SD Mines computer programming team received an Honorable Mention in the International Collegiate Contest (ICPC) World Finals held May 20-25 in Rapid City. Mines was one of 20 teams representing the U.S.

Approximately 1,500 contestants, coaches, staff and spectators traveled to Rapid City for the event.

The SD Mines team included three students:

Matthew Dyke, senior computer science and math major, Hartford

Alexander Iverson, junior computer science major, Fort Collins, Colo.

Matthew Schallenkamp, sophomore computer science and math major, Brookings.

Thanks to help from their coach, Larry Pyeatt, and a donor, two team members attended an elite computer programming boot camp in Russia last year. The camp has trained world champions for the past five years.

The competitors at the ICPC World Finals represent the best collegiate programmers on the planet. This marks the seventh time Mines has qualified for this international competition.

About 300,000 students from across six continents compete for spots on 2,736 local university teams. The winning university teams progress through multi-level regional competitions. In the end, 133 teams from 70 countries earned the right to attend the international competition this year.

Listen to an audio interview with Toni Logar, one of the longtime coaches of the Mines team.
The U.S. Senate has confirmed Heather Wilson as the next Secretary of the Air Force.

“Being the President of SD Mines has been a tremendous joy,” said Wilson. “It’s an exceptional university with deep roots and a very bright future. I will miss the campus, many friends here and the beautiful Black Hills.”

Wilson was unanimously honored by the S.D. Legislature, which noted, “She has established new academic programs, increased research, grown enrollment, secured critical infrastructure investment, deepened a connection between the university and the community and improved financial management.”

Wilson’s leadership at Mines was also praised by community leaders.

“A university committed to STEM teaching and research can be a key catalyst for economic development. In Heather, we have enjoyed a president who understands and promotes this vital Mines connection to the community. She gets it, and it will be tough to fill her shoes,” said Ben Snow, President of the Rapid City Economic Development Partnership.

“During Dr. Wilson’s time here, she was more than a president. She was a role model, a friend, and, above all, an inspiration. She truly was a member of the Hardrocker family. We are thankful for the time she dedicated to us, and look forward to watching her serve our country,” said Aaron Campbell President of the Student Senate at Mines.

“Thank you for your service. Your leadership has been superb, in so many ways. We hope to continue your initiatives as we seek new leadership at this university,” said John Bastian, S.D. Board of Regents.

Wilson graduated from the U.S. Air Force Academy in the third class to include women. She earned her master’s and doctoral degrees as a Rhodes Scholar at Oxford University in England.

She served as an Air Force officer in Europe during the Cold War and on the National Security Council Staff under President George H.W. Bush during the fall of the Berlin Wall and the collapse of the Warsaw Pact.

She has also worked as an advisor to several large defense and scientific organizations both before and after serving for nearly a decade in the U.S. Congress.

The daughter and granddaughter of aviators, Wilson is an instrument rated private pilot.

She has served on the boards of Peabody Energy and Raven Industries as well as numerous nonprofit boards. She is stepping down from those positions to serve as Air Force Secretary.

Wilson becomes the second confirmed appointee in the Department of Defense and will be responsible for organizing, training and equipping the U.S. Air Force of over 600,000 active, guard, reserve and civilian airmen as well as managing its $124 billion budget.

The Air Force Secretary reports directly to Secretary of Defense James Mattis.
Jan Puszynski
Named SD Mines Interim President

Jan Puszynski, Ph.D., vice president for research, has been named interim president at SD Mines. Puszynski will serve in a temporary capacity until a national search for the next president of the engineering and science university is concluded and a new president is appointed.

He has been educating undergraduate and graduate students at SD Mines for nearly 26 years, joining the faculty in 1991 as a professor of chemical engineering.

During his tenure in Rapid City, he has established a national and international reputation in materials research and received several multi-million-dollar research awards.

“We are very pleased to have Dr. Puszynski assume this important interim appointment,” said Regents President Bob Sutton.

“His long tenure on the Mines’ campus and familiarity with the university’s mission, programs, and students gives the regents a great deal of confidence that the campus is in good hands while a presidential search proceeds.”

Since 1996, Puszynski has been the principal investigator on several research and development projects funded by the Naval Surface Warfare Center and other Department of Defense organizations.

His expertise is in reaction engineering, energetic materials, materials science, and mathematical modeling of reactive systems.

A presidential search process at School of Mines is underway.

Contingent on a successful search, a new president will be appointed this fall to begin duties on or around January 1, 2018.

Prior to his time at SD Mines, Puszynski worked as a research professor in the chemical engineering department at State University of New York at Buffalo.

His undergraduate and master’s degrees in chemical engineering are from the Technical University in Wroclaw, Poland.

