Distinguished Alumni Honored at Graduation

Graduates spanning three decades were honored as Distinguished Alumni at the 170th commencement. Honored as Distinguished Alumni were:

Stanley W. Ellis (Math74), who began his entrepreneurial career in the oil and gas industry. Over the next 30-plus years, he bought, built, and sold several companies throughout the U.S. Currently, Ellis partners with business entities in California. His primary partnerships are Reservoir Management Services, LLC; PROS, Inc.; Premier Equipment Rentals; Total Process Solutions; Vertical Tank, Inc., and Sierra Process Systems.

Walter D. Jones (EE75), who has worked for Intermountain Rural Electric Association and the U.S. Army Corps of Engineers’ Reconstruction of Iraq, and has served as an advisor to the National Electrification Administration. He is a member of the Institute of Electrical and Electronics Engineers and National Electrical Safety Code Accredited Standards Committee.

Harold D. Nelson (GenE58), who was founding chair of the Department of Engineering at Texas Christian University and currently is professor emeritus at Arizona State University. He has also worked at a number of aerospace companies. His research on satellite stability was first published in 1966 and in 1976 he published a landmark paper that helped him become world-renowned in modeling and analysis of the dynamics of rotating assemblies.

Karen N. Swindler (ChE88), who began her career at Exxon and transferred to LyondellBasell. Among her titles: director of global operations planning and scheduling and divisional vice president of polymers manufacturing, North America. She most recently served as senior vice president of manufacturing, Americas. Swindler is one of few females leading manufacturing for an S&P Fortune 500 company.

Richard A. Wells (ChE82), who began his career at Dow in 1982. Currently vice president, Global Government Affairs and Public Policy, Wells has held a number of positions during his 30 years with the company. Wells has contributed his expertise on energy efficiency to Pulitzer Prize winning author Daniel Yergin’s book, The Quest.

Anne Christensen (IE15), pictured on the cover, delivered the senior class message. Christensen earned a Six Sigma Green Belt certificate, was president of the Mines Circle K chapter, vice president of the Professional Development Institute, and participated in a number of student engineering organizations as well as two university bands. She accepted a job at Polaris Industries.

Lockheed Martin VP Delivers 170th Commencement Address

Alton D. Romig, Jr., Ph.D., of Lockheed Martin Aeronautics Co., delivered the address at the 170th commencement ceremony of the South Dakota School of Mines & Technology. Romig is vice president and program manager for Lockheed’s Engineering and Advanced Systems and Advanced Development Programs – the Skunk Works®.

More than 100 Doctor of Philosophy, Master of Science, Bachelor of Science and Associate of Arts degrees were awarded at the Dec. 20 ceremony at the Rushmore Plaza Civic Center Theatre. Romig was also awarded an honorary doctorate.

Romig is responsible for the strategic and operational success of the product and technology front end of the aeronautical company’s business line. He leads the development of advanced technology, systems concepts, projects and programs, providing ultimate oversight for multiple contracts and new business initiatives.

Prior to joining Advanced Development Programs, Romig spent more than 30 years with Sandia National Laboratories, which is operated by Lockheed Martin Corporation. His responsibilities included leading activities that provided science, technology and systems expertise to support U.S. programs in military technology, nuclear deterrence and proliferation prevention, technology assessments, intelligence and counterintelligence, homeland security and energy programs.

He held a variety of management assignments at Sandia, including chief technology officer and vice president for science, technology and partnerships; chief scientific officer for the Nuclear Weapons Program; executive vice president; deputy laboratories director; and chief operating officer.

Romig has won numerous international prizes, including the American Society for Materials Silver Medal for Outstanding Materials Research. He is a member of the National Academy of Engineering and the Council on Foreign Relations, has served on numerous academy boards and committees and has been a member of the Intelligence Science Board. He has also served on several industrial boards, including the Technology Ventures Corporation and the Atomic Weapons Establishment Board of Directors in the United Kingdom.

He is a fellow of the American Association for the Advancement of Science, ASM International, the Minerals, Metals and Materials Society, and the Institute for Electrical and Electronics Engineers and associate fellow of the American Institute of Aeronautics and Astronautics. Romig is also a visiting physics professor at the California Institute of Technology.

He received his Bachelor of Science, Master of Science and doctorate in materials science and engineering from Lehigh University.

