South Dakota School of Mines & Technology faculty and students earned top honors in this year’s Governor’s Giant Vision Business Competition. In the business division, Mines teams tied for first place and also took third place. A Mines team also won the student division of the annual competition.

After a preliminary judging process that reduced the field of applicants to eight qualifying business and 10 qualifying student entries, the competition concluded with day-long judging activities April 15 at the Sanford Research Center in Sioux Falls. The awards were presented as part of the Governor’s Office of Economic Development banquet with Governor Dennis Daugaard presenting the top prizes in both competitions.

This is the third year in a row a Mines-affiliated start-up has won the senior division of the business competition.

“South Dakota is a great place to start a business,” said Mines President Heather Wilson. “The Governor’s Giant Vision Competition encourages student and faculty entrepreneurs to move their innovations from the lab bench to the marketplace. We’re very proud of these teams and look forward to their future success.”

Continued on page 4

Greg Graves, chairman and CEO of Burns & McDonnell and SD Mines alumnus, will deliver the address at the university’s 171st commencement ceremony.

Burns & McDonnell, headquartered in Kansas City, Mo., is one of the fastest growing and most successful engineering, architecture, construction, and environmental consulting firms in North America.

The ceremony will be held at 9 a.m. Saturday, May 9, at the Rushmore Plaza Civic Center Barnett Arena. Over 300 Doctor of Philosophy, Master of Science and Bachelor of Science degrees will be awarded.

Graves joined Burns & McDonnell in 1980. After holding several positions of increasing responsibility with the firm, he was named general manager of Burns & McDonnell’s energy division in 1997. In 2001, he was promoted to president of the division, a position he held until being named the firm’s sixth CEO three years later.

His entrepreneurial approach to achieving success for his clients and firm earned him recognition as 2014 Ernst & Young Entrepreneur of the Year in the central Midwest engineering category. The award recognizes outstanding entrepreneurs who demonstrate excellence and extraordinary success in such areas as innovation, financial performance and personal commitment to their businesses and communities.

Graves was later named CEO of the Year by the Mid-America Minority Business Development Council and the Difference Maker of the Year by the Urban League of Greater Kansas City. He is a past chairman of the Greater Kansas City Chamber of Commerce. He also serves on the boards of Union Station Kansas City, Civic Council of Greater Kansas City, University of Missouri Kansas City, University of Kansas Advancement Board, United Missouri Bank, University of Kansas Hospital Authority Board and the Kansas City Repertory Theatre.

Graves and his wife, Deanna, view public service as a duty in return for all Kansas City has given them. In 2014, they donated $1 million to the University of Kansas Hospital, with an additional $2.5 million donated from the Burns & McDonnell Foundation that the CEO promotes with his employee-owners. In 2009, they were named Kansas City’s Philanthropists of the Year. Together, they have chaired fundraisers for the American Heart Association, March of Dimes, Starlight Theatre, Treads and Threads for KU Hospital’s Cancer Center, Hope House, the Tocqueville Society of United Way, MOCSA, St. Luke’s South Hospital, Boys & Girls Club, Ozanam, SafeHome, the Greater Kansas City United Way Campaign, Children’s Mercy and the Kansas City Repertory Theatre.

Originally from Sioux Falls, Graves is a 1980 mechanical engineering graduate of South Dakota Mines. He received a master’s degree in business administration from Rockhurst College in 1987.
Mines, ASU Pave Way for Future Research

The South Dakota School of Mines & Technology and Arizona State University (ASU) have entered into an agreement to promote cooperation on research and other joint projects.

A memorandum of agreement signed by the universities will encourage and promote cooperation in research, long distance learning, student success and other services particularly, though not exclusively, relating to sustainability, energy and natural resources.

“We have complementary strengths and a similar set of values,” said Michael Crow, president of Arizona State University. “It makes sense for us to collaborate more closely.”

Under President Crow’s leadership, Arizona State University has developed a new model for the American research university, creating an institution that is committed to excellence, access and impact. ASU measures itself by those it includes, not by those it excludes. ASU pursues research that contributes to the public good, and ASU assumes major responsibility for the economic, social and cultural vitality of the communities that surround it. ASU educates more than 67,000 undergraduates and more than 15,000 graduate students.