His Ph.D. in chemical engineering was awarded by the Institute of Chemical Technology in Prague.

Intern Spotlight
Jake Sullivan | RPM

Jake Sullivan, an industrial engineering junior, is a laser process intern with RPM Innovations in Rapid City. His projects include running a Laser Freeform Manufacturing Technology machine, and analyzing and reviewing the machine set points and parameters to make sure the build goes as planned. Jake is also a quarterback on the Mines Hardrocker Football team.
Hundreds of Prospective Students Stream to Campus for ‘Go To Mines’

Mines will host hundreds of prospective students and their families during two summer Go To Mines, Friday, June 16, and Saturday, July 22, to tour campus and meet faculty and current students.

A Go Women ice cream social will be held at 2 p.m. in the King Center Hall of Fame, where prospective female students can ask current students about everything from dorm life and dining halls to professors and job fairs.

Mines is consistently ranked among the top returns on investment nationally for a college education.

Pre-registration is encouraged but not required. Pre-register at www.sdsmt.edu/visit.

Student Software Developers Win Butterfield Cup

Students have won the annual Butterfield Cup for developing software that checks the qualifications needed for a student to enroll in a class.

The software automates the time-intensive, manual process faculty normally face when ensuring their incoming students have satisfied prerequisites.

The software also auto-calculates the average grade in those prerequisites so faculty can tailor instruction to the students’ knowledge level.

As of now, faculty must manually go through class lists to ensure students have satisfied the prerequisites for the class in which they’ve enrolled. Faculty must check multiple times a semester because lists can change through the first week of class.

The software, RAPID, (Requirements and Prerequisites Information Display), streamlines and automates the process, saving time and reducing the chance for human error.

Data generated by RAPID will be tested against the Registrar's data to ensure a match, with the aim to roll out the software for department use in the fall.

Moving forward, a senior design team will expand the software’s capabilities to include a graduation checklist and advising tool, while opening up the software for student use.

A class of 35 students developed RAPID, in DevOps, Deployment & Delivery, User Experience, User Interface, Business Logic, Quality Assurance and Communications teams.

Each team presented to the class and Entrepreneurs-in-Residence. Afterward, the class voted for students who showed the leadership, initiative and excellence to win the Butterfield Cup.

This year’s winners are:

• Junior computer science major Katie MacMillan from Rapid City and Pocomoke City, Md.
• Senior computer science major Savoy Schuler from Rapid City, S.D.
• Junior computer science major Andrew Stetler from Mankato, Minn.
• Junior computer science major Jessi Thompson from West Richland, Wash.

The Butterfield Cup is an annual competition created by entrepreneurs to recognize the best mobile app or software produced by students in a semester.

Previous winners have gone on to become finalists in the Governor’s Giant Vision Competition for a mobile app that allows users to track friends at events while providing businesses with a platform to showcase their venue.
SD Mines hosted the second “Conference on Science at the Sanford Underground Research Facility” to address research related to the laboratory in nearby Lead, S.D.

Mines scientists are involved in high-level research projects being conducted or planned a mile underground at the Sanford Underground Research Facility (SURF), home of the former Homestake Mine. Research at SURF could lead to a better understanding of the origins and make-up of the universe.

Among collaborations are a next-generation search for dark matter and a major future experiment in neutrino physics, as well as other cutting edge research in nuclear and particle physics.

Research at the Sanford Lab is being conducted in the same historic site where Ray Davis completed a Nobel Prize winning experiment on solar neutrinos.

Scientists from national and international laboratories and research universities attended the May conference held on campus in Rapid City, located about one hour from the Sanford lab. The conference included trips to the Sanford laboratory and a tour of the Black Hills.

The list of speakers at the conference ranged from physicists who are probing the fundamental make-up of the universe, to biologists who are studying the rare microorganisms that live deep underground as a possible window into extraterrestrial life, to the scientists and engineers working on future experiments planned at SURF.

“The world-class experiments at SURF are advancing human understanding across a wide range of scientific fields,” said Dr. Jan Puszynski, vice president for research at Mines. “We wanted to share this opportunity with faculty and students from around the world who want to participate in the scientific work that is happening at Mines and SURF.”

Other speakers included Milind Diwan (Brookhaven National Lab), Harry Nelson (University of California Santa Barbara), Wolfgang Rau (Queen’s University), Xiaoyu Zhu (Los Alamos National Laboratory), Eric Church (Pacific Northwest National Laboratory), Ian Shoemaker (University of South Dakota), Baha Balantekin (University of Wisconsin), Shih-Kai Lin (Colorado State University) and Jace Decory (Black Hills State University).

