

South Dakota School of Mines and Technology

THE **HARDROCK**™

SPRING 2010

SOUTH DAKOTA

M

SCHOOL OF MINES
& TECHNOLOGY

INVENT TOMORROW

125th
Anniversary
1885-2010

In This Issue:

School of Mines Celebrates 125 Years • Dolan Named South Dakota Professor of the Year
Surbeck Center Undergoes Dramatic Transformation • Renewable Energy Research Facility

Perspectives



Dear Alumni and Friends,

In this 125th anniversary year, I have had an opportunity to discover more about the grand history of this fine institution. From our earliest days, the people attracted to this school have been those with minds that looked to the future and to the unexplored. They have been intrepid individuals who have pushed engineering and scientific boundaries to discover more about what is below, above, and all around us. From the depths of the earth to limitless space, our Mines family has increased the understanding of the natural world and engineered solutions to challenges.

In this issue of *The Hardrock*, you will learn more about the successes of the people and programs at the School of Mines that are advancing our contributions to the world.

For the fourth time, the School of Mines faculty has produced the Carnegie-CASE South Dakota Professor of the Year. Read what students have to say about Dr. Dan Dolan, director of the Center of Excellence for Advanced Manufacturing and Production (CAMP), and why he earned one of the nation's most prestigious awards honoring undergraduate teaching.

This issue also honors friction stir processing pioneer, the late Bill Arbegast. Bill worked on everything from satellites to missiles to space shuttles, developing a unique set of skills and experiences that he imparted to his students and colleagues with an unassuming yet wise demeanor. Dr. Arbegast's legacy continues in the Center for Friction Stir Processing, which has recently assisted in the fabrication of the *USS Freedom*.

In addition to having an excellent faculty, the School of Mines continues its tradition of attracting strong students, like our two United States Presidential Scholars, Katie Aurand and Mitchell Rodriguez. This distinction offered these Rapid City students the choice of attending virtually any prestigious university, and they selected the School of Mines. The diverse backgrounds of our student population, including those of Mines international students, are ever becoming a greater source of strength. Our Mines student chapter of the American Indian Science and Engineering Society (AISES) is developing a regional reputation as a force for advancing the interests of the campus community while ensuring Native students continue in their studies and have a supportive educational experience. Similarly, the Veterans' Resource Center and Veterans' Club bring together those veterans with shared experiences and ideals to help each other succeed and bring valuable perspective to the university. Many students at Mines are also excelling in athletics as well as academics, as evidenced by Mines students, Andy Smith and Bethany Holyoak. These Hardrockers made All-American status as two of the best players in their sports and team positions in the country.

The stories in this issue, as well as many others you may have, shape the identity of the School of Mines and demonstrate our university's many successes. I hope they may inspire you to share your own with us and those around you - promoting the reputation of your premier engineering and science university.

I also hope you are all justly proud, during this 125th year anniversary, of this institution's history of graduating a multitude of well-educated, rigorously prepared and first-rate graduates who add such remarkable value in engineering, scientific, entrepreneurial and other societal accomplishments. It is my belief that the best way for us to honor and build on our results-oriented and wonderful past is to continue our efforts to pursue excellence in all facets of teaching, research, and service for our students, our alumni, the people of South Dakota, the nation, and the world. I welcome your support in that endeavor.

On behalf of the School of Mines, I wish all Hardrockers, near and far, a special 125th anniversary. Enjoy the Spring 2010 issue of *The Hardrock*.

Sincerely,

Robert A. Wharton, Ph.D.
President

SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY



SPRING 2010

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ALUMNI ASSOCIATION STAFF

Alumni Director

Tim Vottero

Assistant to the Director

Dee Raymond

Alumni Association

Surbeck Center

501 E. St. Joseph Street

Rapid City, SD 57701-3995

Office: (605) 394-2347

FAX: (605) 394-2383

E-mail: <alumni@sdsmt.edu>

Web: <alumni.sdsmt.edu>

http://alumni.sdsmt.edu



Perspectives

Hello Hardrockers!

One of the main missions of the Alumni Association is to encourage participation in support of the School of Mines. Participation can be displayed in many ways, including attendance at area meetings, serving as a board member, contributing to the association, or recruiting a neighborhood high school student to attend the School of Mines. Regardless of the form of participation, it ultimately translates into a willingness to help or volunteer. This willingness to help is an undeniable and enduring trait of our alumni. To this extent, we celebrated all those who contributed at this year's Annual Alumni Recognition Dinner in Rapid City:



- 18 members of the board of directors and all those who served before
- 62 past presidents during the 75-year history of the Alumni Association
- 2009-10 alumni award recipients and the many past honorees
- 47 area vice presidents and the many others from previous years
- Alumni who contribute financially to the School of Mines
- SMART recruiting alumni who help enlist the next generation of students
- Honors Day presentation alumni who help present freshman scholarships
- Reunion co-chairs and committees who help with the All-School Reunion
- SDSM&T Foundation who complement our efforts through fundraising
- Campus faculty, staff, and students who inspire us to do more

For the past 75 years, we have been able to rely on these numerous forms of contributions, resulting in making our association one of the best among our peer institutions and arguably among all alumni organizations.

In addition to weekly preparation and distribution of our E-News to more than 5,000 alumni, the Alumni Association and the SDSM&T Foundation recently collaborated with the joint purchase of Blackbaud software to modernize our website and facilitate communication with our alumni. This website enhancement, which is estimated to be functional in the next few months, will be multi-faceted, including more user-friendly features, such as an online directory, social networking, job postings, and an events calendar.

In closing, I want to encourage you to "Save The Date" (**July 7-11, 2010**) to attend our next 5-Year Reunion in Rapid City, (See p. 77 for details). It is fitting that the School of Mines will be celebrating two gems at this reunion next July—our diamond, or 75th, anniversary of the Alumni Association and the diamond plus gold, or 125th, anniversary of our alma mater. Given these two anniversaries, numerous reunion events, and the sharing of old stories, there should be no shortage of reasons for the anticipated 2,000 attendees to celebrate and enjoy these five days—hope to see you there!

Remember our motto: "We Mine Alumni."

Ralph Wagner (CE75)
2010 Alumni President

Our mission: To advance the interests, influence, and reputation of the South Dakota School of Mines and Technology, by fostering and developing the continued interest and active support of alumni and friends.

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THE *HARDROCK* MAGAZINE PRODUCTION STAFF

Executive Editors

Graham Garner
Tim Vottero (Chem84)

Editor

Mitchell S. Vander Vorst

Assistant Editor

Peter J. Roberts

Writer

Breanna V. Bishop

Graphic Design and Layout

Melinda A. Poyourow

Circulation Assistant

Sharon F. Dominicak

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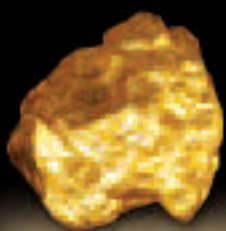
For additional information, subscription requests, or address corrections:

**South Dakota School of Mines
and Technology**
Office of University and Public Relations
501 E. St. Joseph Street
Rapid City, SD 57701-3995
(605) 394-2554 • (877) 766-0012
e-mail: <info@sdsmt.edu>

Advertising Sales

Melinda A. Poyourow
(605) 394-6081
melinda.poyourow@sdsmt.edu





Golden NUGGETS



School of Mines Holds 160th Commencement

The School of Mines awarded degrees to more than 80 undergraduate and graduate students at its 160th commencement December 19, 2009.



Linden S. Blue joined the School of Mines as



*Commencement speaker
Linden S. Blue*

commencement speaker and received an honorary doctorate degree. Blue is vice chairman of General Atomics, a diversified international company with world leadership in nuclear technologies. General Atomics is a vital resource in developing high-technology systems ranging from modular helium-cooled nuclear power reactors and remotely operated surveillance aircraft to airborne

sensors, medical diagnostic products, and advanced electric, electronic, wireless, and laser technologies.

Lisa K. Robinson (ME09) represented the student body. Robinson was involved in various campus activities and organizations, including the American Society of Mechanical Engineers, Phi Eta Sigma, Tau Beta Pi, the Mechanical Engineering Student Advisory Board, and Alpha Omega Epsilon.



*Student representative
speaker Lisa K.
Robinson*

Five alumni received Distinguished Alumni awards, for outstanding contributions in their professions and to the School of Mines. The alumni included: **Paul Clare** (GE59), **Greg Graves** (ME80), **Dr. Jeremy Landt** (EE64), **Dorwin Larsen** (ME57), and **Merle Symes** (ChE73).



Distinguished Alumni recipients (l-r) Wally Larsen representing his brother Dorwin Larsen (ME57), Dr. Jeremy Landt (EE64), Paul Clare (GE59), and Merle Symes (ChE73). Not pictured Greg Graves (ME80).

Enrollment Increases Lead Regental Institutions

The Fall 2009 term at the School of Mines led all South Dakota regental institutions in percentage enrollment increases in both total and first-time freshman categories.



Total fall 2009 enrollment increased by nearly 6 percent, or 116 students, for a total of 2,177. In addition, first-time freshman enrollment increased by more than 14 percent, or 45 students, for a total of 362. Increased admission standards, implemented in fall 2006, are escalating the academic quality and preparedness of entering students, translating into improved retention and supporting predictions for growing enrollment in the years ahead. The current retention rate exceeds records from the previous 30 years, with more than 80 percent of fall 2008 freshmen returning in fall 2009.

Fall 2009 graduate student enrollment was up 8 percent, which is key to fueling the research engine of the university and the region's and state's economic development.

School of Mines to Offer Ph.D. in Mechanical Engineering

A new Ph.D. program in mechanical engineering at the School of Mines will drive engineering design and innovation and provide an important pathway for the university to continue its leadership in research and graduate education for the state of South Dakota and the nation.

"High-tech manufacturing is cited by economic developers as one of the potential growth areas for the Black Hills region and the state," said President **Robert A. Wharton**, Ph.D. "A large part of modern mechanical engineering is comprised of invention, design, analysis, and manufacturing of high-tech systems, machines, and devices. Our program will produce the kind of engineers who can help this state create and develop new businesses, with a particular emphasis on entrepreneurship."

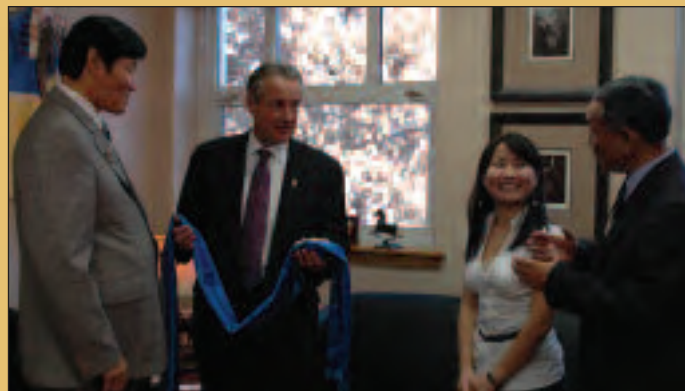
The School of Mines' program emphasizes three areas of research and study: thermal/fluid systems, engineering mechanics and controls, and design and manufacturing. The proposed program will support, and be supported by, the newly created Pearson Endowed Professorship/Chair in Sustainable Energy Systems and strengthen the research agenda in sustainable energy for the State of South Dakota.

This professorship/chair comes as a result of a major gift from alumnus **Larry Pearson** (ME72) and his wife, Linda, longtime supporters of the School of Mines through the SDSM&T Foundation. The gift's focus on sustainable energy stems from Larry's decades of work in the field of energy. "We cannot think of a better place for this type of research and education to take place than at the School of Mines," he said.

International VIPs Visit Campus

The School of Mines welcomed several distinguished international guests to campus in fall 2009. The university hosted Ambassador Zhou Wenzhong from the People's Republic of China. Ambassador Wenzhong spoke to an audience regarding Sino-American relations and economic, energy, and environmental issues. President **Robert A. Wharton**, Ph.D., and Dr. **Carolyn Fassi Wharton** also hosted a luncheon for Ambassador and Madame Shumin Xie and prominent members of the School of Mines and local communities.

Fifteen years of collaborations between the School of Mines and institutions of higher education in Mongolia were expanded by the visit of officials from the Technical College in Darkhan City, Mongolia, to the School of Mines and Oglala Lakota College (OLC). Director Dr. **Lkhagvasuren Renchin**, Vice Director Dr. **Zeneemeder Yadamjav**, and Ms. **Byambaa Luvsan** came to Rapid City to continue discussions begun in May 2009. The process began when seven representatives from the School of Mines and OLC traveled to Mongolia and the college in Darkhan to discuss collaborations and to sign a memorandum of understanding designed to foster educational collaborations.



*Technical College Director Dr. Lkhagvasuren Renchin, President **Robert A. Wharton**, Ph.D., masters student and translator Ms. Ariunaa Chuluunkhuu (M.S. CSci, Mongolia), and Vice Director Dr. Zeneemeder Yadamjav.*

School of Mines Named One of "America's 100 Best College Buys®" for 12th Year

For the 12th consecutive year, the School of Mines is one of America's 100 Best College Buys. This year's "America's 100 Best College Buys" is the 14th list published by Institutional Research & Evaluation, Inc., a research and consulting organization that specializes in the recruiting and retention of students for universities. Each year, the organization identifies the 100 colleges and universities in the United States that provide students the highest quality education at the lowest cost.



"The School of Mines remains the least expensive yet academically demanding college or university in the United States. Our annual national college survey of 1,451 accredited, residential institutions shows this to be a fact," said Lewis Lindsay, Jr., president of Institutional Research & Evaluation, Inc. "The School of Mines provides an exceptional opportunity to students from across the United States. High quality and low cost will continue to draw the best and brightest students from far and near."





R3S Applied Research Center

Receives More than \$2 Million to Repair Navy Equipment

The United States Navy spends significant time and money to develop sophisticated equipment, from weapons to vehicles, only to see some lost because of formerly irreparable damage. School of Mines professors and students are returning these valuable technologies to service through innovative processes and the support of congressional funding.

Thanks to the work of the South Dakota Congressional delegation, the School of Mines has been awarded nearly \$7 million in the 2010 Defense Appropriations bill. More than \$2 million of those dollars are directed to the "Life Extension of Weapon Systems through Advanced Materials Processing" from the Naval Joining Center, a project that will identify components from specific high sustainment cost items in the Navy inventory and match them with repair technologies being developed at the School of Mines. Since 2001, the Department of Defense has invested \$16 million in developing these techniques at the School of Mines.

This will happen through the Repair, Refurbish, and Return to Service Applied Research Center (R3S), a 2010 research center located at the School of Mines focusing on developing, certifying, and implementing repair processes that extend the life of vital military equipment.

The center utilizes technologies developed at the School of Mines' Advanced Materials Processing (AMP) Laboratory. Traditional joining processes weaken materials or even change their properties in undesirable ways. Friction stir (welding without melting), cold spray (accelerating particles to supersonic speed), and laser additive manufacturing (particles injected in laser beams for free-form fabrication) offer engineers and industry professionals next-generation methods for retaining or improving the strengths of materials, extending their lives and offering cost-savings and reduced waste.