ASU has established more than a dozen new transdisciplinary schools and large-scale research initiatives such as the Biodesign Institute; the Julie Ann Wrigley Global Institute of Sustainability; incorporating the School of Sustainability; the Mary Lou Fulton Teachers College; and important initiatives in the humanities and social sciences. During President Crow’s tenure the university has tripled research expenditures and completed an unprecedented infrastructure expansion.

“Our strengths in mining, extractive metallurgy and materials, energy and the environment complement ASU’s broad and deep research strength,” said Heather Wilson, president of South Dakota Mines. “There are things we can do together that neither of us can do alone.”

SD Mines is a specialty engineering and science university located in the Rushmore Region of South Dakota. It offers 16 bachelor’s, master’s and doctoral degrees. SD Mines is one of just five universities nationwide offering degrees in metallurgical engineering, mining engineering, geology and geological engineering, making its graduates and its research a valuable resource for mineral and energy industries.

SD Mines is surrounded by three of the richest energy regions in the United States: the Bakken, the Powder River Basin and the Denver Basin. In the past two years, SD Mines has added Ph.D.s in physics and civil engineering and an undergraduate minor in petroleum systems and has launched a Shale Research Initiative and an Energy Resources Initiative. With a 98 percent placement rate and an average starting salary of over $65,000 a year, SD Mines has been rated as the best return on investment for a public college education in America.

Hinricher Named Goldwater Scholar, Cancer Research Next

South Dakota Mines student Jesse Hinricher has been named a 2015 Barry Goldwater Scholar. The chemical engineering and chemistry double major from Pipestone, Minn., was one of 260 students nationwide selected from a pool of 1,206 to receive the prestigious award, which carries a maximum scholarship of $7,500 for up to two years.

Hinricher, who will graduate in 2017, plans to pursue a Ph.D. in medicinal organic synthesis to research a pharmaceutical cure for diseases such as cancer and Alzheimer’s. The cause hits close to home.

“My best friend was diagnosed with cancer when he was 17. I watched as he underwent months of intensive treatment. Each seemingly barbaric surgery and chemotherapy session destroyed more of his resolve. His morale was a casualty in the fight for a cure – we can and must do better. I fully believe that there exists some combination of atoms, some molecular structure, that will kill cancer without also nearly killing the patient,” Hinricher said.

Aware of the wide variety of obstacles presented by a quest to cure cancer, Hinricher believes the best preparation comes from learning as much as possible. During his time at Mines, he’s shown an impressive versatility in his research. Last year, he was awarded a $10,700 stipend from the South Dakota Space Grant Consortium for a 16-week NASA internship at the Kennedy Space Center.

“NASA’s next endeavor is to establish human colonies on other celestial bodies. Paramount to this enterprise, NASA must discover which, if any, useful resources are available by sending rovers to explore potential colonies. I had the privilege of contributing to the pilot mission set to launch in 2018, which will determine the feasibility of using autonomous robots to search for, analyze and harvest resources.”

During his semester-long internship, Hinricher focused on lunar excavation, integrating a sample delivery system into the framework of analytical instruments that will be used to determine the quality of lunar soil at the dig site.

Since these instruments analyze water vapor and other gas samples, it’s essential that temperature be controlled. To that end, Hinricher designed and performed tests on resistive temperature detectors to determine the most accurate, lightweight options for the task.

On campus, Hinricher is involved in the American Chemical Society, Alpha Chi Sigma Fraternity – Beta Phi Chapter, American Institute of Chemical Engineers and Students for the Exploration and Development of Space.

“Jesse is a great student, and I’m very pleased that he has earned this honor,” said Heather Wilson, SD Mines president. “The best students at Mines can compete with the best students anywhere, and it’s good to see more of our exceptional students applying for scholarships like the Goldwater, Mitchell, Udall and Rhodes.”
Former TCU Engineering Dean
Demitris Kouris New Provost

South Dakota Mines President Heather Wilson announced the university’s next provost and vice president for academic affairs will be Demitris Kouris, Ph.D., former engineering dean at Texas Christian University.

He will succeed Richard Sinden, Ph.D., who has served as interim provost since Duane Hrncir, Ph.D., retired in September.