See photos on page 5
Ryan Brown, who graduated in December, has accepted a fulltime position in Mission Control at NASA Johnson Space Center (JSC), and will soon be working to support the largest, most powerful and complex human facility to ever operate in space – the International Space Station.

Entry-level positions like Brown’s come exclusively through the highly competitive “NASA Pathways Intern” program, which serves as a talent pipeline for the space agency. Only after completing a minimum of three tours, including two semester-long co-ops and either a summer internship or third co-op experience, is one eligible for a full-time offer.

The Rapid City native’s first 15-week tour was spent interning at NASA JSC in 2012 through a $10,000 scholarship provided by the South Dakota Space Grant Consortium.

A computer engineering major, he was tasked with developing software simulation for astronauts to train for moon landings. But he and a fellow intern soon embarked on an additional project that made NASA take note: three-dimensional head tracking in simulated conditions. The project held the potential to lead to more authentic astronaut training and earned him another two tours of duty at JSC co-ops.

Having recently graduated, Brown will spend the next year and a half getting what he terms his “master’s in the International Space Station,” learning how to utilize communication loops, listen to multiple channels and monitor different conversations. He will be training to join Mission Control, whose storied history includes supporting every U.S. human spaceflight since 1965, including the Apollo missions that took astronauts to the moon.

Eventually, he will staff the computer console CRONUS that controls the communications systems of the International Space Station, a U.S.-led collaborative effort of 16 nations.

“These hands-on NASA experiences are extremely beneficial for students and it certainly paid off for Ryan as evidenced by his job at NASA’s Mission Control in Houston. Soon, we will have a Mines graduate sitting at the control center of the world’s only international orbiting outpost. In terms of a university’s role to place students in important and cutting-edge careers, it doesn’t get any better than that,” said Tom Durkin, deputy director of the South Dakota Space Grant Consortium housed at SD Mines.

Brown so impressed his supervisors during his previous tours at the JSC that NASA extended a second employment offer this fall to work in robotics in Mission Control. But he says the fast-paced environment found in Mission Control’s operations side will allow him to tap into his prior career skills and experience in a different operational theater, as an eight-year U.S. Army veteran with more than six years in the Special Forces Command (Airborne) unit and combat tours in Afghanistan and Iraq.

“Mines is a great university for veterans,” said Heather Wilson, Mines president. “Ryan has taken his experience in the service combined with a degree in engineering to help him achieve his dreams.”

Brown credits much of his success to the Veteran’s Resource Center (VRC) at Mines. “I’ve either been a work-study student or volunteer since I started here, and it really helped me. It made a huge difference,” – a kindness he’s long since repaid. Brown was instrumental in securing a $60,000 donation from John and Cheryl Hoven to renovate the campus resource center for veterans back in 2010.

“It gave me a place to study with like-minded people who have been through the same stuff. Everyone there is taking classes as a career change from their time in service,” Brown said.

Though the sky’s the limit for most Mines students, who boast a 98 percent placement rate and early-career salaries topping $65,000, Brown is making his mark in space.
Mines Tops the List of “50 Best Online Master's in Engineering Programs”

The South Dakota School of Mines & Technology has been named first in the country in the 2015 ranking of the “50 Best Online Master's in Engineering Programs.” Released by Best Master's Programs, an online graduate school guide, the ranking highlights 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.

“SD Mines offers exceptional master’s degrees that can be taken by distance at a price people can afford,” said President Heather Wilson.

The university offers three graduate-level distance education programs: construction engineering and management, engineering management and mining management.

“Adding a graduate degree to your résumé is a solid investment toward landing a higher-level management position within the engineering field. Choosing to complete your engineering degree online offers flexibility on a number of levels, allowing you to get the education to advance in your field, without actually having to leave the field to do it,” Michelle Rindy, editor, Best Master’s Programs, said in a news release.

The investment in higher education in the engineering field typically has a big payoff. The U.S. Bureau of Labor and Statistics states that the average pay for an engineering manager in 2012 was nearly $125,000 per year, which was considerably higher than non-management engineering positions.

SD Mines has an impressive average early-career salary of $65,600 for undergraduates as well, according to the 2014-2015 PayScale report, and a placement rate of 98 percent.