An optional workshop on the low-background counting for assay and acquisition of radiopure materials immediately followed daily conference activities.

The low-background workshop included representatives from major dark matter and double beta decay experiments, working together to better understand how to reduce the radioactivity in environments and improve technologies for particle detection, simulation techniques, and material screening.

At Sanford Lab, scientists from around the world collaborate on ultra-sensitive underground experiments, including the search for dark matter, and other work in physics, chemistry, geology, biology, astrophysics and engineering.

Planned experiments at the laboratory include the LUX-ZEPLIN (LZ), a next generation dark matter detector and the Deep Underground Neutrino Experiment (DUNE) focusing on oscillating neutrinos. The ongoing MAJORANA DEMONSTRATOR is searching for neutrinoless double-beta decay.

Both neutrino experiments could explain the origins of matter. SD Mines scientists are involved in all of these projects, and one, Dr. Frank Streider, is the principal investigator of the underground Compact Accelerator System Performing Astrophysical Research (CASPAR) project.

Members of the steering committee were Baha Balantekin (UW Madison), Juergen Brune (Colorado School of Mines), Priscilla Cushman (UMN), Giorgio Gratta (Stanford), Mike Headley (SURF), Kevin Lesko (LBNL), Vuc Mandic (University of Minnesota), Harry Nelson (UCSB), Andre Rubbia (ETH Zurich), Kate Scholberg (Duke), Mark Thomson (University of Cambridge), Kasthuri Venkateswaran (NASA), Michael Wiescher (Notre Dame), John Wilkerson (UNC Chapel Hill) and Bob Wilson (Colorado State University).
Electrical engineering senior Trey Wammen of Reva, S.D., interned at the NASA Marshall Space Flight Center in Huntsville, Ala.

He designed and modeled electrical systems for the Life Science Glovebox going on board the International Space Station in 2018.

The Life Science Glovebox is a sealed work area inside the International Space Station that provides bioisolation and waste control so crew members can perform experimental procedures in cell, insect, aquatic, plant and animal developmental biology.

Wammen helped design the electrical cable harnesses inside the Life Science Glovebox, where rodent research and cell biology studies will be conducted in micro-gravity. His work aims to find solutions to challenges posed by factors that go into cable harness design, such as signal types, electromagnetic influence, environmental situations and faraday shielding, which blocks electromagnetic fields.

In addition, Wammen worked on startup electrical integration for the Near Earth Asteroid (NEA) Scout, which is designed as a secondary payload on NASA's new Space Launch System. NEA Scout is a robotic reconnaissance mission that will be deployed to fly by and return imagery data from a passing asteroid.

With NASA engineers, Wammen helped create a 3D-printed model of NEA Scout to better understand the cable harnessing layout.

Following the completion of his NASA internship, Wammen has another internship lined up this summer at Black Hills Corporation's Wyodak Mine in Gillette, Wyo.

Wammen is a graduate of Harding County High School.

Student Lands NASA Internship Designing Systems for the International Space Station

New Manufacturing, Business Camp for Middle Schoolers Launches at Mines

Mines will host a brand-new “Modern Manufacturing Methods” summer camp for middle school students. Through hands-on experiences, attendees will learn manufacturing methods, business development, 3D printing, SolidWorks software, laser engraving and CNC machining to make a prototype product.

The day camp also offers one-on-one interaction with SD Mines faculty, along with lunch and supplies. The camp will be held June 26-30. Students in grades six through eight may go online to find more information and register.
A four-day science-based drug education course will be held in the Classroom Building on campus on June 12-15. The class is free and open to the public. Those who would like to receive three graduate or undergraduate credits pay a tuition fee of $40 per credit hour. Class time is 7:30 a.m.-5 p.m. each day (plus nine additional hours for those taking the class for credit.) Certification is also offered.

The course reviews a variety of drugs and how they affect the brain. It focuses on substance abuse trends and resulting consequences to the individual and society. For a complete description of the class and a registration application email maryjo.farrington@sdsmt.edu. Several local organizations are sponsoring the class including Western Prevention Resource Center, (ABC)-Sturgis, South Dakota National Guard and the Campuses Community Wellness Coalition.

Preregistration is a required. If the course minimum is not attained, the class will be cancelled.

Congratulations, Graduates!
Mines in the News

SD Mines names Interim President

Conniff named men’s soccer coach at SD Mines

Mines earns honorable mention at international programming event

Mines students improving wheelchairs for developing countries

Our Good Deeds: Mines students sharing science with Club for Boys

Vollmer finishes college career with top-10 in RMAC

Water testing in Rapid Creek

Mines athletes named to All-RMAC in track and field

SD Mines recognizes spring 2017 graduates

SD Mines hires volleyball coach

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