Kouris joins Mines from Texas Christian University where he has been a member of the faculty of the Departments of Engineering and Physics and served as dean of the College of Science and Engineering.

“Dr. Kouris will be a good fit for Mines and will make us an even greater team,” said Wilson. “He has had a successful career educating engineers at Arizona State, the University of Wyoming and Texas Christian University. He has also been deeply involved in stewarding research, including a stint at the National Science Foundation as a program manager.”

“I am grateful for the opportunity to join the Mines family and a university where synergy between science, engineering and the humanities provides the young Hardrockers with a complete education, an invaluable asset in today’s rapidly evolving world. Dr. Wilson has assembled an exceptional leadership team in a short time, and I am honored to become its latest member,” Kouris said.

During his time at TCU, Kouris championed the student-scholar model, a concept that emphasizes preparation for life-long learning, and a broad and deep education including in disciplines other than one’s own. At TCU he led the creation of the “TCU Idea Factory,” which has become a catalyst for a number of unique educational experiences in entrepreneurship and innovation.

Before joining TCU, Kouris served as program director of the Nano and Biomechanics Program at the National Science Foundation (NSF). Working for NSF provided him with a valuable experience relative to the research funding structure of the federal government.

Kouris served as head of the Department of Mechanical Engineering at the University of Wyoming from 2001 to 2009 and as a faculty member with the Department of Mechanical and Aerospace Engineering at Arizona State University from 1987 until 2001. While at the University of Wyoming, he established an undergraduate international option in mechanical engineering and is a strong advocate for programs that promote international experience for students.

He was born and raised in Athens, Greece. He received his diploma in civil engineering from the National Technical University of Athens in 1982. After a brief period working for his father’s construction company, he left for further studies in the United States where he received a M.S. degree in civil engineering from the Illinois Institute of Technology in 1984, and a Ph.D. in theoretical and applied mechanics from Northwestern University in 1987. He is a fellow of the American Society of Mechanical Engineers.

He has been married for almost 25 years to Terry Kouris, a native of Ashley, Penn. They have two sons, Thanasis and John, who are students at Rice and TCU, respectively.
International Salt Conference to be Hosted on Campus

The “Mechanical Behavior of Salt VIII” conference (Salt Mech 8) will be May 26-28 on the South Dakota School of Mines & Technology campus. Nearly 100 university faculty members, industry and government laboratory workers from all over the world will attend.

The conference continues a tradition started in 1981 at Pennsylvania State University, bringing together the expertise of engineers and scientists involved in the study of the constitutive thermomechanical behavior of salt while providing an opportunity to review recent developments in a rapidly expanding field of interest.

Some of the topics that will be explored during the conference include research and management of underground structures in salt formations; applications of salt mechanics in mines and caverns for hydrocarbon storage, radioactive waste disposal, and toxic waste disposal; and creep, damage, thermal-hydrological-mechanical-chemical coupled effects.

South Dakota Mines was chosen to host this year’s conference three years ago when the 2012 event was held in Paris, France. “We are honored to be hosting such an international conference and equally excited about the exposure our university will receive,” said Lance Roberts, Ph.D., head of the Department of Mining Engineering & Management.

The three-day conference will also include keynote addresses by Frank Hansen, senior scientist at Sandia National Laboratories; Leo VanSambeek, vice president and principal consultant at RESPEC Consulting & Services in Rapid City; Mike Headley, laboratory director at Sanford Underground Research Facility in Lead; and Heather Wilson, South Dakota School of Mines president.

For more information, please visit: http://www.sdsmt.edu/SaltMech8/

Students Place in Putnam Competition alongside MIT, Harvard

Mines students placed in this year’s prestigious William Lowell Putnam Mathematics Competition that draws 4,320 students from 577 colleges and universities across the United States and Canada – nearly half of whom fail to complete a single problem.

“This is the best team ranking we have had since I came here in 1999. All six students scored at least one point, which is impressive considering that over 42 percent of all contestants fail to score any points at all,” said Kyle Riley, Ph.D., head and associate professor, Department of Mathematics & Computer Science.

The Mines team, drawn from the top three scoring students, ranked 136th overall, joining an elite circle of only 150 ranking teams out of the 431 participating, including winning teams from MIT, Harvard and Carnegie Mellon University.

