help,” said Heather Wilson, president of the School of Mines. “We are very happy to honor him by naming this student gathering place.”

The SD School of Mines has entered into a long-term contract to manage Rocker Square I and II as residence halls for 270 sophomore students.

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The South Dakota School of Mines & Technology has received a $1.1 million contract from the Army Research Laboratory to develop materials to better protect soldiers and to research mineral extraction methods that could ultimately reduce America's reliance on foreign metals used in electronics.

Specifics of research areas key to future Army operations:

· Development of specialized composites for attenuation of impact and blast loading – The ultimate goal of this research is to produce materials for soldier protective armor, such as combat helmets, which strongly mitigate the effects of blast and high velocity impacts, and thereby minimize neurological damage, including traumatic brain injury. David Salem, Ph.D., director of the Composites and Polymer Engineering Laboratory, serves as principal investigator. The work will take advantage of new methodologies to create controlled structure and property gradients in composites that were developed by his group in a previous project for the Army Research Laboratory.

· Protective armor for extremities – This research is a continuation of ongoing work by principal investigator Karim Muci-Kuchler, Ph.D., professor of mechanical engineering and co-director of the Experimental and Computational Mechanics Laboratory. Muci-Kuchler is working to provide some level of protection to the extremities against shrapnel ejected from improvised explosive devices encountered by ground troops in the battlefield.

· Critical metallurgy research in strategic minerals and rare earth elements – This research could result in the cost-effective recovery of metallic elements from mines within the United States that are necessary for smartphone displays and high-power magnets, reducing the country’s dependence on China for these metals. The principal investigator is William Cross, Ph.D., professor of metallurgical engineering.

"Mines has exceptional expertise in two areas of interest to the Army that these projects will address. We are one of a handful of universities in the country that still does research on extractive metallurgy – in this case, getting very valuable, rare minerals from ore. The second area is specialty materials that are very strong and very lightweight to better protect soldiers in combat,” said Heather Wilson, university president. “We look forward to continuing our partnership with the Army on these important problems.”

Jan Puszynski, Ph.D., vice president for research at SD Mines, serves as recipient project manager for the one-year contract “Multidisciplinary Attack on Fundamental and Applied Problems in Advanced Materials and Materials Processing.”
Rocker Days 2014
Engineering Students from Mines, Colombia Partner to Build at Pine Ridge

SD Mines students have participated in eight service projects abroad over the last two years and are looking to continue to build the university’s ESA program. “That’s really significant for a school of our size. A lot of planning goes into these projects and trips,” said ESA advisor Thomas Fontaine, Ph.D., professor in the Department of Civil & Environmental Engineering. “We are hoping to continue to have teams of our students go down. It’s exciting to find a long-term relationship that will be good for both of us.”

The collaborative effort, still ongoing, will result in a three-bedroom pilot house for counselors with the Hands of Faith Ministry who are dedicated to helping Lakotans. Rapid City native Rod Russell of SOL-NEST International, which focuses on creating affordable and resilient housing materials, is also working with students.

Students from SD Mines and Pontificia Universidad Javeriana have partnered on water reclamation and slope stability projects in Colombia in recent years through the Engineers & Scientists Abroad (ESA) program.

Individuals with Disabilities to Share Work Experiences

SD Mines will host presenters from Black Hills Works in honor of Disability Awareness Month.

Almost a dozen speakers from People First have been invited by the university’s Office of Multicultural Affairs to speak about their experiences working in Rapid City. People First is a national organization that helps promote self-advocacy for people with disabilities. About 25 people meet monthly with the Rapid City chapter, said Black Hills Works Service Coordinator Lisa Batteen.

The event will be from 4:50 p.m. Tuesday, Oct. 7, in the Dorr Room of the Surbeck Center on campus.

The presentation at the School of Mines will be more personal than other presentations the group has done before, Batteen said. Members will speak specifically about their current jobs, past jobs and their dream jobs. It will also include a slide show.

The hope is that audience members will learn more about opportunities for people who are disabled and have a chance to interact with people with disabilities, Batteen said. Particularly in the employment world, more change is needed, she added.

“It’s realizing that basically we’re all the same,” Batteen said. “They have the same hopes and dreams that everybody has. It’s amazing what people can do if given the opportunity.”

For more information about the event, visit http://www.sdsmt.edu/Campus-Life/Student-Services/Multicultural-Affairs/.

Go To Mines Open House

The South Dakota School of Mines & Technology will host Go to Mines on Saturday, Oct. 18, for high school students exploring their college options.

The event hosts high school students of all ages, particularly juniors and seniors, as well as their parents, who get to know the university’s engineering and science curriculum and research projects. They will also have the chance to view residence halls and explore campus. Current Mines students, faculty and staff will be available to provide insider tips about campus life, the application process, scholarships and financial aid.
Students Get Creative Showcasing Art, Engineering Connection

If you ask SD Mines graduate student James Tomich, one of the best parts of witnessing the intersection of engineering and art is being able to then share it with others.

“I enjoy interacting with people in the community and showing them how fun and exciting engineering really can be and how there is art to it,” said Tomich, who works in the Additive Manufacturing Laboratory within the Department of Mechanical Engineering.

That’s exactly what he and other students accomplished as SD Mines participated in “Pop-up Engineering: Art of Engineering and Science” on Sept. 12 at the university’s Downtown Campus, 520 Kansas City St. The event was part of the Art Night Downtown program held during the summer months to bring businesses and artists together to create an interactive experience for the public.

School of Mines students took the lead at the event, using hands-on activities to demonstrate the intersection of art, science and engineering and the importance it plays in culture, society and education through 3D printing and scanning, blacksmithing and the human powered vehicle.

For the 3D printing activity, students demonstrated how 3D scanning and 3D printing works with a machine called a 3Doodler. It’s a great way for people to see the connection between art and engineering, Tomich said.

“Artistic-looking structures can be described by mathematic equations,” he said. “And you can create art with math.”

The evidence, he added, includes beautiful buildings, vehicles and objects that have been created with the combination of the human mind and technology.

“It isn’t as straight-forward as cooking,” Tomich said. “It takes interpretation and understanding to sculpt the best-looking vehicle. How do you make it look good, not just run well?”

Tyler McClanahan, president of the SD Mines Blacksmith Club, also connected with visitors from the public. A handful of club members worked with M18 steel throughout the night and help participants create their own pieces to take home, including wall hooks and decorations.

“It’s empowering to create something out of a basic chunk of metal, McClanahan said.

“It’s an awesome feeling to be able to go work and make something out of what was just a box of steel,” he said. “It’s a lot of fun.”

Several years ago the Department of Materials & Metallurgical Engineering teamed with members of the art community to start blacksmithing.

“Since then, blacksmithing has been an amazing vehicle to engage creative students in our program. It has also become a very effective way to educate the public about the science of metallurgy and its impact on society. Many of our students have also become accomplished artists working with metal in their own right,” said Michael West, Ph.D., department head.