***“Mines is a big exporter of engineers,
and the goal is to keep some of that talent here.”***

— Rob Hrabe, Founder and CEO, HF Webster

The 2007 Aging Aircraft Repair Facility study conducted by the School of Mines served as the inspiration for the creation of the R3S. The study showed that utilizing these technologies to repair and refurbish B1 bombers and related aircraft alone would result in \$35 million per year in cost savings for the Air Force. The Naval Joining Center's appropriation will be used to apply these repair technologies to a wide range of Navy weapon systems platforms to achieve the cost savings seen under the Air Force study.

Those collaborating on the project include researchers and students from South Dakota State University, Western Dakota Technical Institute, and other educational partners; industrial partners such as HF Webster, Inc. and RPM & Associates in Rapid City; and corporations such as Edison Welding Institute.

HF Webster will see the transfer of these technologies to application. The company will support the development of the military liaison with the Navy to identify components that need repair and conduct feasibility analyses for the repair requirements. HF Webster will travel to Navy depots, maintenance facilities, aircrafts, ships, and other locations to identify high-failure rate, high-cost repair or non-repairable components, and then evaluate to see if the R3S and partners have the correct match of repair technologies.

HF Webster, an engineering services company focused on materials processing and joining applications associated with repair of Department of Defense components, serves as an example of the benefit this appropriation and others like it have on economic development. Founder and CEO Rob Hrabe notes that, over the previous year, the company has hired eight employees, two of whom are School of Mines alumni, with 10 additional employees expected over the next year. Hrabe expects to hire an additional five to seven employees to meet the need of Navy repairs. The company is also transitioning into an engineering and manufacturing company with a focus on manufacturing friction stir welding components, allowing them to capture a portion of the Naval Joining Center repairs, leading to increased job growth.

“We want to keep and create engineering jobs in the Rapid City area and to grow the materials processing and joining industry so that graduates from the School of Mines have opportunities if they want to stay in the area,” Hrabe said. “Mines is a big exporter of engineers, and the goal is to keep some of that talent here.”



SURBECK CENTER

Undergoes Dramatic Transformation



"The Surbeck renovations have been a really good thing for the School of Mines. The students seem to be spending more time there, and it has become a more productive place to study in groups. It's a lot more comfortable and modern. It will look better to prospective students as well and help them to see themselves here as students."

Brooke O'Bryan (MetE, Waukesha, Wis.)

As visitors to the South Dakota School of Mines and Technology's Surbeck Center enter the building's doors, they are greeted with a striking renovation. Wide, bright hallways and reconfigured, comfortable offices and meeting rooms are found on the upper level. On the lower level the transformation is even more dramatic. The new space bears no resemblance to its former visage, with exposed industrial ceilings, gleaming stainless steel dining areas, comfortable and stylish seating, and study and lounge areas with computer support.

Phase II of renovations to the 71,000-square-foot building were completed in summer 2009, just in time to open the doors to returning students. These vital and modern renovations allow the Surbeck Center to continue as the "living room" for School of Mines students and alumni and the location of choice for campus and community activities long into the future.

In the nearly 50 years since the Surbeck Center's establishment, thousands of students have utilized the space to eat, learn, and socialize. This interactive space makes college experiences possible for students and also serves as a campus showpiece that will aid in the recruitment and retention of students and faculty in an increasingly competitive environment.

The Surbeck Center's renovation process began in 2002, and Phase I was completed in 2004. Seeing the impact these new spaces had on student interaction and learning, in addition to the infrastructure of the building far exceeding its lifespan, helped propel the renovation of the remainder of the building.

The history of the Surbeck Center, which serves as the student union

at the School of Mines, dates back to the late 1950s. **Guy March** (EE22), then mathematics department head and Alumni Association director, asked for alumni and friends of the School of Mines to help give students a place to work and play together. Since opening its doors in 1963, the Surbeck Center has been the living room to thousands of students. In the 1970s, an addition to the west side of the building created new spaces for the bookstore and dining hall.

The School of Mines Student Association was a constant voice during the project's planning to ensure that it fit the needs of the students, was more efficient, and provided an enhanced student experience. In fall 2007, students voted for a 20-year, \$9.99 per credit hour increase in student fees to assist in the \$6 million project.

Student Association President **Lukasz Dubaj** (IS/CE, Poland) said "The overall exceptional quality of the campus community will allow students to interact in a modern and relaxing environment. Students deserve much of the credit for the project's completion as they were active in planning and contributed much of the funding."



"I remember how it looked before...brown chairs, purple tables, old yellow walls. The new Surbeck really makes our school feel brand new. With nicer furniture and a more up-to-date decor, it really feels like a cool place to hang out now – not just a place to eat."

Sean Hayes (ME, Eagle, Idaho)

AWARD HIGHLIGHTS LUCRATIVE TECHNOLOGIES AT CENTER FOR FRICTION STIR PROCESSING

The Center for Friction Stir Processing (CFSP), headquartered at the South Dakota School of Mines and Technology, has been awarded the fifth annual Alexander Schwarzkopf Prize for Technological Innovation from the I/UCRC Association, a voluntary, independent organization of past and present members of the National Science Foundation's Industry/University Cooperative Research Center (I/UCRC) program, involving more than 50 centers, 100 universities and 750 faculty researchers directing nearly a thousand students per year.

The CFSP is one of the world's leading centers for research and development in emerging friction stir welding processing technologies. The center's research on friction stir welding, stir spot welding, and friction stir structural designs and applications has resulted in significant improvements to weld strength and durability by, among other things, replacing fusion welds and rivets.

The award recognizes the CFSP for its work in the fabrication of the Littoral Combat Ship *USS Freedom*, commissioned in September 2006. More than 12 miles of friction stir welding was used to construct the all-aluminum, 377-foot-long ship. The welded aluminum panels for the superstructure were fabricated by CFSP member Friction Stir Link, Inc. and delivered to Marinette Marine for final assembly. The use of the solid-state friction stir welding process has resulted in improved strength and fatigue life and reduced distortion at a robust and repeatable process at the lowest cost.

The CFSP is comprised of five university partners—the School of Mines (lead institution), the University of South Carolina, Brigham Young University, Missouri University of Science and Technology, and Wichita State University—and 27 industry and government partners. The center collaborates with major government laboratories, universities, and industrial companies and trains students for positions of responsibility within these organizations. The CFSP has an extensive government base of support for research and development programs, with current research collaborations with the Army Research Laboratory, the Air Force Research Laboratory, the National Aeronautics and Space Administration, Langley Research Center, DOE Pacific Northwest National Laboratory, and Oak Ridge National Laboratories. Industrial partnerships exist with aerospace, automotive, defense, energy, and primary materials production sectors.

The award is also recognition of the contributions and innovations of the CFSP's former director, Bill Arbegast, who passed away in November 2009. Arbegast was considered a pioneer and leader in the world of friction stir processing, and served as the director of the center from the time of its establishment.

The Alexander Schwarzkopf Prize is awarded annually in the name of Dr. Alexander Schwarzkopf, who established the I/UCRC program at the NSF in 1979 and has managed this unique and remarkably effective program since its creation.





SCHOOL OF MINES REMEMBERS

Bill Arbegast

In December 2009, the School of Mines held a memorial service to remember and honor **Bill Arbegast** (Hon09), who passed away on November 28, 2009, at the age of 58. Arbegast joined the university as director of the Advanced Materials Processing and Joining Laboratory (AMP) in 2001, and also served as the director of the National Science Foundation's multi-university Industry/University Cooperative Research Center (I/UCRC) for Friction Stir Processing (CFSP) when the center was established in 2004. He served as the director of the AMP Lab and CFSP until his death.

During his career, Arbegast published more than 50 papers in national and international journals and was invited to present his research on four continents. He held six patents and generated millions of dollars in research funding related to friction stir processing, including the South Dakota School of Mines' new Repair, Refurbish, and Return to Service Applied Research Center (R3S), which Arbegast directed. His procedures for leading a multi-university I/UCRC prompted the National Science Foundation to invite him to write a book on the topic so that all I/UCRC's could model his concepts.

Arbegast was a believer in interdisciplinary research. He co-authored papers with at least 10 members of the School of Mines faculty from at least five departments. He was also a great supporter of graduate education and helped provide funding for many graduate students, including at least a dozen with whom he

co-authored papers. He also supported undergraduate research and provided funding for many undergraduates in research programs related to the AMP Lab and the CFSP. South Dakota School of Mines undergraduates have had the opportunity to make presentations to national audiences thanks to his mentoring and support. His entrepreneurial spirit was evident in all that he did. His impact on friction stir processing cannot be overstated.

"The world lost one of the great minds in the area of friction stir processing, and the South Dakota School of Mines and Technology lost a true friend, one of its most active researchers, and a true advocate for graduate education and undergraduate research," said President **Robert A. Wharton, Ph.D.** "His passing is a tremendous loss to his profession and to our campus."

At the fall 2009 commencement, Arbegast was posthumously awarded an honorary doctorate of science in recognition of his many contributions to friction stir processing and to the School of Mines.



DUSEL Impact

Reaches Beyond Physics

Economic impact of project set for major growth

As the Deep Underground Science and Engineering Laboratory (DUSEL) project continues to grow, its impact isn't just measured by the potential for groundbreaking physics and geoscience research, but also by its effect on the regional economy.

The DUSEL is more than just a beacon to scientists and engineers from all over the world; it is a draw to employees interested in building the infrastructure of the proposed laboratory. As the DUSEL grows in size and scope, a highly-skilled staff is required to continue its momentum—a staff that must live, work, and spend money, supporting the economic growth of the region.

The former Homestake Gold Mine, the site of the lab's development, has had a firm stake in the South Dakota economy since the state's founding. Opened in 1876, Homestake produced more than \$42 billion in gold in present-day dollars and employed thousands of people over the course of its 125-year lifespan. Its closure in 2003 signaled the end of an era. But with the National Science Foundation's selection of the mine as the future site of the DUSEL, a new door opened.

The longstanding connections between the School of Mines and Homestake began in 1885 when the university was established to meet the growing research needs of the mining industry. These connections continued when, nearly a decade ago, the School of Mines helped champion the conversion of the mine into a national laboratory. The School of Mines is proud to be a leading partner in bringing DUSEL from an extraordinary vision to a phenomenal reality.

The economic impact from the School of Mines involvement has been substantial, with the university receiving nearly \$26 million for DUSEL by the end of the year. Dr. **Bill Roggenthen** (GeolE69), co-principal investigator and School of Mines DUSEL project director,

says this money finances personnel for the design of the DUSEL and involves study and development of the site.

The university currently has 19 employees associated with the DUSEL, with plans to fill an additional 3 positions within the year to support DUSEL facility design activities. Through expenditures such as housing, food, entertainment, transportation, and more, these employees—and others associated with the project through the Sanford Underground Laboratory and the South Dakota Science and Technology Authority—inject money into the local economy and create a ripple effect, supporting additional local jobs.

Roggenthen notes that the School of Mines has taken the lead in moving the DUSEL work forward in South Dakota. The major contracts providing information for the design surface and underground infrastructure, the geotechnical characterization, and the underground laboratory design are all being managed through the university.

"The cooperation between the institution and the DUSEL has been excellent and is helped greatly by the School of Mines employees dedicated to the project," he says. "Most of the School of Mines personnel are located at the Lead office, and they are becoming the core of the group that will be responsible for actually building the laboratory."

With construction scheduled to begin in late 2012 and expected to last six to eight years, this impact will only grow. The project will require the refurbishment and construction of new buildings on the surface, construction and excavation of laboratory modules, creation of the laboratories themselves, installation of experiments, and more. The volume of work will result in the employment of local tradespeople, contracts to local businesses, and the import of technical



companies from outside the area, many of whom may rely on local talent to build their workforce. When the DUSEL reaches full operation in 2020, a crew of 150 people will be required just for operations, not including the scientists and engineers working in the laboratory on specific experiments.

The impact of this activity, says Dr. **Ronald White**, vice president for research at the School of Mines, can be difficult to quantify, but should not be underestimated. The DUSEL project is expected to bring more than \$1.2 billion over the course of the design and construction process, and the economic impact will only grow from there.

"When you invest what will amount to billions of dollars to create a national laboratory, there will be high-tech needs of that laboratory as it grows and develops," he says.

According to White, those needs will be served in two ways. One is the importation of talents, materials, and other things to answer and supply the needs of the DUSEL. The second is the creation of major high-tech industry homes in the region, whether they are branches of major organizations that have chosen to locate near the DUSEL or new and innovative activities.

"This has happened time and again, in other national laboratory developments. Looking at Oak Ridge, Brookhaven, or Fermi Laboratory, you can see that high-tech involvement has increased in each of these areas," White says. "I think that we can safely predict, on the basis of the history of other national labs, that will happen here. The portion that comes from the development of new industry here, or importation from outside, is going to be directly related to what role the School of Mines plays in the development of this high-tech world."



SANFORD

Dolan Named

2009 South Dakota Professor of the Year

If you go looking for Dr. **Dan Dolan**, more often than not you won't find him behind a podium in a lecture hall. He is a teacher, through and through, but that does not encompass his teaching style. You are more likely to find him interacting with and teaching students in different environments—flying hobby plans or racing corvettes, elbow deep in tools and grease while working with students late at night on Mini Baja or Formula SAE projects, or even leading his regular Friday night jam session on his porch, attended by faculty and students alike.

This outside of the box, outside of the classroom approach lies at the heart of Dolan's philosophy of education, and the reason that he was recently recognized with one of the highest honors in undergraduate teaching. Dolan, professor of mechanical engineering and director of the Center of Excellence for Advanced Manufacturing and Production (CAMP) at the South Dakota School of Mines and Technology, has been named the 2009 South Dakota Professor of the Year.

The award, presented by the Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education, is recognized as one of the nation's most prestigious awards honoring undergraduate teaching. Dolan was selected from nearly 300 top professors in the United States. This year, there were 38 state winners.

The U.S. Professors of the Year program salutes the most outstanding undergraduate instructors in the country—those who excel as teachers and influence the lives and careers of their students. Dolan is the most recent School of Mines professor recognized with this honor – Dr. Al

Boysen, professor of humanities, was selected as the 1998 honoree; Dr. **Stuart Kellogg** (M.S. EE82), head and Pietz Professor of industrial engineering, was selected as the 2003 honoree; and Dr. **Jon Kellar** (MetE84), head and professor of materials and metallurgical engineering, was selected as the 2008 honoree.

Dolan received his bachelor's, master's, and Ph.D. degrees in mechanical engineering from the University of Minnesota and joined the School of Mines as assistant professor in 1981. In addition to his work in the classroom, he also serves as director of CAMP, a competitive, nationally-recognized program that brings together students, faculty, and industry leaders to collaborate on real-world projects.

"Faculty shape the environment that stimulates students. Research shows that we must help get the students so engaged in, excited about, and committed to their education that they drive themselves to get the best education possible," Dolan said. "CAMP was set up to be such an environment."

The inspiration for CAMP was born during Dolan's 1989 sabbatical.

"Dr. Dolan is a high-caliber and innovative college professor with a true connection to the students he instructs. He is a motivating and creative individual who has made a huge difference in the lives of the students he teaches and his peer professionals that he mentors. I consider Dan Dolan as a role model in guiding my actions and life."