Team members were:

- Senior computer science and physics major Daniel Nix, Sioux Falls, who ranked in the top 22.7 percent with a score of 18
- Senior applied and computational mathematics major Noah Brubaker, Rapid City, who ranked in the top 31.5 percent with a score of 11
- Senior computer science and applied and computational mathematics major Caitlin Taggart, Glendive, Mont., who ranked in the 50th percentile with a score of 2.

Other Mines participants were senior applied and computational mathematics major Matthew Dyke, Hartford, and senior applied and computational mathematics and industrial engineering and engineering management double major Royce Havelka, Dickinson, N.D., who both ranked between the 50th and 60th percentiles with scores of 2 and 1, respectively.

Patrick Fleming, Ph.D., assistant professor, Department of Mathematics & Computer Science, coached this year’s team.

Mines to Research for Rapid City

The City of Rapid City and South Dakota School of Mines & Technology have entered into a five-year agreement for Mines students to provide expertise on projects requiring scientific research for the City.

City and Mines officials indicate the agreement is a win-win situation for both entities. It will provide excellent research and training opportunities for graduate and upper-level undergraduate students at South Dakota Mines and will assist the City on projects requiring expertise and research in the areas of civil, environmental and sustainable engineering.

“This agreement will allow the City to obtain needed research on various projects and provide a great opportunity for Mines students to obtain important training and utilize their skills with impacts on real-world projects,” said Rapid City Public Works Director Terry Wolterstorff.

South Dakota Mines President Heather Wilson and Wolterstorff signed the agreement in April. Wilson states the agreement will provide Mines students with great educational research opportunities while benefitting the City with its projects.

“Our agreement with the city will allow students to work on real-world civil engineering projects important to the city,” President Wilson said. “We expect our students to serve the community in which we live, and this is just one more element of service.”

Rapid City Mayor Sam Kooiker also praised the agreement.

“This agreement emphasizes a continued strong partnership between the City and South Dakota School of Mines & Technology, enabling Mines students to train and provide important research work and assist on projects important to the City and its citizens,” Kooiker said.

Once the projects requiring research work have been identified, Mines faculty will provide a work plan and budget and will advise students throughout the process. Each project will be presented and negotiated by the public works director on a per project basis and once approved, South Dakota Mines vice president for research will authorize each contracted project.

Oversight of the work at South Dakota Mines will be provided by Jennifer Benning, Ph.D., and Scott Kenner, Ph.D.
South Dakota School of Mines & Technology junior Tyler Rust from Rapid City has been awarded the $5,000 Udall Scholarship, one of five prestigious, national scholarships established by the U.S. Congress. Rust is the second SD Mines student to ever win the scholarship.

The $5,000 scholarship comes with a four-day orientation in Tucson, Ariz., where Rust will meet with other scholars from across the country, elected officials and environmental and tribal leaders.

A geology major and geospatial technology minor, Rust chose his field of study to protect and develop tribal public policies with an eye to environmental concerns, sustainability and stewardship of land.

“Because tribal public policy is heavily dependent upon maintaining tribal lands, a solid background in earth sciences will help me not only to understand tribal environmental issues but also to help solve them,” he said.

“The best students at Mines can compete with the best students anywhere,” said Heather Wilson, president of the School of Mines. “We are very proud of Tyler, and I know this scholarship will help enable his continued development as a leader.”

Rust serves as vice president of the Norbeck Society and president of Norbeck Uni and is also involved in Student Association Senate, of Norbeck Uni and is also involved in Student Association Senate, Student Government Association, National Society of Black Engineers, and the Student Association Senate. Rust also plans to pursue a career in tribal land management.

Rust is the second SD Mines student to ever win the scholarship.

Mines’ Antennas First to Use Phase-Changing Material to Alter Shapes, Frequencies

Two new antenna prototypes are the first to be developed using a special class of thin film material which allows them to alter their shape using temperature and radiate at varying frequencies within the popular GHz range. A single reconfigurable antenna could replace two or more traditional antennas, including those in cell phones, Wi-Fi and military devices.