SD Mines is followed by Arizona State University in second place and North Carolina State University in third. The university beat out Columbia, Cornell, Purdue, Virginia Tech and Texas Tech for the top spot. See the complete ranking here: http://www.bestmastersprograms.org/rankings/best-online-masters-in-engineering-programs/.

Best Master's Programs is an online guide that provides information to help prospective graduate students find the best master’s programs. Since every individual has diverse interests and needs, the site provides an array of information to aid students in deciding what and where to study. Best Master's Programs publishes rankings and information about the top programs in popular fields, as well as career and salary information.

Students Prove Finesse in Science and Business

The School of Mines launched its own version of “Shark Tank,” hosting the first-ever Student Business Plan Competition, focusing on science and engineering with an entrepreneurial twist. Students presented real-life business plans to local business leaders, The Enterprise Institute and Entrepreneurs-in-Residence at SD Mines for the chance to win start-up money to transform their concepts into companies. Ideas ranged from an instant test to identify food-borne pathogens to portable emergency shelters.

The three winners of the competition were Vivek Agarwal with Module Innovations in first place, Mohit Bibra with Enzyme Business in second and Conrad Farnsworth with Farnsworth Downs Technology in third place. Winners received an award of $2,000 for first place, $1,000 for second place and $500 for third place.

The competition is the culmination of work begun in September, when students started drafting business plans and firming up financials. Students were then narrowed down to semi-finalists who presented their business plan to a panel of judges, who then scored teams on their plan’s quality, business potential and the impact of their presentation. The competition allowed for a 10-minute presentation followed by five minutes of Q&A.

“Partnering with South Dakota Business leaders, we’re giving our students a real-world opportunity to experience entrepreneurship. At Mines, we produce leaders in science and engineering, some of whom will go on to establish and build new companies and new products,” said Heather Wilson, president of the School of Mines. “Experience in innovation and bringing ideas to market starts here. I really hope several of these teams of students start their businesses before they even graduate from Mines.”

“This series of events gives students the opportunity to explore a possible career as an entrepreneur. In engineering and science there are a lot of students who never consider starting their own business because they have so many options when it comes to employment. However, the pathway of entrepreneurship can be a legitimate choice for those students who have the propensity. This program is designed to expose students to business plan formation,” said Joseph Wright, associate vice president for Research-Economic Development, Research Affairs at SD Mines.

The judges were:

Nina Braun, audit partner, Ketel Thorstenson, LLP; Darren Haar, Entrepreneur-in-Residence at SD Mines and chair of the Black Hills Regional Angel Fund, former global business director microcircuit materials, DuPont; Jim Meyer, Quarq technical director, SRAM, LLC; James Quinn, managing partner, Black Hills Business Strategies, former board of managers, Dsultions, LLC, board member, Center for Business and Economics of the Northern Plains, project manager, advisor and engineer, ExxonMobil; Jeffrey Wehrung, director, Center for Business, Entrepreneurship and Tourism, and assistant professor, Black Hills State University.
Congratulations, Mines Graduates

More than 100 students received their Doctor of Philosophy, Master of Science, Bachelor of Science or Associate of Arts degrees at the South Dakota School of Mines & Technology’s 170th commencement ceremony Dec. 20.
Landlocked eighth graders at North Middle School are learning about water erosion firsthand thanks to the American Society of Civil Engineers (ASCE) at the School of Mines. Four SD Mines students designed and built an 8-foot-by-4-foot stream table with two water sources and a circulating pump to give one science class a 3D representation of how an earth system works.

“The stream table will be used to give kids a hands-on experience with erosion. Our students are very tactile learners so to give them a tool where they can manipulate various natural events is very impactful. Being landlocked in South Dakota limits our students’ ability to visit major rivers and beaches firsthand, so the table brings that experience, on a limited scale, to our classroom,” said Jordan Paula, science teacher at North Middle School.

After discovering stream tables cost several hundred dollars to order online, Paula found a better solution: approach ASCE to build a less-expensive and better-designed teaching tool. Group members took on the project, donating their time, labor and expertise – and many late nights in the lab to finish the project.

Cody Schellinger, an ASCE officer, said the group’s goal was to fuel an interest in science, technology, engineering and math. “We were excited about building this table at North Middle School. We offered our lab and tools and time to help them because I feel that getting them interested in science and engineering at an early age sparks creativity and interest,” Schellinger said.