Stephen Wilkerson, Ph.D., P.E.
Chief Unmanned Vehicles Technology Division
Army Research Laboratory

"Dan is my friend and has been my mentor, my professor, and my boss. He is a talented leader and source of inspiration. He has devoted his professional life to helping others succeed, and without question, I owe my professional career and much of my approach in life to his influence, a thought that I have heard echoed by many of my friends and peers, his former students."

Mark Sauder (IE04)
Systems/Test Engineer
Procerus Technologies

Each Friday, he visited a different company to find out what they expected in young engineers. What he found is that they were looking for qualities that, at the time, didn't exist in new graduates — universal hands-on training, teaming, and other values. These desires of industry, coupled with the values that Dolan believes in, came together and in 1997 became CAMP.

More than 200 students and 20 professors on 13 teams make up the heart of CAMP's values-based teaming effort. Established in 1997, the program is an experiment in the use of co-curriculum to enhance engineering education through multidisciplinary teaming. Teams function as small learning communities with CAMP serving as an umbrella organization and a larger learning community. Design, creativity, inventiveness, hands-on learning, teaming, and leadership become the value-added education.

"It's an opportunity to bring reality into design while focusing on these important values, like respect and trust. They are already there within the students, we are just bringing them out," Dolan said. "Our industry support comes because they recognize and look to similar values. Engineers work in teams and companies value students who demonstrate that they can do that." Projects are selected for CAMP with the aim of exciting students, but also to help them relate to the large-scale problems facing the world today. For instance, the supermilage project focuses on energy and efficiency. Students deepen and broaden their understanding as they develop teaming and leadership skills working on co-curricular activities.

Students are expected to work from a set of core values—affection, trust, respect, responsibility, use of power and influence, and more—to build the teams. Several times during the year, students evaluate the levels of these values in their teams. Through this approach, the teams have become nationally and internationally competitive. And throughout it all, Dolan is working right there beside them—days, nights, and weekends. CAMP isn't a job to him; it is his mission, his set of beliefs, and his way of life.

"There is not a better way to get to know students than working with them outside of normal hours. It provides a context of who they are and of engineering in real life," Dolan said. "I want to get to know the person. I want to know who the student is, not just what they do."



"Dr. Dolan is an outstanding professor and excellent teacher through his methods of finding a balance of teaching us how to do things and helping us find our own solutions to problems. He enables our progress as students by teaching us to focus on processes and not just solutions. Through the values of understanding and commitment, he gives us the tools to find our answers for ourselves."

Raunaq Bhushan (M.S. TM, India)
CAMP Student Leader

"I have known and worked with Dr. Dolan for the last 17 years. He is an exceptionally gifted educator. His efforts in developing CAMP have resulted in a clearly differentiated program that Caterpillar has not found at any other university in the United States—differentiated by the deep cultural immersion into effective teamwork and leadership that it provides the students."

James Green (ME74)
General Manager, Program Management
Large Power System Division, Caterpillar



A group of five children, three girls and two boys, are standing on a dirt mound in front of a large, silver wind turbine. The children are smiling and looking towards the camera. The wind turbine has three blades and a tall, slender tower. The background is a clear, deep blue sky.

Renewable Energy Research Facility Creates Living Laboratory

The School of Mines welcomed the Student Council from South Canyon Lake Elementary to campus for the ribbon cutting of the Black Hills Power Renewable Energy Facility.

The South Dakota School of Mines and Technology and Black Hills Power have served as anchors of the Rapid City community for more than 125 years, and both institutions have contributed to the economic development and fiscal health of the region. In fall 2009, officials from the School of Mines and Black Hills Power unveiled a new collaboration: the Renewable Energy Research Facility, the product of a landmark partnership that is addressing our current and future energy needs.

The facility, funded through a \$90,000 donation from Black Hills Power, consists of one 20 kW ReDriven wind turbine, one 2.4 kW Skystream 3.7 wind turbine, and three EnPhase photovoltaic panels, providing modern technology for researching wind and solar energy opportunities. Standing high above campus on Smelter Hill, the equipment turns throughout the day, seeking the ever-abundant South Dakota sun and wind. The facility generated nearly 2,500 kW of power in March 2010, enough energy to power the lights on M-Hill for almost an entire year.

“An awareness of sustainable principles is an important part of any engineering and science curricula, and this endeavor will allow the School of Mines to equip our students with the technology they need to face these issues,” School of Mines President **Robert A. Wharton**, Ph.D., said.

Knowledge of renewable energy principles is an increasingly important skill for students

competing for technology jobs. Practicing sustainability as a campus through this partnership with Black Hills Power, there is an unprecedented opportunity to provide meaningful research experiences for engineering and science students and to establish collaborative outreach activities for the community and K-12 teachers and students.

“Black Hills Power believes a diverse portfolio of resources produces the best results for customers, and our partnership with the School of Mines demonstrates that philosophy,” said Chuck Loomis, Black Hills Power’s vice president of operations. “What is learned through this renewable energy research facility will be applied to meeting the challenges associated with the emerging field of renewable energy generation and distribution.”

The new facility is a living laboratory for students and faculty members, with future research possibilities including the investigation of blade design to optimize power production, vibration analysis of wind turbine towers and blades, a solar tracking system for photovoltaic panels, and power storage for the wind turbines. Potential research funding could come through agencies like the National Renewable Energy Laboratory, the National Science Foundation, and the American Wind Energy Association Members. The center also presents opportunities for collaborative outreach activities with K-12 teachers and students and education outreach within the community.



AISES CHAPTER HONORED FOR DIVERSITY EFFORTS



When **Adam Dell** (IS10) arrived at the South Dakota School of Mines and Technology in 2006, he found an institution committed to increasing the representation of Native Americans. He was approached by the Office of Multicultural Affairs and quickly became involved in developing and growing a strong American Indian Science and Engineering (AISES) chapter. "The potential of AISES and the support of the institution was what allowed me to continue my education," Dell said. "Being part of AISES has shaped me into the leader I am today. It has also provided me with the understanding that we can shape the future—the difference is you!"

At the School of Mines, shaping a strong and diverse student body is essential to maintaining the university's tradition of greatness. Student organizations like the American Indian Science and Engineering Society (AISES) help the School of Mines and students like Dell do just that, using academic and cultural support to attract

and retain highly-qualified students that bring a unique and diverse perspective to the campus.

Recently, the School of Mines AISES chapter received national recognition for its efforts in this area.

In 2008, AISES revamped its Stelvio J. Zanin Distinguished Chapter of the Year program to recognize the diverse strengths and skills present within its college chapters. Chapters now compete in four categories—Fundraising and Marketing, Recruitment and Retention, Outreach and Community Service, and Professional and Chapter Development—for one overarching award for overall excellence selected from among the applicants.

The School of Mines AISES chapter received both the Recruitment and Retention Chapter Award and the Distinguished Chapter of the Year Award.

"Our students are passionate about increasing the representation of Native Americans in science and engineering," says **Scott Wiley**, coordinator of the Office of Multicultural Affairs and staff advisor to the chapter. "Their message is that American Indians are welcomed and urgently needed in the science, technology, engineering, and mathematics (STEM) fields."

AISES's national mission is to improve the representation of Native Americans in science and engineering. **Dell**, now president of the School of Mines AISES chapter, says he wants to promote those goals, but also work to make the chapter's presence known on campus.

"We want to let everyone know that our university



is pushing to increase diversity and the representation of Native Americans on campus,” Dell says. “We also want to let students know that they have a place where they feel welcome. AISES is here to provide *tiospaye* (Lakota), that family aspect. If there is anything that you need, you can come here.”

For many Native American students coming to campus, Wiley says, it is often a significantly different environment than what they have experienced before. “It’s a whole different world for many of these students, especially if they come from a reservation or reservation school. They are smart, they did well on their ACTs, but they probably had a different classroom style and a whole different community feel,” Wiley says. “To come on campus can be threatening or different, so AISES exists to help students make that adjustment and succeed.”

And succeeding they are. While AISES has seen an 88 percent increase in student membership over last year, retention is the story to tell. With the success of the AISES chapter and other supportive organizations on campus, like Tiospaye in Engineering, one-year retention of Native American students has reached nearly 85 percent, exceeding the university’s one-year retention rate of 83 percent.

AISES expands its focus beyond current students, however. Many of the chapter’s activities are focused on improving the social interests of Native American populations. AISES has worked with the Black Hills Children’s Home and the Rapid City Club for Boys, both organizations with large populations of Native American children.

“The purpose of these activities is to give these students an understanding that science can be fun and it’s well within their capacity to achieve a degree in science or engineering,” Dell says. “AISES isn’t just about supporting the students that are already here—it’s about raising awareness with future students and bridging the gap.”



**President Robert A. Wharton, Ph.D.
and Adam Dell (IS10)**

Student Recognized for Leadership

Adam Dell (IS, Rapid City) was recently awarded the Leadership Award at the 2010 national AISES Leadership Conference.

Dell, a member of the Oglala Lakota Tribe, has served as the president of the School of Mines AISES chapter for four years and is dedicated to the AISES mission to substantially increase the representation of American Indian and Alaskan Natives in engineering, science, and other related technology fields.

The Leadership Award recipient is selected from among the conference attendees and is awarded to an individual who has most demonstrated the qualities of a leader—including communication skills, respect, integrity, vision, and goals.

AISES has played a particular role in Dell’s own success. He initially chose the School of Mines because of its reputation and credibility. “The School of Mines is regarded as one of the most prestigious science and engineering schools,” he said. “It also had an ideal degree program for me—a program that prepared me well for medical school.”

Research Experience Brings Students

BACK TO THE FUTURE

The South Dakota School of Mines and Technology is host to a new Research Experience for Undergraduates (REU) site, funded by the National Science Foundation for three years.

The REU program supports active research participation by undergraduate students. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. The School of Mines site, "Back to the Future: Metallurgy," offers a unique 10-week summer research program focused on integrated research experiences that involve metallurgical engineering, many with prevailing historical, social, or artistic themes.

Throughout the 2009 experience, students participated in a series of seminars and workshops in art and archaeometallurgy that intersected their prior academic training in materials and metallurgical engineering, and provided a unique historical and cultural framework for their current research. Seminar topics included metallurgy from a global perspective, NASA research activities and materials research, the changing face of metallurgy in the Florentine Republic, and metals from a Native American perspective. Hammering at a forge and glassblowing molten materials gave students a working knowledge of the hands-on applications that lie at the foundation of historical metallurgy, accentuating the modern research that they engaged in during the program.

The main objective of the REU site is to increase student appreciation of and entrance into graduate research programs. Students worked to become more competitive in a research environment, improving their technical communication, appreciation for diversity, understanding of historical/artistic context, and most importantly, overall research acumen.

An equally important objective — and achievement — of the program is to increase the number of minority students involved with cutting-edge research, according to Dr. **Michael West**, assistant professor, materials and metallurgical engineering, and site director of the REU program. Of the 10 students selected for the competitive program, two were Native American and three were women. In addition to representing ethnic and gender diversity, the site boasted geographic diversity, bringing students from across the country to the School of Mines.

"What really sets our site apart is the diversity aspect. It's not just what the REU did for underrepresented groups; it is what those groups brought to the REU," West said. "We had some incredible students, and the Native American student involvement was a huge benefit to the program. Also, bringing students from all over meant that we had a diversity of backgrounds that brought something extra to the program."

The real success stories, however, are the lasting connections made during the program. Local Lakota artist Jhon Goes In Center presented to students details on his background in metals research and the use of metals in past and present Native American art and culture. The three Native American students, **Jonathan Lu** (CSc, Rapid City) and **Elliot Hamilton**, worked many hours in addition to their research with Native American high school students on the School of Mines campus as part of the South Dakota Gaining Early Awareness and Readiness for Undergraduate Program. Hamilton also introduced fellow REU students **Marybeth Parker** and **Kathryn Strader**, of the University of Tennessee, Knoxville, to a different culture by inviting them to spend a weekend visiting the Pine Ridge reservation. Personal and professional growth arose from the partnering of senior **Nathan Saunders** (MetE, Rapid City)





Adam Argondizzo

Grove City College

Project: Recrystallization of Titanite Films



Ryan Foy

Montana Tech

Project: Nanoparticle Precious Metal Clays



Elliot Hamilton

South Dakota State University

Project: Corrosion Protection of the USS Arizona Memorial



Sean Longfox

South Dakota School of Mines and Technology

Project: Friction Stir Spot Weld Repair of Aluminum



Michell Loomis

Michigan Tech

Project: Friction Stir Reaction Processing in Aluminum



Jonathan Lu

South Dakota School of Mines and Technology

Project: Aluminum-Polymer Cryotank



Landon Luick

South Dakota School of Mines and Technology

Project: Friction Stir Processing of Carbon Nanotubes in Aluminum



Travis Maguluk

Michigan Tech

Project: Reduction of Black Hills Iron Ore

with Hamilton, resulting in an invited paper in the *ASM Journal of Failure Analysis*. West and Saunders believe these connections could benefit other REU sites as well.

"I thought that the REU program was a great opportunity to get a taste of what research really is, and it was also a great opportunity to shape younger students. My research partner was a recent high school graduate, and I thought his involvement was key to its success," Saunders said. "I gained a better understanding of how to help others with a background that isn't as technical as my own, as well as working on deadlines and teams. Working on teams is something that is going to be happening throughout engineers' careers, so it is a good head start."

REU site team: Dr. **Michael West**, site director; Dr. **Jon Kellar** (MetE84), assistant director and recruitment coordinator; Dr. **Phil Ahrenkeil**, Dr. **Bill Arbogast** (Hon09), Dr. **William Cross** (MetE84), Dr. **Jon Kellar**, Dr. **Stan Howard**, Dr. **Dana Medlin**, Dr. **Michael West** and **Deborah Mitchell**, faculty research mentors; Dr. **Alfred Boysen**, communication and seminar coordinator; Dr. **Stuart Kellogg** (M.S. EE82), assessment coordinator; **Deborah Mitchell**, artistic content and seminar presenter; **Patty Anderson**, historical content provider; and **James Rattling Leaf**, Native American recruiter.



Austin Nelson

South Dakota School of Mines and Technology

Project: Pelletization and Reduction of Local Black Hills Iron Ore



Marybeth Parker

University of Tennessee, Knoxville

Project: Mechanical Properties of Fused Deposition Polymers



Nathan Saunders

South Dakota School of Mines and Technology

Project: Corrosion Protection of the USS Arizona Memorial



Kathryn Strader

University of Tennessee, Knoxville

Project: Friction Stir Welding of ODS Steels



Veterans Find Support at School of Mines

Delving into campus archives, you can trace a continuous thread of military service throughout the School of Mines' history. Notes about students serving in the Mexican Border War in 1916-17 recall an oft-forgotten conflict. During World War II, the Prep Building was used as barracks. Dr. Harvey Fraser, the 14th president of the School of Mines and a West Point graduate, served in the U.S. Army, retiring as a brigadier general. And there are many other examples in our 125 years of history, stretching to the present, where the student body boasts both active members and proud veterans of the military.