The revolutionary new antennas developed at the South Dakota School of Mines & Technology, in collaboration with Michigan State University, were documented in the IEEE Antennas and Wireless Propagation Letters in February. They are made by integrating vanadium dioxide thin films, a type of “phase-change” material, meaning it is an insulator at room temperature and becomes metal when heated above 68 degrees Celsius. The heating-cooling cycle is repeatable and the phase-change is reversible.

Principal investigator and renowned expert Dimitris Anagnostou, Ph.D., of the South Dakota School of Mines & Technology, led the National Science Foundation-funded research with his graduate student Tarron Teeslink, collaborating with Nelson Sepulveda, Ph.D., and his student from Michigan State University.

Anagnostou, associate professor in the Department of Electrical & Computer Engineering, has been working on reconfigurable and tunable antennas for the past 15 years. Common methods to date have resulted in non-linearities, high losses, expensive fabrication equipment and often complicated biasing mechanisms.

His exploration of vanadium dioxide has shown the material can be used in linear devices, has minimal losses and can be activated using a variety of heat transfer methods. Linear devices for radio-frequency communications applications involve usually passive components such as antennas and (microwave) filters, as well as resistors, capacitors and inductors.

Often antennas are tuned or reconfigured using non-linear components, but these distort the electrical signals, especially over a wide range of frequencies. Vanadium dioxide is a linear material, meaning it affects all radio frequencies by the same amount causing no distortion, and is therefore suitable for narrowband and wideband tuning.

This is the only known success achieving reconfigurability by altering the antenna’s geometry with the special class of material. Several other universities are currently working in the area, indicating the strong scientific interest in this area.

“The novelty lies in obtaining the know-how of the integration and application of the material in antennas in the GHz range. There are still many things to learn. These prototype antennas prove that the material is capable for use and should be further investigated,” Anagnostou said, adding the material can find application in general antenna and microwave component design but ultimately has the potential for many military uses. “Our ongoing experiments in using the material for cloaking and thermal camouflage are also very encouraging,” Anagnostou said.
Scholar-Athletes Earn RMAC All-Academic Honors

School of Mines indoor track scholar-athletes Tyler Nack and Nick Alberts have been voted to the 2015 Rocky Mountain Athletic Conference All-Academic First Team for the indoor track and field season while five other Hardrockers earned RMAC Honor Roll recognition.

To qualify for Academic All-RMAC, scholar-athletes must have a GPA of 3.30 or better, be a starter or reserve and have completed two consecutive semesters or three quarters at their institution.

Nack, a senior distance runner majoring in mechanical engineering from Sioux Falls; and Alberts, a junior sprints runner majoring in electrical engineering from Langford, had the highest GPAs of all RMAC athletes who qualified for this honor. Nack has a 4.0 GPA, and Alberts has a 3.97 GPA.

The Hardrocker scholar-athletes and the GPAs of students who made the RMAC Honor Roll include: Riley Hoseman (3.8), a junior pole vaulter, electrical engineering, Brandon; Davis Mathieu (3.45) a distance runner, applied biology, Spokane, Wash.; Therese Frels (3.88) a sophomore distance runner, physics, Guthrie Center, Iowa; Tasha Timm (3.85) a sophomore thrower, mechanical engineering, Grover, Colo.; and Jessica Tisdale (3.85) a sophomore high jumper, civil engineering, New Underwood.

“We are very proud of Tyler and Nick, as well as Therese, Jessica, Tasha, Riley and Davis. Mines’ curriculum is rigorous, and the level of dedication to both academic and athletic pursuits by these scholar-athletes is exceptional,” said Heather Wilson, president of South Dakota Mines.

“Nack and Alberts have been a huge part of the success of our program. For them to have the highest GPAs in the RMAC shows the caliber of scholar-athlete at our institution,” said Hardrocker track and field head coach Jerry Schafer.

International ‘Conference on Science at the Sanford Underground Research Facility’ Hosted on Campus

The School of Mines will host the first “Conference on Science at the Sanford Underground Research Facility” to address scientific research related to the laboratory in nearby Lead, S.D.

South Dakota Mines scientists are involved in five high-level research projects being conducted or planned a mile underground at the Sanford laboratory, which could lead to a better understanding of the origins and make-up of the universe. Among collaborations are the next-generation search for dark matter, cutting-edge research in neutrino and particle physics, radon-mitigation efforts, astrophysics-based research on solar neutrino sources, and copper electroforming.