Schellinger added that building the table was also a useful project management experience for the ASCE members, as they ushered a project from ideation to design and construction.

The group of civil and environmental engineering majors, comprised of Schellinger, a senior from Sheridan, Wyo.; Nicholas Claggett, a senior from North Syracuse, N.Y.; Kevin Barry, a senior from Rapid City; and Brigit Kelly, a junior from Casper, Wyo., hopes to partner with North Middle School on future youth outreach projects as well, such as helping students with science fair projects, acting as science fair judges and building other learning tools for classroom labs.

“Over the last two years we’ve tapped into the resources that the School of Mines offers. We’ve had the Paleontology Club visit; the civil engineering group built the stream table; the Aeronautics Club helped with our science fair; and the women’s basketball team has worked with our middle school teams. We’re very blessed to have access to that type of knowledge base with students, professors and other staff willing to help serve our students.”

Students Bring Nature into North Middle School

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Student’s Field Goal Nets $1,000 in Dacotah Bank’s Kick for Cash

Mines sophomore Drew Hinker won $1,000 in the Dacotah Bank Kick for Cash contest.

Hinker kicked a 30-yard field goal in the halftime contest at the game against Azusa Pacific University. Hinker is a civil and environmental engineering major from Woonsocket, S.D.

“We are so appreciative of Dacotah Bank’s generous support of Hardrocker Athletics. This was an exciting contest for our students at SD Mines and we are grateful for our partnership with Dacotah Bank,” said Nate Brown, Hardrock Club president.

Dacotah Bank sponsored the contest at six Hardrocker home football games. Hinker’s attempt was the only successful kick of the season. The $1,000 award will go toward Hinker’s tuition.

“Dacotah Bank has always supported higher education,” said Dacotah Bank Western Region president Rick Rylance. “We are happy to partner with SDSM&T for such an interactive contest. Our congratulations go out to the winner of the Kick for Cash halftime contest, Drew Hinker.”
The South Dakota School of Mines & Technology, Friends of the Devereaux Library and the Elks Theatre will host the 21st-annual Nostalgia Night Film Series: Reel Characters at 6:30 p.m. Sunday evenings Jan. 11 to March 15 at the historic Elks Theatre. This annual event entertains hundreds of people, and all proceeds benefit the Devereaux Library at SD Mines.

Season ticket holders may reserve a seat on the main floor for the entire series for a small fee. Open seating is also available in the balcony.

2015 Nostalgia Night sponsors are:
Black Hills Regional Eye Institute, RESPEC, Westhills Village Retirement Community, Brink Constructors, Inc., Dean Kurtz Construction, Family Thrift Center, Dick and Nancy Gowen, Pet Pantry, SD Mines Alumni Association and SD Mines Foundation

This year’s series consists of 10 outstanding classic films:

Jan. 11: Coal Miner’s Daughter
One of the best musical biographies ever made; enjoy Sissy Spacek’s 1980 Oscar-winning portrayal of country music legend Loretta Lynn.

Jan. 18: Strangers on a Train
From the master of suspense, Alfred Hitchcock, comes this 1951 timeless masterpiece. Robert Walker and Farley Granger star in this thriller.

Jan. 25: Gunfight at the O.K. Corral
It’s back to the Wild West to visit Tombstone and relive the days of Wyatt Earp and Doc Holliday. Burt Lancaster and Kirk Douglas give outstanding performances in this sensational 1957 western.

Feb. 1: The Shop Around the Corner
One of the most brilliant, charming films ever made. James Stewart and Margaret Sullivan will enchant you in this superb 1940 romantic comedy.

Feb. 8: Diamonds Are Forever
This 1971 Bond flick has it all: Sean Connery, Jill St. John, nonstop action and of course its fair share of villains.

Feb. 15: Stage Door
A dynamite cast that includes Katharine Hepburn, Ginger Rogers and Lucille Ball, along with a terrific screenplay, make this 1937 comedy a must-see!

Feb. 22: Anastasia
Is she or isn’t she? Ingrid Bergman, Yul Brynner and Helen Hayes dazzle in this superlative 1956 feature film about the mysterious Romanov princess.