The School of Mines has been named a Military Friendly School by *G.I. Jobs* magazine. The honor recognizes the university as a leader in providing accessible and quality education to the nation's servicemen and women. These students have served their country with distinction, and the School of Mines is committed to providing the support they need to obtain their educational goals.

The School of Mines is pledged to continue to

support the ROTC Mount Rushmore Battalion, the School of Mines Veteran's Club, and the newly-created Veterans Resource Center (VRC).

The VRC, located on the School of Mines campus, is sponsored by the university and TRIO Veterans Upward Bound, a program funded by the Department of Education. The center provides the opportunity for School of Mines veterans to connect with others with similar experiences, and offers educational resources, including college and study skills, tutoring, and assistance with scholarship searches and applications; career services, including assistance with resumes and cover letters; counseling and referral services, including information on VA benefits, G.I. Bill, and community veterans organizations; life skills, including stress, time, and conflict management; workshops; and guest speakers.

Aaron Baker (ChE, Rapid City) is the secretary of the student Veteran's Club. After serving a six-year tour in the Navy as a nuclear mechanic on the *USS Enterprise*, he began attending the School of Mines in 2009.



"It feels like we are making tremendous efforts to recruit former and current military members to attend the School of Mines."

Aaron Baker (ChE, Rapid City)

"I feel that the VRC has been a very helpful resource during my time here in school because I have been out of any type of structured learning environment for so long that I felt a little out of place, and going to another right-out-of-high-school student for help was a little weird. It was a little more comfortable knowing that there are so many others like me attending classes for the first time in a while," he said. "It feels like we are making tremendous efforts to recruit former and current military members to attend the School of Mines."

Cathy Payne is the coordinator of the Veterans Resource Center. She notes that roughly 1.5 million veterans will be entering the college system in the next few years, and services like those offered by the center are critical in recruiting and retaining those students.

"The services the center offers help to reduce the sense of isolation that many veterans experience in the college setting," she said. "Returning veterans often have problems—flashbacks, PTSD, injuries—that can have an effect on their performance. The center is a resource for those students, both as a liaison to help manage those issues and also as a place to form bonds and a sense of community with others who have had similar experiences."



Find Common Ground at the School of Mines

At first glance, **Katie Aurand** (EnvE, Rapid City) and **Mitchell Rodriguez** (ME/MetE, Rapid City) do not appear to have much in common. She's an environmental engineering major, and he studies metallurgical and mechanical engineering. She likes to write, and he likes to research. They do, however, both hail from Rapid City and share the distinction of being Presidential Scholars.

The Presidential Scholars Program was established in 1964 by executive order of the President of the United States to recognize and honor the nation's most distinguished graduating high school seniors. Initiated by President Lyndon Johnson, the Presidential Scholars Program annually selects one male and one female student from each state based on outstanding scholarship, service, leadership, and creativity through a rigorous selection and review process administered by the United States Department of Education.

This kind of highly-prized recognition gives students a ticket to prestigious and competitive colleges across the nation. Both Aurand and Rodriguez chose to stay in their hometown to attend the South Dakota School of Mines and Technology.

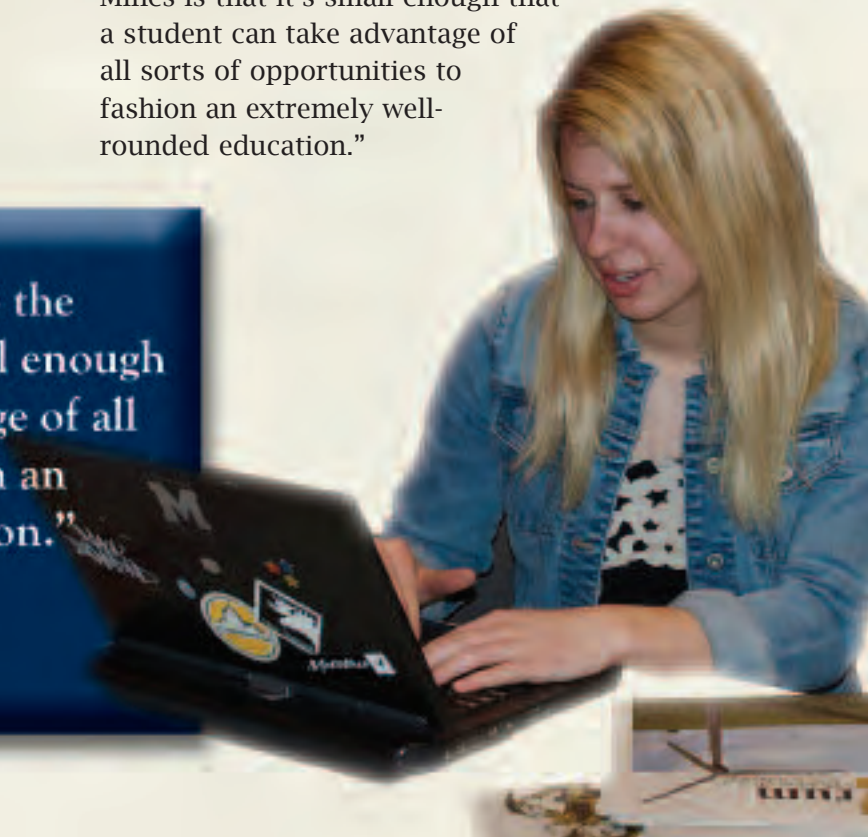
"Katie and Mitch are perfect examples of the high-caliber of students that we attract," said President **Robert A. Wharton**, Ph.D. "We are pleased that the best and the brightest recognize that they can receive a transformational education from the School of Mines and choose to remain in the area for their studies."


Aurand has been active on campus since she first arrived. She participates in undergraduate research on the effects of antimicrobial usage on swine production. She also serves as editor-in-chief of the *Aurum*, the student newspaper, and vice president of Norbeck Uni, the university chapter of the Norbeck Society. Aurand is also a member of the Rock Climbing Club, Ski and Snowboard Club, and the Soccer Club.

"Not only have I been able to build a strong scientific foundation at the School of Mines, I have been able to take hold of many other opportunities that have allowed me to hone the right side of my brain as well as the left," Aurand said. "The great thing about going to the School of Mines is that it's small enough that a student can take advantage of all sorts of opportunities to fashion an extremely well-rounded education."

"The great thing about going to the School of Mines is that it's small enough that a student can take advantage of all sorts of opportunities to fashion an extremely well-rounded education."

Katie Aurand, (EnvE Rapid City)





Aurand's educational experiences have also allowed her to see the world. In 2008, she traveled to Chile with the School of Mines' student organization Engineers and Scientists Abroad to work on an engineering service project. In 2009, she participated in a course on sustainable engineering in Freiberg, Germany. In addition to lectures, Aurand and other students visited wind turbine fields, biofuel processing centers, and solar cell production facilities.

Rodriguez, a metallurgical and mechanical engineering double major, is a member of the American Society of Mechanical Engineers, Material Advantage, Student Association, and the Unmanned Aerial Vehicle team.

Rodriguez's main involvement, however, has been in undergraduate research, where he is developing functional materials for flexible printed electronics. In February 2010, Rodriguez published a paper in the *Journal of Undergraduate Materials Research*, discussing his work. He worked on similar research as part of a summer internship program in the South Dakota Experimental Program to Stimulate Competitive Research (EPSCoR) program. The opportunity to participate in this level of research was a driving factor behind his choice to attend the School of Mines.

"My experiences in undergraduate research have helped me to improve my work ethic, develop my critical thinking skills, and better manage my time," Rodriguez said. "Likewise,

"My experiences in undergraduate research have helped me to improve my work ethic, develop my critical thinking skills, and better manage my time."

Mitchell Rodriguez, (ME/MetE Rapid City)

in my internships, I have had the opportunity to work with students and faculty from other fields and schools, exposing me to different perspectives and helping me to understand the process of collaboration in research."

Aurand and Rodriguez share traits with not only each other, but with many students at the School of Mines—they are talented, highly motivated, and involved.



VISION

for the Future of Research

The South Dakota School of Mines and Technology's dynamic research program attracts the attention of funding agencies and prospective faculty, researchers, and students alike. Recently, the School of Mines formed a task force to define a vision for the future of this highly successful and rapidly growing research program. After university-wide discussion, the task force identified four areas of emphasis. These research endeavors identify areas where there is a solid and credible basis for major development in the future. The criteria require that each area of emphasis support growth; find a niche of national excellence on a level with other institutions—regardless of size—engaged in similar work; and that the area be highly important to the nation, to the state, and to the university.

Dr. Ronald White, vice president for



research, says this strategic process is essential to the future of the School of Mines. He is heading an effort to assemble task forces for each emphasis area that will identify visionary plans by the end of the academic year.

"The time is now because the school has reached a crossroads and has made a determination that growth in its research and graduate programs will be a primary focus for the future," White said. "We have a responsibility to develop both graduate education and research. If we are going to develop those areas, we have to understand how we do it, and we have to have a vision that we realize. Creating this vision is an essential step to knowing where we want to be in the future."

Major Research Areas*

Materials and Manufacturing

69 tasks

\$24.7 million

This research area includes the basic science of materials, applied sciences related to materials, and advanced manufacturing technologies related to both military and civilian applications. Included are electromagnetic-, energetic-, and bio-materials as well as advanced composites and nanomaterials used in regular and novel devices. This research area extends from mathematical modeling of fundamental processes to advanced manufacturing technologies.

Underground Science and Engineering

8 tasks

\$7.1 million

The Underground Science and Engineering research area covers all current or future work related to underground research and technology. This includes research which can answer fundamental questions in physics, geology, geological engineering and biology and that can be addressed best in an underground environment. This research area also involves research in the fields critical to working and living underground, such as civil and mining engineering as well as other supporting engineering and technology disciplines.

Energy and Environment

29 tasks

\$6.2 million

Energy and Environment research focuses on the generation, storage and efficient utilization of renewable energy and natural resources and the assessment of the interaction between the environment and renewable energy technologies. Research on the interaction between renewable energy technologies and the environment (natural resources) is essential to understanding and establishing sustainability. The research embodies the interrelation between atmospheric and environmental conditions and the production and utilization of clean, renewable energy. Research on improved solar, wind, and bio-energy, and the interaction of these technologies with water resources, weather and climate defines this focus.

Science, Technology, Engineering, and Mathematics (STEM) Education

10 tasks

\$2.1 million

STEM education research is multi-disciplinary research in learning and teaching, specifically for STEM students and professionals. STEM education implementation is the development, execution, and assessment of the learning environment that encourages and supports this education. The primary goal of this thrust is to become the national leader in integrating the research environment and the learning environment for STEM education. In a certain sense, the entire School is the laboratory for this research.

*Total funding of ongoing activities as of September 2009.

SAVE THE DATE

Thursday, October 28, 2010



Mines Medal Dinner and Award Ceremony Honoring Steven Squyres, Ph.D. Principal investigator for NASA's Mars Rover Project



About the 2010 Mines Medal Recipient

Steven Squyres, Ph.D., has been named the 2010 recipient of the South Dakota School of Mines and Technology's prestigious Mines Medal. Squyres is the Goldwin Smith Professor of Astronomy at Cornell University and the principal investigator for the science payload on NASA's Mars Exploration Rover Project.

Squyres' research focuses on the large, solid bodies of the solar system: the terrestrial planets and the satellites of the Jovian planets.

Squyres has written numerous scientific articles in the field of planetary sciences and in 2005 published the popular book, *Roving Mars: Spirit, Opportunity, and the Exploration of the Red Planet*.

About the Mines Medal

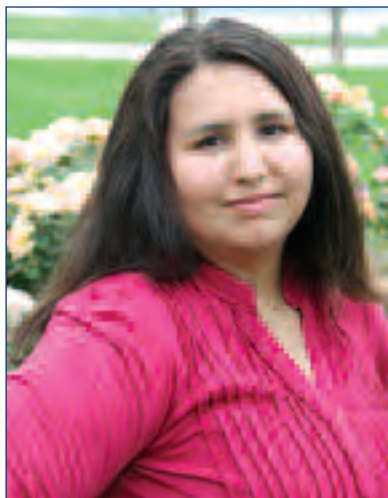
The South Dakota School of Mines and Technology launched the Mines Medal Award Program to honor engineers, scientists, and researchers who have demonstrated exceptional leadership and innovation. The award highlights the significant role these individuals play in our society ensuring our global preeminence in engineering and science.



STUDENT SPOTLIGHT

Shoup Awarded \$25,000 Scholarship

Deanna Shoup (IS10) was named a recipient of a prestigious Indian Health Services (IHS) scholarship.



The IHS Scholarship is a highly competitive national scholarship for federal or state-recognized American Indians and Alaska Natives. Shoup is a member of the Rosebud Sioux tribe. The total award, approximately

\$25,000 for the year, covers tuition, fees, books, a travel award, and monthly stipend. On average, the IHS receives 1,200 applications for 150 scholarships. The IHS scholarship is awarded to students who are planning on working in underserved disciplines in the medical field. Shoup will attend medical school this fall.

National Organization Recognizes School of Mines Students

Anastasia Baker (MetE, Rapid City) has been awarded the George A. Roberts Scholarship from the ASM Materials Education Foundation, a society dedicated to serving the materials science and engineering profession. Baker, of Rapid City, is one of seven students nationwide chosen for the award and will receive a \$6,000 scholarship.

Two School of Mines students have received recognition from the American Chemical Society (ACS), the world's largest scientific society. **David Bowles** (Chem, Gillette, Wyo.) is the recipient of the 2009 Undergraduate Award in Analytical Chemistry, awarded by the ACS Division of Analytical Chemistry and the journal Analytical Chemistry. **Katrina Donovan** (Chem, Martin) is the recipient of the 2009 Undergraduate Award in Inorganic Chemistry, awarded by the ACS Division of Inorganic Chemistry.

Jessica Chretien (IE, Rapid City) is the recipient of the 2009 UPS Scholarship for Minority Students, awarded by the Institute of Industrial Engineers (IIE). Founded in 1948, IIE is the world's largest professional society dedicated solely to the support of the industrial engineering profession and individuals involved with improving quality and productivity.

Scott Eddie (ChE, Winner) has been awarded a Donald F. and Mildred Topp Othmer National Scholarship Award from the American Institute of Chemical Engineers (AIChE). Eddie is one of 15 AIChE student members nationwide chosen for the award and will receive a \$1,000 scholarship.

Benjamin Mollman (IE, Rapid City) is the recipient of the 2009 America Responds Memorial Scholarship, awarded by the American Society of Safety Engineers Foundation (ASSEF). Founded in 1911, ASSE is the oldest and largest professional safety organization.

Brooke O'Bryan (MetE, Waukesha, Wis.) has been awarded the 2009 Mineral and Metallurgical Processing Division's (MPD) Richard R. Klimpel Scholarship from the Society for Mining, Metallurgy, and Exploration. The MPD offers up to six scholarships on an annual basis to students interested in pursuing careers in the area of mineral processing. The first place recipient receives the Richard Klimpel Scholarship, the largest offered by the division. O'Bryan will receive a \$3,000 scholarship.