Physicists, chemists and other scientists from national and international laboratories and research universities will attend the May 18-20 conference held on the South Dakota Mines campus in Rapid City, located about one hour from the Sanford lab.

Nigel Lockyer, director of the Fermi National Accelerator Laboratory in Batavia, Ill., will be keynote speaker at the May 19 banquet. Lockyer has led America’s premier laboratory for particle physics research since September 2013, where he is driving the development of an international flagship program in neutrino science with particle accelerators. Previously, he was director at TRIUMF, Canada’s national laboratory for particle and nuclear physics. He will speak about the “Challenges of Being the First to Host an International Science Facility on U.S. Soil.”

The experiments coming to the Sanford Underground Research Facility over the next five years are path breaking,” said Heather Wilson, South Dakota Mines president. “We want to open the opportunity for faculty and students from South Dakota and the upper Midwest to participate in the scientific work that will be undertaken here.”

Among subjects to be discussed at the conference: Neutrino Physics, Nuclear Astrophysics, Dark Matter, Neutrinoless Double Beta Decay, Materials Science for Nuclear and Particle Physics, Astrobiology and Life in Extreme Environments, Proton Decay and Geology. A trip to the Sanford laboratory is also planned.

At the Sanford laboratory, scientists from around the world collaborate on ultra-sensitive underground experiments, including the search for dark matter with the Large Underground Xenon (LUX) project, and other work in physics, chemistry, geology, biology, astrophysics and engineering. Planned experiments at the laboratory include the next generation of LUX-LZ and the Deep Underground Neutrino Experiment (DUNE) focusing on oscillating neutrinos. The ongoing MAJORANA DEMONSTRATOR is searching for neutrinoless double-beta decay, which could explain the origins of matter. SD Mines scientists are involved in all of these projects and are also principal investigators in the Compact Accelerator System Performing Astrophysical Research (CASPAR) project to be conducted there.

The U.S. Department of Energy Office of High Energy Physics recently awarded a $1.1 million grant to SD Mines’ newly formed physics research group for underground experiments. Four new faculty researchers have been added within the past 18 months to support the university’s new Ph.D. program in physics.
Hardrocker Sam Cowan Named to NFF Hampshire Honor Society

South Dakota School of Mines & Technology senior and Hardrocker football lineman Samuel Cowan has been named to the 2015 National Football Foundation (NFF) Hampshire Honor Society, which is comprised of college football players from all divisions of play who maintained a cumulative 3.2 grade-point average (GPA) or better throughout their college career.

“Sam Cowan is a great student and a very hard working athlete,” said Heather Wilson, president of the School of Mines.

Cowan is a 6-foot-5-inch, 308 pound offensive lineman from Ashland Ore., majoring in mechanical engineering. Along with Cowan, a total of 816 players from 278 schools qualified for membership in the society’s ninth year, setting a new record for the number of schools represented in the history of the program, which began in 2007.

“Sam exemplifies what a scholar-athlete is here at SD Mines,” said Hardrocker football Head Coach Stacy Collins. “He is a leader in the community, classroom and football field. We’re extremely excited for Sam, and he is very deserving of this recognition.”

The National Football Foundation Hampshire Honor Society capitalizes on the NFF’s National Scholar-Athlete program by greatly expanding the number of scholar-athletes the NFF can recognize each year. The program further strengthens the organization’s leadership role in encouraging academic performance by the student-athletes who play football at the 772 colleges and universities with football programs nationwide. The 278 schools represented in 2015 is a new high water mark, eclipsing the 267 schools in 2014. The total of 817 players in the 2015 class is the second-most in the program’s history, only 21 behind the 838 honored last year.

Qualifications for membership in the NFF Hampshire Honor Society include: being a starter or a significant contributor in one’s last year of eligibility (or a senior who has declared for the NFL Draft) at an NCAA Football Bowl Subdivision, Football Championship Subdivision, Division II, Division III or an NAIA college or university; achieving a 3.2 cumulative GPA throughout the entire course of undergraduate study; and meeting all NCAA/NAIA-mandated progress towards degree requirements.