March 1: Send Me No Flowers
Hollywood legends Rock Hudson, Doris Day and Tony Randall team up in this captivating 1964 comedic gem.

March 8: No Time for Sergeants
Andy Griffith and Don Knotts make their first appearance together and bring the military to its knees. Don’t miss this 1958 comedy.

March 15: On the Town
Spend a day in New York, New York, with Navy seamen Frank Sinatra and Gene Kelly. This joyful 1948 groundbreaking musical is sure to leave you smiling!

Season tickets are $40 and available at the Devereaux Library, 501 E. Saint Joseph Street; Elks Theatre, 512 6th St.; and Bag Ladies, 524 6th St. Tickets are also available by mail at the Devereaux Library, 501 E. Saint Joseph Street, Rapid City, S.D., 57701-3995, and online at http://friends.sdsmt.edu.

Triangle Fraternity Delivers Christmas Joy to WAVI

Triangle Fraternity at South Dakota School of Mines & Technology helped spread a little Christmas cheer at Working Against Violence, Inc. and delivered nearly $800 in toys to children staying at the local shelter.

The toys were delivered by Santa Claus at a Christmas party held at WAVI on Dec. 6. Several fraternity members were on hand to sing carols and decorate stockings with shelter residents.

The fraternity collected donations of cash, gift cards and toys from their alumni and local businesses, including Edge Sports, Scheel’s, Roamin’ Around and Who’s Toy House.
Lambda Chi Alpha Fraternity Joins Mines Greek Community

The Pi Mu chapter of Lambda Chi Alpha, a national social fraternity, has become the newest member of the South Dakota School of Mines & Technology’s Greek community after being granted a charter from its national headquarters.

The charter was presented during a banquet held at the Hotel Alex Johnson. Past Grand High Alpha (national president) Drew Hunter, president and CEO of JD Hunter, Inc., in Colorado, was the keynote speaker. Other special guests included members of the University of South Dakota chapter, as well as the director of chapter services and former educational leadership consultants from the Lambda Chi Alpha headquarters.

With 30 active members, the local chapter worked to become officially recognized by the national organization for three years. Lambda Chi Alpha is now the fifth fraternity to be established on the SD Mines campus.

Nick Kelly, a graduate student in engineering management from Sioux Falls, serves as president of the local chapter. Zachary Kohama, a senior industrial engineering and engineering management major from Denver, organized the Pi Mu chapter after transferring to SD Mines in 2011. Director of Music James Feiszli, D.M.A., serves as campus advisor.

The fraternity’s core values are loyalty, duty, respect, service and stewardship, honor, integrity and personal courage.

The first chapter of Lambda Chi Alpha was founded at Boston University in 1909. The fraternity now has nearly 200 collegiate chapters across North America.

Tornado Awareness Courses Offered for Public

Two one-day Tornado Awareness courses will be offered Jan. 8 and 10 to help increase preparedness and raise awareness among all sectors of the local public.

The identical free courses incorporate a “whole community” approach with a particular emphasis on “public information and warning” and “threats and hazard identification.” While targeted to a wide audience, the courses are especially geared toward mass care service workers and those in emergency management, local/state government, educators and those with volunteer organizations.

Darren Clabo, State Fire Meteorologist and an instructor at the South Dakota School of Mines & Technology, is organizing the National Disaster Preparedness Training Center courses in collaboration with the Rapid City/Pennington County Office of Emergency Management.

Courses will be offered Thursday, Jan. 8, and Saturday, Jan. 10, both days from 8 a.m.-5 p.m. at the Pennington County Emergency Operations Center, 130 Kansas City St.

Advance registration is required. Registration may be found at https://ndptc.hawaii.edu/training under the Tornado Awareness Course headline for Rapid City. For additional information or registration assistance, contact Clabo at 394-1996 or Darren.Clabo@sdsmt.edu.

Student LEGO Robots Compete at Campus Preliminary

The School of Mines hosted over 100 elementary and middle school students as they sent their LEGO robots into competition in December.

Twelve teams of budding engineers ages 9-14 registered for the regional FIRST LEGO League qualifying contest, vying for the opportunity to advance to the state finals held in Sioux Falls in January.

Teams had been working together for about six weeks learning to build and program competitive autonomous robots, which must complete various tasks on their own within a given time to earn points.

It was the fourth year SD Mines has hosted the competition.