Research in the Spotlight

Tom Warner (Ph.D. AES, Rapid City) was recently featured on the website, Wired. In the "This Day in Tech" section, Warner discussed his research in lightning behavior using high-speed video cameras. To view the article and video of his research, visit <<http://www.wired.com/thisdayintech/2010/02/gallery-lightning>>. Warner served as a pilot for the Institute of Atmospheric Science's T-28 armored research plane and received his master's degree in atmospheric sciences from the School of Mines in 2003. He is currently pursuing his Ph.D. in atmospheric and environmental sciences with a specialization in lightning research.

ACS Recognizes School of Mines Chapter

The School of Mines' student chapter of the American Chemical Society (ACS) has received a Commendable



Award from the national organization for 2008-09 academic year chapter activities. The recognition is based on the chapter's activity in community, campus, and national-level events.

Students Display Research at State Capitol

Four School of Mines students were invited to display their research at the State Capitol in Pierre, South Dakota, in February. Seventeen undergraduate students from South Dakota colleges and universities were selected to participate.



(l-r) **Tyler Blumenthal** (MetE, Rapid City), **Kevin Gray** (MetE, Gillette, Wyo.), Executive Director/CEO South Dakota Board of Regents **Jack Warner, Ph.D.**, **Nathan Huft** (MetE, Pierre), and **Eric Young** (MetE, Aberdeen) displayed their project, "The Cutting Edge: Quest for the Samurai Sword."

Students Participate in SHED Days

Member of the School of Mines Student Association traveled to Pierre to participate in the Student Higher Education Days (SHED) at the South Dakota Legislature in February. During the trip, South Dakota students lobbied the state legislature on behalf of higher education. The students included: **Carlos Beatty** (ME, Honolulu, Hawaii), **Rika Beck** (CE, Pierre), **Kimberlynn Cameron** (GeolE, Bismarck, N.D.), **Joseph Cass** (CSci, Sturgis), **Christopher Dale** (Phys, Rapid City), **Lukasz Dubaj** (CE/IS, Warsaw, Poland), **Sean Hayes** (ME, Eagle, Idaho), **Codie Hughes** (ChE, Huron), **Derek Nordby** (MetE, Stanton, Neb.), **Brooke O'Bryan** (MetE, Waukesha, Wis.), **Caitlin Rohde** (GeolE, Beulah, N.D.), **Lillian Temple** (CE, Glendive, Mont.), **Haianh Vo** (ChE, Hai Phong, Vietnam), **Tyler Vogel** (IEEM, Rapid City), **Evan Waddell** (ChE, Indianola, Iowa), **Christopher Weyer** (IE, Sturgis), and **Sterling Ziegler** (MinE, Scottsbluff, Neb.).

Student Organizations Receive Board of Regents Recognition

Three South Dakota School of Mines and Technology student organizations recently received recognition from the South Dakota Board of Regents. The American Institute of Chemical Engineers received the Award for Academic Excellence, the American Indian Science and Engineering Society received the Community Service Award, and the Aero Design Team/Center for Advanced Manufacturing and Production received the Award for Organizational Leadership.

School of Mines Crowns 2009 Homecoming Queen and King

Ashley Stewart (CE, Scotland) and **Marcus Baue** (MetE, Hysham, Mont.) were elected Homecoming Queen and King during the annual M-Week coronation ceremony. The king and queen presided over the M-Week parade and Homecoming football game. The other candidates for Homecoming King were **Colter Burleson** (ME, Newcastle, Wyo.), **Shane Grimme** (ME, Yankton), **Cliff Kling** (GeolE, Belle Fourche), and **Jason Miller** (CEng, Goodland, Minn.).



The other Homecoming Queen candidates were **Karina Garber** (IS, Rock Springs, Wyo.), **Lisa Robinson** (ME, Gettysburg), **Channing Thompson** (Chem, Rapid City), and **Alison Wahl** (ME, La Porte, Ind.).





Campus BRIEFINGS

Museum of Geology Welcomes New Arrivals



The Museum of Geology has welcomed a new arrival to its collection—a family of brontotheres. The cast family, including a bull, mother, and baby, was donated by the Field Museum of Chicago. When brontotheres—which means “thunder beast”—roamed the Earth more than 35 million years ago during the Eocene epoch, they stood approximately eight feet tall at the shoulders and weighed approximately two tons.

Because the family is too large for current display areas in the Museum of Geology, they will be displayed at the new Paleontology Research Laboratory, scheduled for completion this year. The baby is currently on display at the museum.

School of Mines Offers Top Paying Majors

The School of Mines offers four of the five top-paying majors for new college graduates in the United States, as listed in a recent survey by the National Association of Colleges and Employers (NACE), profiled by Forbes.com. The majors include chemical engineering, mining engineering, computer engineering, and computer science.

In addition, the NACE survey indicated that the average starting salary offers decreased by one percent for college graduates this past year. However, School of Mines data showed the opposite—average starting salaries for graduates increased by approximately one percent. The average starting salary offer for School of Mines 2008-09 graduates was more than \$56,000.

“These starting salaries show that, even in a tight job market, many great career opportunities exist for our engineering graduates,” said **Darrell Sawyer**, director of the School of Mines Career Center.

Karlin Selected for Prestigious Symposium

Dr. Jennifer Karlin, associate professor, industrial engineering, was selected to join 48 of the nation’s brightest young engineering researchers and educators at the National Academy of Engineering’s first Frontiers of Engineering Education symposium, held in November 2009.



The symposium brought together engineering faculty members in the first half of their careers who are developing and implementing innovative educational approaches in a variety of disciplines. The participants were nominated by fellow engineers or deans and chosen from a highly competitive pool of applicants.

Matejcik Appointed to Board of Directors

Dr. Frank Matejcik, associate professor, industrial engineering, has been appointed by the Black Hills Workshop, a training center providing support to people with disabilities, to its board of directors for a three-year term beginning in January 2010. Matejcik has had a long involvement with the Black Hills Workshop through a number of service learning and capstone design

projects sponsored by the organization. In 2007, a team of industrial and mechanical engineering students advised by Matejcik earned first place in the National NISH Innovation in the Workplace competition for a Black Hills Workshop-sponsored design project.

Detwiler Recognized by American Geophysical Union

Dr. Andrew Detwiler, professor, Institute of Atmospheric Sciences, has received a citation from the American Geophysical Union (AGU) for excellence in refereeing. The citation recognizes individuals for consistently providing constructive and thoughtful reviews of scientific articles. AGU is the publisher for journals such as *JGR-Atmospheres*, *Geophysical Research Letters*, *JGR-Solid Earth*, *Water Resources Research*, and *Radio Science*.



School of Mines President Joins Energy Initiatives

In line with the university's renewed focus on energy and sustainable practices, President **Robert A. Wharton**, Ph.D., has joined two energy initiatives.

Wharton recently joined the Council on Competitiveness, a group of CEOs, university presidents, and labor leaders working to set an action agenda to drive United States' competitiveness, productivity, and leadership. Wharton joins leaders from

Harvard University, Massachusetts Institute of Technology, Carnegie Mellon, and others on the council.

Wharton has also been named to the Association of Public and Land-grant Universities (APLU) Energy Advisory Committee. The APLU formed the Energy Advisory Committee to maximize and advance the contributions of public research universities to the energy independence effort, based on the idea that these institutions have valuable insight to offer in developing solutions to energy challenges facing the United States and the world. Wharton joins representatives from The Ohio State University, Massachusetts Institute of Technology, University of Hawaii, and others.



School of Mines Celebrates



125 Years of Excellence and Innovation

Founded in 1885, the South Dakota School of Mines and Technology has a proud heritage of excellence in preparing graduates to serve as leaders in engineering and science. In 2010, the university reached an important milestone—125 years of award-winning faculty, staff, and students collaborating to solve issues of critical importance to South Dakota, the nation, and the world. The School of Mines invites students, alumni, and the community to join us as we celebrate our legacy of educating the leaders of tomorrow.

The year of celebration began with a Campus Kick-Off on January 25, 2010.

For more information on how to participate in other events throughout this milestone year, visit <http://125.sdsmt.edu>.





Hardrockers Make All-American

Holyoak, Smith rank top athletics honors

The South Dakota School of Mines athletics department programs had an outstanding year with challenging schedules, competitive regular season and post-season play and quality performances from the student-athletes on and off the court.

Among the talented School of Mines student-athletes, two reached All-American status—a placekicker on the football team and a post player on the women's basketball squad.

Bethany Holyoak (IE, Moorcroft, Wyo.) was named to the National Association of Intercollegiate Athletics (NAIA) All-American Honorable Mention list for women's basketball.

Holyoak had an outstanding year for the Lady Hardrockers and an even more impressive college career. Holyoak finished her senior season with 510 total points, 279 rebounds, and 63 blocks. She finished second in the Dakota Athletic Conference (DAC) in scoring, averaging 17 points a game, had the second best field goal percentage in the DAC at 58 percent, was second in total rebounds, averaging 9.3 a game, and led the conference in total blocks averaging just over two a game.

In her college career, Holyoak registers as the No. 7 all-time School of Mines women's scorer with 1,648 points; the No. 5 all-time rebounder with 876 boards; and the No. 2 all-time blocker with 160.

Andy Smith (EE, Pierre) was named to the American Football Coaches Association (AFCA) All-American Team, the highest honor a college football player can earn, and the first awarded to a Hardrocker in the program's 125-year history.

"I am so proud of Andy, as a person and as a player," said Hardrocker football head coach Dan Kratzer. "He will do many things in the next couple of years that will ignite the fire in many of his teammates and his coaches."

Smith had one of the best seasons in Hardrocker history. In only his second year ever as a football player, Smith earned almost every kicking record at the School of Mines. In 2009, he set the record for longest field goal (52 yards); most points in a season by a kicker at 65 (second on the team); the best field goal kicking percentage in a season (.738); most field goals in a season with 11, and most extra points in a season with 32. He was 11-15 on the season for field goals and an impressive 32-32 on Point After Touchdowns (PAT's). Not only did he earn two DAC Player of the Week awards, he was also named NAIA Player of the Week once, which is another first for the Hardrocker football program.



Bethany Holyoak (IE, Moorcroft, Wyo.)

Andy Smith (EE, Pierre)

Area Meetings

Seattle, Washington – Jack and Elinor Meeker’s Memorial

Several alumni joined family and friends of Elinor and **Jack Meeker** (EE47/ME48) at a memorial service held in Seattle, Washington, in mid-August. Jack passed away July 3, 2009, following a brief illness, and Elinor passed away May 26, 2009, following a long battle with celiac disease. To this day, the Seattle Area Alumni Chapter owes its ongoing activity to Jack and Elinor’s efforts during the past several decades. Their efforts, hospitality, and dedication on behalf of the School of Mines were exemplary. They both continue to be greatly missed.



(l to r) **Steve Morgenstern** (ME83), **Dave Frerk** (ME61), **Tim Vottero** (Chem84), **Caroline Zebroski** (ME85), **John Meeker**, **Marlene Nelson** (ME74), **Vernon Abild** (EE50), **Ward Zimmerman** (ME50), and **Robert Simpson** (Ex74)

Rapid City, South Dakota – Spirit and Pride Picnic

The annual Adventure Weekend included another Spirit and Pride picnic on campus. The gathering was on Sunday, August 30, 2009, where Alumni Association Director **Tim Vottero** (Chem84) treated a group of freshmen from as far away as Vietnam to a picnic in the quadrangle across from the O’Harra Building. Adventure Weekend welcomes freshmen to campus through a variety of activities focused around a group theme and designed to help with the transition to campus life. Thanks to Dr. Pat Mahon, vice president of student affairs and dean of students, for leading this effort once again.



2009 Spirit and Pride freshmen with Alumni Association Director **Tim Vottero** (Chem84)

Norfolk, Nebraska – Area Gathering

Thanks go to **Joy McClure** (MetE07) for organizing a tour of Nucor Steel and arranging an alumni gathering for the northeast Nebraska area and beyond. Representing the School of Mines were President **Robert A. Wharton**, Ph.D. and faculty members Dr. **Jon Kellar** (MetE84), Dr. **Dana Medlin** and Dr. **Mike Langerman** (ME72).



(front row, l to r) **Charles Lutes** (EE56), **Suzann Bugenhagen**, **Joy McClure** (MetE07), **Mike Langerman** (ME72), **Jon Kellar** (MetE84), **Karmen Glaesman** (ChE98), **Megan Shearer**, **Kyle Reisenweber** (MetE07); (middle row, l to r) **Brook Bugenhagen** (MetE84), **Robert Wharton, Ph.D.** (School of Mines President), **Terry Rasmussen** (MetE91), **Chad Glaesman** (ChE97), **Karl Barfuss** (IE08), **Anthony Shearer** (CE00); (back row, l to r) **Dana Medlin** (MetE faculty), **Nick Volk** (ME09), **Matt Veghte** (EE08), **Patty Vig**, and **Joe Vig** (CE71). Also in attendance, but not pictured, was **Jason Fasnacht** (MetE03) and his wife, **Tina**.

Rapid City, South Dakota – M-Day

The M-Day tradition began in 1912 when a large "M" measuring 112 feet by 67 feet constructed on Cowboy Hill attracted attention and excited people's interest in the School of Mines. This year's M-Week—with the circus theme "Greatest Show on Earth"—began with the setting of the senior plaque and Black List crew weeding of M-Hill and continued with the three-ring activities on Saturday—M-Day parade, M-Day game, and M-Day Musters.

The parade was markedly improved over recent years thanks to the leadership of School of Mines President **Robert Wharton**, Ph.D., and the efforts of many students, faculty, staff, and alumni. Truly an extended-community parade, it included great support and participation from the downtown businesses and several locals. The parade route was lined with hundreds of kids and families, too. Alumni Association President **Ralph Wagner** (CE75) participated, along with several other board members and past presidents.

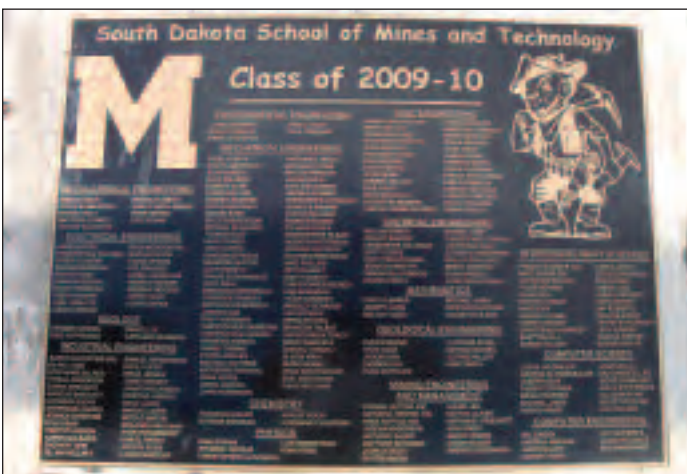
The Hardrocker football team played to a strong home crowd during M-Day, posting a dominating 41-7 victory over Dakota State. The football team also received recognition on a national scale when they received votes for the NAIA Top 25 coaches' poll after M-Day's victory. For more about Hardrocker athletics, please visit www.gorockers.com.