The Hampshire Honor Society represents a powerful component in the organization’s rich history as an innovator in promoting the scholar-athlete ideal, which began in 1959 with the NFF National Scholar-Athlete Awards. Since its inception, the NFF National Scholar-Athlete Awards program has awarded $10.7 million to 804 top scholars and community leaders.

Minerals Places 15th in North America Programming Contest

Beating MIT, Cornell and Stanford, the South Dakota School of Mines & Technology placed 15th out of more than 100 teams in the open division at the North America Invitational Programming Contest.

Organized by the University of Chicago, the invitational contest prepares teams for competition in the International Collegiate Programming Contest World Finals, known as the Olympics of computer science, to be held in Morocco this May.

SD Mines’ top-scoring team’s performance in the national contest would have placed them at 22nd in the international division, Kyle Riley, head and associate professor, Department of Mathematics & Computer Science, said.

The other two Mines teams that competed placed 43rd and 55th place, respectively. Larry Pyeatt, Ph.D., associate professor, and Roger Schrader, lecturer, Department of Mathematics & Computer Science, coached the teams for the competition.

Team members are:

Red Team, 15th place, all senior computer science majors: Rachel Krohn, Littleton, Colo., Dan Andrus, Spearfish, and Jaysen Spurlock, Gillette, Wyo.

Green Team, 43rd place, all freshmen: Tom Lippincott, computer science major from Rapid City, Andrew Stelter computer science major from Mankato, Minn., and Ryan Hinrichs, physics major from Blunt.

White Team, 55th place: John Brink, senior computer science major from Saint Paul, Minn., Bryon Glass, sophomore, computer science and applied and computational mathematics major from College Park, Md., and Allison Bodvig, computer science and applied and computational mathematics major from Bismarck, N.D.

The South Dakota School of Mines is slated to host the International Collegiate Programming Contest World Finals in 2018.

Banner Pledges $50K to CEE

A ribbon-cutting was hosted to celebrate renovations to the freshman Civil & Environmental Engineering Laboratory funded in part by a $50,000 gift from Banner Associates over a five-year period. President Heather Wilson, right, attended the ribbon-cutting, along with freshmen CEE students, and alumni representatives from Banner.
Graduate students studying nanoscience and nanoengineering showcased their work at the 2015 Nano Expo April 18. The seventh annual event showed how small-scale technology is making a big impact. Among research presented was several nano-bio related projects, the result of the newly established statewide BioSNTR consortium, as well as the use of nano technology in energy applications and foams for structural insulation applications.

South Dakota Mines' nanoscience and nanoengineering Ph.D. program is an interdisciplinary doctoral program focusing on the science and engineering of nanomaterials. The goal is to manipulate matter at the atomic and nano length scales where new materials and phenomena have been discovered.

The university’s program offers a research-intensive degree, with faculty and students from chemistry, physics, chemical, electrical, materials and metallurgical and mechanical engineering participating.

South Dakota Mines is one of the institutions participating in the new Bio-chemical Spatio-temporal NeTwork Resource (BioSNTR), whose mission is to create the tools and expertise needed to catalyze innovation and discovery in bio-science and bio-technology.

State Fire Meteorologist Presents Wildfire Outlook

Darren Clabo, State Fire Meteorologist and South Dakota School of Mines & Technology faculty member, presented the “2015 South Dakota Wildfire Seasonal Outlook” April 14, noting this year started off abnormally dry with significant fire activity within South Dakota. The seminar included information on past weather, current trends and predictions of what the summer wildfire season may bring.

Math Contest Promises Fierce Competition and Rewards

More than 300 area middle and high students will converge on the South Dakota Mines campus Monday, May 11, for the 65th annual West River Math Contest with the hope that their calculated moves will launch them into mathematics stardom.

Sponsored by the School of Mines, the contest begins at 9:30 a.m. with a campus welcome at the King Center. Five exams follow – Algebra I, Geometry, Algebra II, Advanced Math and Masters – all for a coveted award, given to the top five individuals in each category and the top team in each class. Awards are presented at a 1:30 p.m. ceremony.