Another milestone stretched from Bismarck, North Dakota, to Yankton and from Port of Spain, Trinidad to Baku, Azerbaijan. Of course, that was the second annual "M-Day Muster" celebration, where any two or more alumni are gathered together in celebration of M-Day. Hardrockers "mustered" or gathered in small groups for food, drink, and remembrance of their years at the School of Mines.

This past year's M-Day—September 19, 2009—also marked 75 years since the Alumni Association was founded in 1934. A group of alumni gathered on the original M-Day (October 5, 1934) to establish the Alumni Association and hold the first alumni homecoming banquet at the Alex Johnson Hotel. This event was later chronicled in the first



Becky (former Alumni Association office staff member) and Bob Oliver (M.S. TM04) 'clowning around' at the M-Day Parade



2009-10 Senior Plaque



Parade Marshall, Alumni Board Member, and Professor Jon Kellar (MetE84) riding with daughters Catherine and Emma

Area Meetings

Hardrock, published by the Alumni Association on October 29, 1934, and authored by **Guy March** (EE22). See a PDF of the first *Hardrock* at <http://alumni.sdsmt.edu> under "Recent Alumni News."

M-Week culminated with the annual Hardrocker Hall of Fame inductee celebration. These inductees raise the total to 51 honorees and six teams since the Christensen Hall of Fame was established in 2004. The honorees: **Lance Mriden** (ME84), football; **Jack Goth** (MetE50), men's basketball; **Steph Law** (ChE93), women's basketball; **Tim Frank** (GeolE85), track and cross country; **Rose Schneider Pekarek** (CSc86), all-around athlete; **Jim Bauer** (Hon03), builder; and the tennis teams from the 1970s (Coach Clare Ekeland), team award. For more information, including a photo of the honorees, please visit <http://athletics.sdsmt.edu/hall-of-fame>.



Alumni President **Ralph Wagner** (CE75) with Past President **Tom Zeller** (ME70)



Freshman car riders **Scot Schweich** (ME, Lakeville, Minn.) and **Sam Sauer** (CE, Mobridge) with Grubby

M-Day Musters Around the World



Baku, Azerbaijan—William Shakespeare Pub: (l to r) Gary Christman (ChE74) *and Dan Borling* (GeolE81) *enjoyed fine Indian food and regaled each other with stories about Rapid City and their days on campus. "Congratulations to the Hardrockers on their homecoming win!" they said.*



Bismarck, North Dakota—Minnkota Power Milton R. Young Station: (l to r) Ryan Thompson (EE01), *Curt Ereth* (EE85), *and Tim Hagerott* (ME02) *gathered for a slice of cake and some caffeine while reminiscing about the 'good old days' at the School of Mines.*



La Crescenta, California—Barbeque at Roy and Pat Appleby's home: (l to r) **Arlyn Boekelheide** (Ex45), **Roy Appleby** (EE54), **Olivia Dean** (GenE56), **Holly Maudsley** (ChE95), and **Angela Monhein** (EE98) gathered at Pat and Roy Appleby's home to reminisce about M-Day and watch the televised game.



Midland, Michigan—Oscar's Restaurant: front row (l to r) **Christina Quiett** (ChE, Gettysburg); **Kala Keith** (ChE07); **Khang Vo** (ChE 09); back row (l-r) **Shannan Tanner** (ChE82); **Trudy** (ChE84) and **Rich Wells** (ChE82); **Christine** (ChE05) and **Seth Kruse** (CE07); **Alivia, Jon,** and **Anne Putnam** (ChE05); **Dan Wynia** (ChE96); and **April Timm**. All enjoyed a lovely autumn Midland Muster in memory of M-Day and in honor of the Hardrockers' victory!

Burien, Washington

Mick Kelley's Irish Pub: **Loretta** and **Terry Heil** (ME55) joined **John Meeker** (Jack and Elinor's son) and **John's** daughter, **Emily**, for fish and chips and beverages. (No photo available)

Mitchell, South Dakota – The Depot:

This Muster actually started in Sioux Falls at the home of **Marty Jackley** (EE92), where alumni helped him pack for his relocation to Pierre. **Keith Beck** (EE90), **Steve Braley** (EE91), **Jim Bruns** (ME93), **Jason Cook** (Chem91), **Dean Herll** (CE92), **James Larson** (IE91), **Eric Thompson** (CE93), and **Darrin Tille** (ME99) helped load Marty's possessions onto Steve Fueling's trailer and sent him on

his way. That evening at The Depot in Mitchell, another Muster with alumni **Rick Ames** (ME90), **Keith Beck** (EE90), **Kevin Erdmann** (ME04), **Brad Osterloo** (CSc92), and **Dave Kringen** discussed the advantages of having professional movers. (No photo available)



North Walsham, England—Felmingham Hall Manor House: A belated Muster was held on September 26, 2009, at Felmingham Hall, Felmingham, North Walsham, Norfolk, England. **Jim Ward** (EE49), **Nancy Ward Dunham** (EE57), and **George Dunham** (ME56) gathered to raise their glasses to the Hardrockers. Cheerio, Yanks!



Port of Spain, Trinidad (West Indies)—on board M/V "Nice One" boat: (l to r) **Damon Powers** (GeolE86) and **Brian Powers** (GeolE82) in the Boca de Huevos (2nd Boca), "down d' islands" just west of Port of Spain, Trinidad. Glad to see the Hardrockers' convincing win over Dakota State!

Area Meetings



Rapid City, South Dakota—Thirsty's: (l to r) Pete Birrenkott (ME71), Mark Oetken (MinE74), Duane Quiett (ME74), Les Thiel (ME67), Larry Pearson (ME72), Dave Berg (ME73), Rob Corner (CE78; in front), (person in white shirt not identified), Tom Monheim (EE62), Jerry Brown (CE65); Ken May (CE61), Tom Zeller (ME70), Paul Gnirk (MinE59), Pat Hallauer (ME76), Linda Rausch (ChE75); Ralph Wagner (CE75), Ken Miller (CE75), and Marc Loken (Math77, head turned away) and others celebrated the Hardrocker Homecoming win at Thirsty's downtown with a cash bar, snacks, and fun.



Yankton, South Dakota—The "7" Bar: along the banks of the Missouri River with the famous Ice House in the background. Those pictured are (l to r) Curt Pekerak (ME87), Suzie Uong, Dave Carda (ME91), Sarah Carda, Sue Wendte, Jeff Wendte (ME88), Joe Rust (ME87), Steve Sager (IE96), Dave Bushong (ChE80), Sarah Sager (IE98), Diane Bushong, Patti Eisenbraun, Dan Eisenbraun (CE75), Muriel Stach, Merrick Monaghan (ME86), and Greg Stach (CE71).

Denver, Colorado – Colorado Rockies Game

Mines Night at Coors Field had another great turnout September 25, 2009, for the Rockies baseball game versus the St. Louis Cardinals. School of Mines alumni and friends were treated to a game-winning sacrifice fly to right field in the ninth inning in this 2-1 Rockies victory. Following the game, the Mines 'team' and many others descended onto the field for a spectacular fireworks display. Thanks go to all who have made this a great autumn tradition and to Alumni President **Ralph Wagner** (CE75) for traveling in from Las Vegas, Nevada. The fourth annual event is scheduled for Friday, September 24, 2010.



(l to r) Randy Parcel (MinE67), Ralph Wagner (CE75), and Marlene Nelson (ME74) displaying the School of Mines banner with pride



Tracy Kovach (Parcel) with Jack Goth (MetE50)



Fireworks over Coors Field

Pierre, South Dakota – 15th Annual Tailgate Party

After weeks of bitter cold snow and a South Dakota winter that showed no sign of global warming, School of Mines alumni were ready to rock 'n' roll the American Legion Cabin in Pierre at the 15th Annual Tailgate Party on January 9, 2010. The first indicator the event was going to be a blowout was



Paul Gnirk (MinE59) and Steve Pirner (CE72) working the kid door prize table

the attendance—we surpassed the century mark for the first time with 104 alumni, friends, spouses, and children. The second indicator was the many new entries in the food contests—14 Crock Pot Classics, 11 Miscellaneous Masterpieces, and 10 Gold Digger's Delights. What an assortment! The third indicator was the copious quantities of beverages consumed—the first keg was dead before the first halftime.

To get the party rolling, **Jim** (GeolE71) and **Jeanne Goodman** (GeolE79), Alumni Association Executive Vice President **Paul Gnirk** (MinE59), **Michael Langerman** (ME72), and Alumni Association Director **Tim Vottero** (Chem84) welcomed the crowd. Then it was time to officially open the food contests for sampling, testing, and judging. The lucky winners were announced at halftime:

- Crock Pot Classics: First place went to **Marc Macy** (GeolE04) with his "Mines Cheesy Chicken Chowder," **Keld Ditlev** (CE06) took second with his "Grubby's Sirloin Chili," and **John Childs** (CE92) placed third with his "Grubby's Potato Cheese Soup."
- Miner's Miscellaneous Masterpieces: First place went to **Dale Healey** (IE06) with his "Hardrocker Jalapeno Hotbites," **Steve Pirner** (CE72) took second with his "New York Sausage Pot Porri," and **Dustin Witt** (CEng05) placed third with his "Grubby's Southwestern Biscuits."



Cooking contest winners (l-r): Marc Macy (GeolE04), Keld Ditlev (CE06), John Childs (CE92), Mike Perkovich (MinE83), Aaron Tieman (GeolE03), Dale Healey (IE06), Steve Pirner (CE72), and Dustin Witt (CEng05)



Stockade Lake
Custer State Park, South Dakota



Photo by Chad Coppess
www.travelsd.com

Area Meetings

• Gold Diggers Delights: First place went to **Mike Perkovich** (MinE83) with his “Grubby’s Glacial Treats,” **John Childs** (CE92) took second with his “Grubby’s Pecan Cheesecake,” and **Aaron Tieman** (GeolE03) took third with his “Hardrock Kick’n K-Bars.”



Spanning five decades of alumni (l-r): **Scott Quiett** (ME09), **Wally Larsen** (MinE53), **Darrell Utter** (CE09), and **Lisa Robinson** (ME09)



Mike Langerman (ME72) with **Vern Bump** (GeolE61) displaying 15th Annual Tailgate tribute award

The last prize of the day, a new 40-inch HDTV, came from the final game board and was won by **Dustin Witt** (CEng 05). Dustin called it “The Tainted TV” because the tradeoff for winning it was his beloved Philadelphia Eagles losing the game—life is never fair. That is why we celebrate with an annual tailgate party in Pierre—to reignite that School of Mines drive for fun. That tradition commonly includes having alumni attend that represent six decades of graduates—the 1950s through the



Dustin Witt (CEng 05) holding grand prize 40-inch HDTV



Paul Gnirk (MinE59) with School of Mines Athletic Director **Dick Kaiser**

Next, it was time to have some serious fun. Gnirk and Pirner worked hard to get everyone a door prize, including holding special drawings for those less than 12. As much fun as those kids had, they are all potential Hardrockers.

As the football games rolled on, winners on the game boards were tracked by **Dan Painter** (CE90). To keep the action hot, a separate group organized a hotly-contested dice game. Needless to say, the dice players soon became a raucous bunch, while others organized a much more sedate, but equally intense, game of Pinochle.

2000s—all gathering to celebrate our connection with the School of Mines and love for camaraderie.

Special thanks go to all who make this signature event a success, including the tailgate party committee members: **Mike Cepak** (MinE76), **Jeanne** (GeolE79) and **Jim Goodman** (GeolE71), **Dale Healey** (IE06), **Steve Johnson** (CE83), **Marc Macy** (GeolE04), **Tracy** (CE91) and **Dan Painter** (CE90), **Mike Perkovich** (MinE83), **Steve Pirner** (CE72), and **Nayyer Syed** (Geol94). Join us to rock 'n' roll the Legion Cabin again next year at the 16th Annual Tailgate Party. (Respectfully submitted by Steve Pirner)



The 15th Annual Pierre Tailgate Alumni Group

Atlanta, Georgia – Area Gathering

Alumni and friends gathered at the beautiful home of Cammi and **Bill Jones** (IE96) Friday, January 15, 2010, for a casual dinner. Alumni President **Ralph Wagner** (CE75) and Foundation Representative **Ron**



(l-r) Cammi Jones, **Bill Jones** (IE96), **Randy Wischmann** (ChE73), **Dell Gran** (EE66), Snow Williams, **Dan Williams** (ME66), **Jim Gassen** (ME50), Helen Gassen, **Ron Jeitz** (CE69), **Jean Jeitz**, **Ralph Wagner** (CE75), **Mike Weber** (ME85), **Patrick Carver** (MetE94). The photo was taken by Jim and Helen Gassen's daughter, Helene Lollis.

Jeitz (CE69) attended with news from the School of Mines. Some may remember Mrs. Jones, Bill's grandmother, who was house mother in several campus dorms for many years. Bill's father "big Bill" also worked at the School of Mines for many years in the campus administration. Thanks go to Cammi and Bill for opening their home!

New Orleans, Louisiana – Area Gathering

The Bull's Corner Restaurant in LaPlace, Louisiana, welcomed Alumni President **Ralph Wagner** (CE75) and Foundation Representative **Ron Jeitz** (CE69) to the southland. Several alumni and guests joined the evening event on January 16, 2010, complete with news from South Dakota and our alma mater. Thanks go to Cheri and **Greg Deis** (ChE76), and **Bob Heier** (ME73) for coordinating the evening. In addition to a nice visit, the Saints won their first playoff game that evening so the group was full of cheer!



(l to r) **Henry Schilling** (ME85), **Ron Jeitz** (CE69), **Cynthia Schilling**, **John Chikos** (CE75), **Jeanine Chikos**, **Donna Schultz**, **Don Penner** (Math75), **Terry Schultz** (ChE83), **Ralph Wagner** (CE75), **Erenstine Price**, **Dennis Price** (EE61), **Cheri Deis**, **Greg Deis** (ChE76)

Rapid City, South Dakota – 53rd Alumni Recognition Dinner

On the heels of Valentine's Day, this year's 53rd Annual Alumni Recognition Dinner (a.k.a. Annual Alumni President's Dinner) warmed the hearts of alumni, students, faculty, and friends, including our 2009-10 International Alumni President **Ralph Wagner** (CE75). Ralph is the 61st Alumni President since the Alumni Association began in 1934. Joining Ralph during the Valentine's Day weekend event

Area Meetings

were Past Alumni Presidents **Glenn Barber** (CE60), **Everett Bloom** (MetE63), **Paul Gnirk** (MinE59), **Ken May** (CE61), **Bob Miesen** (CE61), **Marlene Nelson** (ME74), and **Tom Zeller** (ME70) along with many local alumni, campus faculty and staff, spouses, and guests.



Past Presidents in attendance: (l to r) Tom Zeller (ME70), Paul Gnirk (MinE59), Marlene Nelson (ME74), Bob Miesen (CE61), Ken May (CE61), Glenn Barber (CE60), Everett Bloom (MetE63), and Ralph Wagner (CE75)

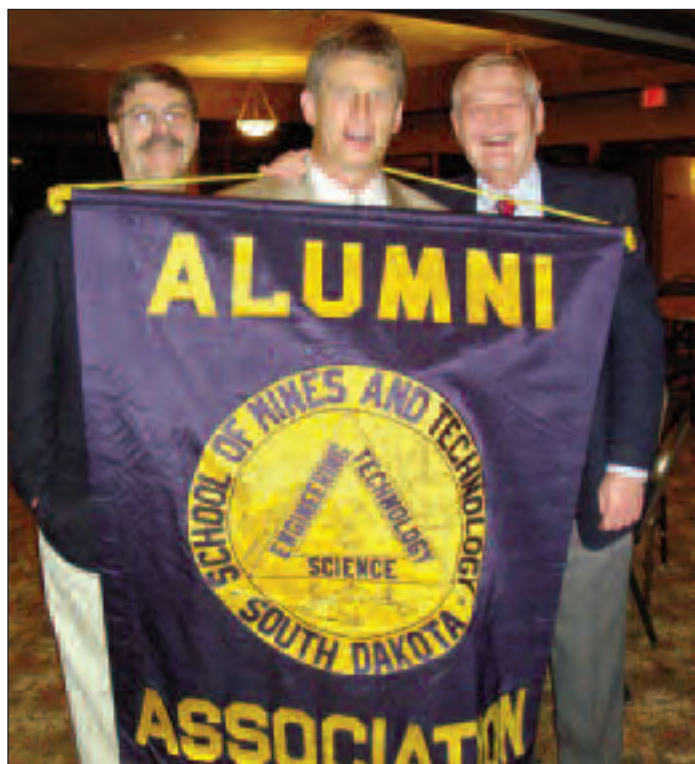


Fellow MetEs Jon Kellar (MEtE84) and Everett Bloom (MetE63)



Brett Stenson (MinE79) and Ralph Wagner (CE75)

President Wagner's message, and the format of the evening's program, was to recognize the many volunteers, award recipients, and collaborators that have helped distinguish our Alumni Association for the past year and for its 75-year history (See Ralph's letter on page 1). Wagner encouraged everyone to attend next summer's All-School Reunion July 7-11, 2010. Special thanks also go to Debbie Wagner and their son, Michael, for making time to join this celebration again this year.



Ken Miller (CE75) and Gary Calahan (ME70) 'banner' the President, Ralph Wagner (CE75) middle

Sun Lakes, Arizona – Area Gathering

Betty and **Jay Brink** (EE56) hosted a Valentine's Day alumni gathering at their Sun Lakes, Arizona, home for snowbirds and others on February 14, 2009. In attendance were (pictured on next page, back row, (l to r) **Al Liffengren** (ME57), **Loren Henry** (CE55), **Mark Lux** (MinE80), **Ev Kjerluff** (EE58), **Ed Bearg** (GenE58), **Harold Nelson** (GenE58), **Bernie Hoogestraat** (GeolE56), **Dean Kurtz** (CE50); (front

row, l to r) **Duff Erickson** (MinE55) and **Jay Brink** (EE56). Thanks go to the Brinks, the alumni, and spouses/guests for gathering in Arizona during this Valentine's Day weekend.



Sun Lakes, Arizona, group

Dallas, Texas – Area Gathering

Dallas/Fort Worth, Texas, area alumni and friends were treated to a genuine Texas barbeque on Saturday, February 20, 2010, at the Spring Creek Barbecue in Irving. Alumni President **Ralph Wagner** (CE75) and Area Vice President **Brad Bradfield** (EE80) greeted attendees and shared news from campus and South Dakota. Thanks, Brad, for keeping the barbeque hot and spicy in Texas!



(l to r) **Happy** and **Brad Bradfield** (EE80), **Jeff Hiemstra** (ChE82) and daughter **Tori**, **Ryan Mettler** (ChE98) and **Dominique (Saurage) Mettler** (MinE00), **Mark Barend** (MinE78) and **Lee Berend**, and **Ralph Wagner** (CE75)

Tucson, Casa Grande, and Phoenix, Arizona – Area Gatherings and SME Social

Alumni President **Ralph Wagner** (CE75), Executive Vice President **Paul Gnirk** (MinE59), and Alumni Director **Tim Vottero** (Chem84) made a southwest swing through Arizona in February 2010 to visit with several dozen alumni and friends, most of whom were escaping the exposure to South Dakota's winter. Special thanks go to President Wagner for his many road miles, Southwest Gas tours, and navigation skills.



*Three amigos in Arizona: **Paul Gnirk** (MinE59), **Tim Vottero** (Chem84), and **Ralph Wagner** (CE75) traveling the state in a "SDSMT" marked car*



*Freshmen of 1955 classmates (l to r) **Paul Gnirk** (MinE59), **C.J. DeLange** (ME60), and **Bill Richardson** (ME59)*

Area Meetings



Tucson group (seated, l to r) Denise Miller (Chem76), Liz Gray (Richter), Shirley Richardson, Marian Orton, Maureen Miller; (standing, l to r) Ralph Wagner (CE75), Tim Vottero (Chem84), Doug Miller (GeolE75), Bob Stofft (CE62), Paul Gnirk (MinE59), Chris Kruschke (ME93), A.J. Richter (Phys62), Dave Likness (ChE62), Bill Richardson (ME59), Shirley DeLange, C.J. DeLange (ME60), Don Orton (EE68), Ken Keys (EE75), and Marvin Miller (MinE73)

The first stop was in Tucson, where fine Mexican food and engaging conversation was the menu for Saturday, February 27. The Old Pueblo Grille was a wonderful venue, complete with a private room. Several mini reunions were an added course,



Brothers Bob Stofft (CE62) and Bill Stofft



Greg Nelson with the shot of the day on the 18th hole



The Whole Group at Casa Grande



Ralph Wagner (CE75) "mining" future alumni at SME



Janet Carrick (MinE81), First Lady Dr. Carolyn Fassi Wharton, and Conlan Nelson (MinE, Brighton, Colo.)



President Robert A. Wharton, Ph.D., and Shashi Kanth (M.S. MinE93) present Andrea Brickey (MinE99) with the 2010 Outstanding Recent Graduate award in Mining Engineering

including an impromptu freshmen of 1955 reunion among three alumni.

The next stop was in Casa Grande, where the three amigos crashed the February 28 reunion of many amigos with ties to South Dakota. Alumni from the 1960s era, and their friends and relatives, all descended on the Francisco Grande Resort, the former San Francisco Giants' spring training camp.



The Presidents—School of Mines President Robert A. Wharton, Ph.D. (center) flanked by Alumni Presidents Ralph Wagner (CE75), Paul Gnirk (MinE59), Larry Pearson (ME72), and Tom Zeller (ME70)

After an 18-hole round of golf, the group gathered for a light-hearted reception and dinner. Special thanks go to Ed "Butch" Olson (ME61) for coordinating the weekend event and allowing the interlopers to join in the fun!

The final stop in Arizona was at the annual Society for Mining, Metallurgy, and Exploration (SME) Alumni Social at the Sheridan Hotel on March 2, 2010. This decades-old tradition was better than ever, thanks to sponsors Atlas Copco Drilling Solutions, LLC, and Komatsu. The evening was filled with student awards, alumni recognitions, and School of Mines news. We appreciate President Robert A. Wharton, Ph.D., and First Lady Carolyn Fassi Wharton attending the event amidst their travels. Thanks also go to the many alumni, faculty, students, and friends of the university who support this annual event.

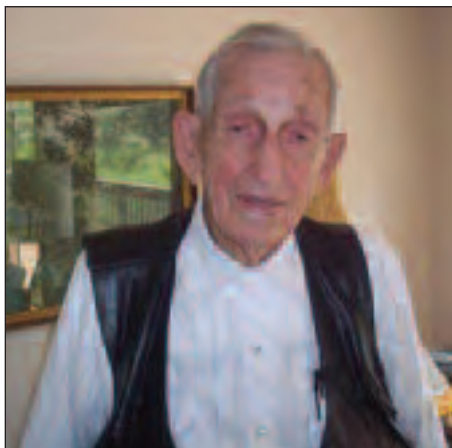


CLASS Notes

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1930s

Respectfully submitted by **M.R. Hansen** (CE69)—“I went to visit **Ralph O’Neill** (CE36) on July 24, 2009, at his home in Custer, South Dakota. He appears to be in good health, has a very sharp memory, and does not wear glasses—not bad for a man nearly 102 years old! Ralph may be our oldest civil engineering alum and certainly one of our oldest School of Mines alumni. Ralph was born on a ranch in Folsom, South Dakota, on Spring Creek near Hermosa, in 1907. He went to country school, graduated from Rapid City High School in 1927, and enrolled at the School of Mines in 1928. His studies were interrupted in 1930 because of economic conditions during the Great Depression. He speaks fondly of **Guy March** (EE22), who helped him come back to school in 1934, where he graduated in 1936 with a B.S. degree in civil engineering. He also mentioned **Earl Dake** (CE24) as a prominent civil faculty member, whom I learned engineering surveying from. After graduating from the School of Mines in 1936, Ralph



Ralph O’Neill (CE36) at age 101 at his home in Custer, South Dakota

worked for the South Dakota Department of Transportation (SDDOT) for 38 years, retiring in 1974. His first job was fieldwork to verify and draw all of the county road maps for South Dakota. After finishing this project, he assembled and drew, by hand, the South Dakota state highway map in 1939. We have one of his maps framed and hanging in the civil and environmental engineering (CEE) office at the School of Mines. I have admired this map many times; in fact, this is what inspired me to visit Ralph. After the mapping projects, Ralph transferred to the bridge section, where he worked most of his career. During the war years, he was assigned to homeland-security type projects, analyzing bridges throughout South Dakota for army truck loadings. After retiring from the SDDOT, Ralph helped Aaron Swan for more than 20 years to establish his consulting firm. Aaron was awarded a Bureau of Indian Affairs contract to inspect more than 700 bridges in 25 states, including Native American reservations in Maine, South Carolina, and Florida, and Ralph did most of the fieldwork. This is a remarkable working career of more than 60 years! Ralph told many other stories that mentioned prominent alumni such as **Gene Meeker** (CE27), father of **Jack Meeker** (EE47/ME48), and **Jim Bump** (MetE29), father of **Jim** (CE57) and **Vern Bump** (GeolE61). He mentioned that the School of Mines initiation of 1928 was very tough; part of their work was to clear trees and brush out of Rapid Creek by the campus. We should all realize that many generations

of engineers came before us at the School of Mines and made this university what it is today. Ralph said that young engineers today could learn something from the old engineers on the job when they go to work! Ralph also mentioned that before an engineer tries a new design, such as a box culvert, go talk to the maintenance people who took care of the old bridges. Ralph has four children, **Kenneth** (ChE64) in Houston, Texas; Eileen in Custer; Randy in Rapid City; and Charlene in Lead. He also has a friend, Gayle Zelenka, who will drive him places occasionally. Ralph is a great supporter of the American Society of Civil Engineers student chapter and of the Lady Hardrockers. In fact, he showed me the basketball, signed by the entire team, which they presented to him on his 100th birthday. He attended the last 5-year alumni reunion and plans to attend the next one in 2010. I have invited him to come to speak to the CEE students in the fall to relate many of his work experiences and give us all some advice. We can all hope to be like Ralph, alive and active at 101 years old! I forgot to ask him his secret to good health.”

Garfield Muchow (CE34) advises, “It is with much sadness that I announce the passing of my beloved wife, Edith Annice Howarth Muchow, of 73 years. She passed away on October 26, 2009. Edith was the niece of George Thomson, former groundskeeper at the School of Mines. I believe there is a sundial in her uncle George’s memory on the grounds. Edith was 94 years of age. Uncle George Thomson was her favorite uncle!”

Ernest Thurlow (Geol39) sends, “I had another subsection alumni meeting (second annual) with **Maynard Raasch** (Chem37) in Wilmington, Delaware. We decided to call ourselves the “Two Rivers” subsection for the Brandy wine of historic fame Delaware and the Hassayampa of Yavapai and Apache lore—the “Upside down” river at Wickenburg, Arizona. We had a good time at son Rich’s home and saw my granddaughter, Abbie, over lunch.”

1940s

Lloyd Darnall (CE44) advises, “Maxine and I have scheduled an elderhostel (Exploritas) in New Orleans [Louisiana] in March. One of the things attracting us to New Orleans is to see the WWII museum. Then, if everything goes according to plan, we will be in Rapid City for the reunion in July. If my memory hasn’t failed me, I have been to all of the reunions, including No. 1 in 1946!”

Dale Doerr’s (CE42) wife, Nadine Doerr, died January 30, 2009, from complications resulting from Aortic Aneurysm corrective surgery. Sincere condolences go to Dale on his family’s loss.

Lawrence Dugdale (GenE47) shares, “We expect some of the Dugdale family members to be present at the 2010 reunion.”

Mitchell Liss (ChE47) updates, “Janice and I have been living for two years at Fairwings Community Center with 24 other retirees (average of 87 years and mainly women). They have challenging programs for mental and physical welfare (no

comments please...). Janice is not well, and I do not want to leave her, so we will not be attending the 2010 reunion.”

Norman Menyuk (Phys48) says, “Nothing new other than I am still here!”

Jack Nelson (MetE47) mentions, “If the good Lord is willing, and the creek doesn’t rise, I plan to be in Rapid City for Homecoming 2010!”

Marvin Peterson (Phys48) sends, “I am keeping busy as president of our local Kiwanis Club and computer club lam monitor. We hope to attend the 2010 reunion.”

Ronald Pulfrey (CE48) mentions, “I am physically sound and hope to be able to celebrate my 90th birthday next spring.”

John Shedd (GenE42) shares, “I am the brother-in-law of **James Bork** (MetE35). Sorry, we cannot be there for the 2010 reunion. I guess I am too old/mature. Best regards!”

Dean Starr (MetE43) updates, “My dear wife, Barbara C. Starr, passed away on June 20, 2009, in Reading Hospital in Reading, Pennsylvania.”

The Alumni Association was informed that Erma E. Stevens, 88, passed away. She was the wife of the late **James E. Stevens, Sr.** (CE40) who graduated from the School of Mines and went on to a distinguished career with the Chicago Bridge and Iron Company.

Norbert Vinatieri (MetE43) shares, “The alumni publication is

excellent. The in-between newsprint papers are also most informational. It seems there is lots of construction on campus going on. Wow! Where is the money coming from? Just a normal response... The school is taking on quite a few athletic people. They must have teaching assignments too! Now the recruiters have to get busy on the high school campuses. Out here, the University of Southern California is in that mode, and it pays off big time. There are about 90,000 attendees at a typical game. Potential players come from all over the country, anxious to play on a good team and for a great coach. My years of life caught up with a piano keyboard this year. Keep up the good work, and I wish you a good year.”

Robert Winkler (CE43) sent, “We had a mountain lion out on the front deck of our Beulah, Wyoming, home for about 10 minutes. I took flash pictures, and the flash didn’t seem to scare him a bit. Kathy won’t go outside by herself now, I must go with her.”

1950s

George Baumann (CE53) tells, “I had a little heart trouble in Rapid City at the end of May 2009, but everything is fine now. I am planning on being at the reunion in July!”