Contest funding relies largely on donations from the community. For more information on giving, contact the School of Mines Foundation at foundation@sdstm.edu or (605) 394-2436.
The School of Mines has established the Hardrocker Heritage Award to offer in-state tuition and fees to highly qualified, first-time, full-time nonresident freshmen who have at least one parent or legal guardian who earned a degree from SD Mines.

Designed to attract exceptional students to South Dakota in areas of critical need, this award recognizes that children of alumni have a stronger connection to the region and are a priority for the state to support.

“South Dakota needs more well-prepared engineers and scientists,” said Heather Wilson, president of SD Mines. “We are encouraging students to come back to South Dakota who have a connection to South Dakota.”

Now, with the Hardrocker Heritage Award, equivalent to approximately $3,000 a year for the average student in 2014-15, nonresident students with a connection to South Dakota have even greater incentive to attend the university.

The tuition reduction can be retained for up to four years of education, excluding approved education absences, such as co-ops and study abroad. Recipients must maintain a GPA of 3.0 or higher at the end of each academic year, including any summer courses, as well as complete a minimum of 24 credits annually. Currently enrolled students will not be eligible for the program.

For more information, visit: sdsmt.edu/HardrockerHeritage

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4.0 GPA Mines Student Awarded $10K Tau Beta Pi Fellowship

Mines senior David LaPorte has been awarded the $10,000 Tau Beta Pi fellowship, given to a select group nationwide to finance a year of graduate study.

A geological engineering major with a minor in geospatial technology, LaPorte, of Elizabethton, Tenn., will graduate May 9 with a 4.0 GPA.

His collegiate career has taken him to Nebraska for a six-month co-op with a geotechnical consulting company and to Paris, France, for a semester abroad. Acting as president of the Tech Geological Association, LaPorte also served as Student Association Senate vice president.

“I hope to incorporate a humanitarian aspect into my project, serving disadvantaged populations living on hazardous slopes in Latin American cities. Applying my engineering skills to serve humanity in the developing world is my ultimate career goal,” LaPorte said.

Last summer LaPorte traveled to Bolivia to design a water treatment system for a rural university. He will return this summer to continue the project and map local watersheds.

LaPorte plans to pursue a master’s degree in geological engineering from the Colorado School of Mines.

About Legacy News

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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@sdsmt.edu. For more Mines news, visit news.sdsmt.edu

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The Hardrocker Heritage Award is intended to recruit additional highly qualified first-time, full-time nonresident freshmen students to South Dakota who have at least one parent or legal guardian who earned a degree from SD Mines. Qualifying students will receive tuition at the in-state rate. Our universities are one way to attract exceptional students to South Dakota in areas of critical need. This award recognizes that children of alumni have a stronger connection to the region and are a priority for support from the people of South Dakota.

Eligibility

First-time, full-time freshmen undergraduate applicants
With at least one parent or legal guardian who earned a degree from SD Mines
Who meets all admission criteria
Who has a minimum 25 ACT Composite or minimum 1130 SAT Composite
A minimum 25 ACT Math Sub-Score or minimum 570 SAT Math Sub-Score

Currently enrolled students will not be eligible for the program as the objective is to recruit additional exceptional students to South Dakota.

Award Amount:

Eligible applicants will be allowed to attend SD Mines at the in-state tuition and fee rate (an award equivalent to the difference between in-state and out-of-state costs; approximately $3,000 a year for the average student in 2014-2015).

Retention criteria:

The tuition reduction can be retained for up to four years (eight fall/spring semesters) of education at SD Mines, excluding approved education absences, such as co-ops, study abroad, and other approved absences.

Recipients must maintain SD Mines GPA of 3.0 or greater at the end of each academic year, including any summer courses completed before the start of the next Fall Semester.

Recipients must complete a minimum of 24 SD Mines credits per academic year, including any academic credits earned in the summer before the start of the next Fall Semester.

Failure to meet the renewal criteria will cause the recipient to be ineligible to receive the in state undergraduate tuition rate.

Once in-state tuition is lost, it will not be reinstated unless waived by the Provost because of extenuating circumstances (medical/personal/family emergencies, etc.). Voluntarily taking time off from school is not an acceptable reason for appeal.

For more information contact: admissions@sdsmt.edu or call (877) 877-6044