Bill Bohannon (ME52) shared a sad note: “My dear lady, Jean, fought a courageous battle against metastasized breast cancer. She was at home in hospice care when she passed away on November 4, 2009, after a little over a month in hospice. She was reasonably comfortable

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and received much support and prayers from family and friends.”

Raman Briggs (ChE57) reports, “I graduated in 1957 and have retired from everything except living, church, church choir, and the Barbershop Harmony Society.”

Carl Buttemeier (EE59) communicates, “I have been doing some consulting with B/E Aerospace and Innovative Technical Solutions. My granddaughters (16 and 14) will be playing in the city tennis finals, which are always fun to watch. Otherwise, things are good—we sing in the choir, work with the CROP walls, etc.”

William Cohan (MinE55) shares, “I am still very busy in my consulting practice. I served for six years on Colorado’s Mined Land Reclamation Board and four years on the Minerals, Energy, and Geology Advisory Board to the Governor of Colorado. All the children are grown and married. We make an annual trip to California each fall to visit old friends from my asbestos mining days in the 1960s.”

Roger Dean (CE57) says, “I am still working as a contract employee, supporting Federal Highway Administration in International Training.”

Al Dougal (CE50) mentions, “My wife, Dortha, is now in a senior care facility. She has had a tough year. She has Alzheimer’s disease. On top of that, she had cancer surgery in January, then fell and fractured her pelvic bone in May. I will see you in July for the reunion.”

Frank Dvoracek (EE54) shared, “Enjoying retirement. We both are doing volunteer work at the local Gold Bug Park. This park has a couple of simple mines (horizontal) and a stamp mill. Hundreds of fifth graders are given tours of the facility.”

During a recent (January 23, 2010) national Triangle Fraternity alumni gathering at the Ancala Country Club, Scottsdale, Arizona, **Bernie Hoogestraat** (GeolE56) received the “2010 Triangle Fraternity Distinguished Alumnus Award.” Joining Bernie on this occasion were three of his School of Mines classmates and fraternity brothers, **Jay Brink** (EE56), **Wayne Echelberger** (CE56), and **Lavalle Ptak** (Phys56). Also in attendance were **Ed Bearg** (GenE58) and **Harry Rossander** (CE81). Thanks to Wayne for the notice and photo.



(l to r) **Lavalle Ptak** (Phys56), **Jay Brink** (EE56), **Bernie Hoogestraat** (GeolE56), **Wayne Echleberger** (CE56), and **Harry Rossander** (CE81)

Charles James (ME51) sends, “We are just enjoying retirement at Air Force Village West, a continuing care facility here in Riverside, California. Plus, all of our children are in California

with our daughter and her husband in Riverside. Son Bill is in Sacramento and our oldest son and his wife live in the San Francisco area.”

Bruce Johnsen (CE59) says, “A little less work and a little more vacation! It seems to be working well, and I am grateful for the good health to enjoy it. I am still working as a meeting facilitator, mediator, and executive coach with interesting, good people. What more could I ask? See ya in July!”

Roy Kepferle (Geol54) updates, “Travel these days is vicarious through our kids and grandkids. Sadly, we will miss the reunion again.”

Alan Leffengren (ME57) shares, “We had the most enjoyable time with **Loren Henry** (CE55), his wife, and their family on Thanksgiving. Not sure whether we’ll be able to make the 2010 reunion.”

John Mohr (EE56) mentions, “We went through the Panama Canal in January 2010 as a part of a tour of Panama. We learned that the original concrete is holding up well. Kudos to those engineers! They are now digging for bigger locks: about 150 feet wide and 1,400 feet long. We will be off to Alaska again this summer (our 10th trip) to see our daughter and family.”

Calvin Morgan (EE52) mentions, “I am now widowed and living with my son at the ‘old homestead’ with the help of my children and grandchildren. I am enjoying my senior years!”

Leland Nitteberg (ME51) updates, “My plan is for me to move in with my daughter and her family at the end of November.”

David Papcke (GeolE58) advises, “No retirement yet! The tree farm in the Black Hills keeps us busy—summer and winter. I just love the woods; just hope we don’t develop it all away!!!”

Jerome Popowski (EE59) shares, “We celebrated our 50th wedding anniversary in June along with our three sons and their families. I attended the memorial for Jack Meeker in August. We visited the historic Meeker ranch near Custer, South Dakota, last fall on our annual stay at our cabin in Custer State Park. We visited my School of Mines college roommate, **Monte Widdoss** (EE59), and his wife on a trip to southern California in April. I’ve recovered from hernia surgery and am back playing tennis. Life is good!”

Don Schlegel (EE56) says, “Carol and I celebrated our 50th anniversary in September 2009 and again with our three children and four grandchildren in Hilton Head [South Carolina] over Thanksgiving.”

Robert Sheakley (EE52) communicates, “We’re still hanging on, but no longer able to divide our time with six months in Florida. We are involved with closing up and selling our Florida address this spring. Only have one grandson, who is 19, but he lives close so we are able to see him often. We miss Rapid City and the School of Mines. It is hard to believe it has been 57 years. I am sending my best to all!”

Bob Smith (EE54) says, “All is well, but I feel the years—especially with all of the snow to move. It wasn’t a problem in Phoenix for 45 years ... hmmm?”

Maynard Stangeland (ME58) reports, “I have had a very challenging 52 years involved in the design/development of most of our nation’s rocket engines for the Thor, Atlas, Jupiter, Apollo space shuttle, Delta, and now the Ares, as well as numerous experimental and spare engines. I’ve held numerous positions, including manager, program manager, director, and chief engineer. I retired in 2004 as chief designer, but have continued as a consultant for NASA and Rocketdyne (now Pratt and Whitney Rocketdyne) since that time, participating on design review and flight-readiness review boards. I guess I flunked retirement. Lucy and I are enjoying our 15 grandchildren that range in age from two to 29 years.”

Bert Thomsen (GeolE59) says, “I had a close call in May. I had something called Dieulafoy’s Lesion—better known as upper GI bleeding—resulting from a ruptured blood vessel in the esophagus or stomach. It started suddenly about 9 p.m. at night. Symptoms were nausea and vomiting (lots of blood). My son, who was visiting from Wisconsin, called 911, and the medics rushed me to the emergency room. The doctors used an endoscope to find and install ‘clips’ on the ruptured vessel. I spent three days in the ICU and four more days in the hospital and received lots of new blood.

Fortunately, such events are rare and seldom recur. So far so good I hope to be back for the 2010 reunion.”

Royal West (GeolE50) communicates, “My former wife and former fiancé both died from cancer. I have a lot of heart problems, but they have been resolved. I have a room in my daughter, Elizabeth’s, home.”

Monte Widdoss (EE59) shares, “I am working half-time for SAIC in business development for port security system design and integration in California.”

1960s

Chester Anderson (CE60) reports, “The family continues to flourish and grow with eight grandchildren and two great grandchildren.”

Ted Andrews (CE62) mentions, “Not much change this year. We are still enjoying retirement. I still golf on Mondays, and Louise and I both bowl twice a week with other seniors. We are still active in our church and enjoy visits from family. The biggest event this past year was our 65th wedding anniversary. We would like to be at the reunion, but we do not travel anymore.”

John Baker (ME64) says, “See you in July 2010 for the reunion!”

Glenn Barber (CE60) shared, “I am spending several days a week on the Pine Ridge Reservation mentoring young Native Americans about the methods of becoming building contractors. Our son, Bill, is still running GBA Construction. Our son, Jim, has a

theater in Branson, Missouri, and our daughter, Nancy, is a high school counselor in California.”

Warren Barnum (CE61) says, “After a terrible 2008 (health wise), I wrote that 2009 just had to be better and so far it has been great. I have to see my oncologist next month, but I do not anticipate any problems.”

Wayne Binfet (EE68) updates, “We had an enjoyable winter thaw trip to Florida in February that included spending time with **Jim Kotas** (EE68) and his wife, Kathy.”

Carol Ann Bloom age 68 of Kingston, Tennessee passed away on October 5, 2009 at the St. Mary’s Residential Hospice. She was a very active member of Grace Lutheran Church in Knoxville. She enjoyed gardening flowers and loved spending time with her numerous friends and participating in church activities and clubs. Preceded in death were son Brian Bloom and her parents, William and Frances Pfothenhauer. Survivors include her husband of 44 years **Everett Bloom** (MetE63); son and daughter-in-law Gary and Aleisa Bloom; grandchildren Ashley and Garrett Bloom; and many special family and friends. Carol was a special first lady to the Alumni Association during Everett’s term as president. She opened their home to visiting alumni and guests, joined Everett at several area events, and returned to South Dakota many times to support the School of Mines. Our sincere condolences and ongoing best wishes go to Everett and family.

Scott Brekenfeld (MetE63) mentions, “I stopped in February to visit **Brad Johnson** (EE92) while in the Black Hills for a funeral. I also visited **Chuck Schmidt** (MetE63) in the St. Louis [Missouri] area in October. We had fun recalling Tech, ROTC, military service in Germany, and growing up in Butte County. Great times! We have 10 grandchildren ranging in age from six months to 17 years.

Alfred Broz (Phys68) shares, “I have no intention of retiring! Work is too much fun and pays well!”

Carl Coad (Math60) sends, “We are doing great. We plan to attend the 2010 reunion in July. It will be our 50th anniversary as well.”

Jim Crouch (MinE68) announces, “I received the Golden Bell award for Wyoming School Board Service—a really special award. I remain very busy at Strathmore with two other alumni, **Tom Ascher** (MinE78) and **Nick Bielstein** (MetE07). We will keep chasing uranium as long as it is fun!”

Les Davis (ME67) advises, “Our son, Larry, got married in Coeur d’Alene, Idaho, in August 2009.”

Cecil Deisch (EE62) sends a report. “My wife keeps asking when I’ll retire. I am still working full time doing circuit design for data design for a communications company and am thoroughly enjoying it. Our products involve switching multi-gigabit data signals, and I frequently do designs for the circuit board power systems as

well as maintain signal integrity at these high bit rates. In the past year, I’ve published several technical articles in trade journals, as well as received a patent for clean signal transmission from radio transmitters. We have seven grandchildren who are quickly growing up but scattered around the country. The youngest is six and the oldest is 19 and in college. We have a nephew who is presently at the School of Mines and another who graduated from the School of Mines a couple of years ago.”

Mike Fischbach (ME64) says, “Retirement is a whole new way of life. I don’t know when I found time to work 50-60 hours per week. Hope to see you all at the reunion! Grandchild number eight arrived on November 28, 2009—our second granddaughter. We have so much to be thankful for.”

Alan Freiberg (ME68) updates, “I am still working every other week for Pursue Energy near Jackson, Mississippi. My son, Trent, and family are still living in Shanghai, China. I recently flew my airplane to Myrtle Beach, South Carolina, to see them when they were back in the U.S. for a few weeks.”

Leland Harms (CE62) shares, “Doris and I enjoy being grandparents to eight. We are continuing our ministry of praying for the sick. We’ve traveled to Europe several times and India twice, where we saw part of a man’s missing foot put back on.”

Richard Howard (ChE61) says, “We are enjoying retirement very

much, except for the last two years—I have worked during the legislative sessions as a ‘policy consultant’ (lobbyist) for the South Dakota Association of Towns and Townships. Our number one priority in retirement is to spoil all of our grandkids equally. This requires a bit of traveling as we have a daughter and two grandsons in Lake Havasu City, Arizona, a son and two grandchildren in Juneau, Alaska, and a daughter and three grandchildren and another granddaughter and great grandson in Rapid City. We also have a son and five grandchildren in Pierre. We look forward to seeing lots of you at the reunion.”

John Larson (ChE67) reports, “DuPont relocated the Research Lab for Coatings Technology from Philadelphia [Pennsylvania] to Wilmington, Delaware. It is good for me because my drive is significantly shorter. I am starting to think about retirement. I learned how to spell that word!”

Bashir Master (ME67) says, “Thanks to education at the School of Mines! I have had more than 40 years of successful career in engineering and have been entrusted by Hamon Corporation in New Jersey to an upper management position as the executive vice president early in 2009. My wife, Barbara, an RN/BSN from University of Wisconsin and an alternative health consultant, and I have raised five children, who have graduated from six different ivy-league universities and now practice law, medicine, education, marketing, and business administration.”

Bob Miesen (CE61) shares, “Looking forward to seeing everyone in July 2010 at the reunion.”

Harlan Miller (GeolE62) communicates, “Betty and I just completed the first segment of the 2010 Grand World Voyage on the *Amsterdam* with Holland America Cruise Lines. It’s a small world when it comes to traveling. I met **Doug Kim** (ME60), who changed his name from Duk Sun Kim, and his wife, Mia, on the voyage, and we had a great time at dinner each evening. Doug is a 1960 School of Mines graduate in mechanical engineering and resides in Alberta, Canada. Our voyage took us from Ft. Lauderdale, Florida, through the Panama Canal, down South America, around Cape Horn, and included a three-day visit to Antarctica. Our trip ended in Buenos Aires, Argentina. Several points of interest included Machu Picchu, Robinson Crusoe Island, and Iguazu Falls. We were in and out of Machu Picchu one week before the floods hit and took out the railroad. The photo included was taken on one of the formal nights aboard the ship.



Doug Kim (ME60) and **Mia** with **Betty** and **Harlan Miller** (GeolE62)

Leonard Neugebauer (CE69) sends, “My office is next to **Paul Bachman’s** (EE74), who started working at DGR in November. We are all School of Mines grads at DGR Sioux Falls office.”

George O’Clock (EE62) shares, “Life has been good. I am currently a consultant for the University of Minnesota Medical School, Department of Pediatrics —Pulmonary Disease/Critical Care. I am working with Warren Warwick, M.D., on high frequency chest compression (HFCC) therapeutic techniques and pulmonary system simulations for chronic obstructive pulmonary disease (COPD) and cystic fibrosis (CF) applications. Our paper on the modeling and simulation results that show the HFCC waveform at various locations in the chest, lung, and mouth regions has been accepted for publication in 2010. The company I cofounded with John Jarding, O.D., out in Rapid City is well on its way to marketing an electrotherapeutic device for the treatment of macular degeneration. It has been a long journey. The Food and Drug Administration (FDA) has been very cooperative and reasonable. However, certain ophthalmologists have been fighting us ‘tooth and nail’ because electrotherapy essentially stops or slows down the progression of macular degeneration at the dry stage; and some ophthalmologists want the disease to progress to the wet stage where they can recommend the more expensive intra-vitriol injections, laser interventions, and surgery. We recently published and presented a MEDLINE-indexed paper on our device design

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philosophy for visual disease application and results of our FDA-guided open label clinical studies involving 400 macular degeneration patients and our FDA-supervised double-blind Phase 1 clinical trial involving 40 dry macular degeneration patients. Approximately 61 percent of a 400 macular degeneration cohort achieved visual acuity improvements of two lines or more on the Snellen chart after a number of months of continuous treatment. Some patients are still holding their own 12 or more years after they were first diagnosed with the disease. I have been engaged in a couple of other research projects and publication efforts. However, research and publications are not at the very top of the list of priorities. A large part of my time is now being concentrated on and devoted to a new romantic interest. At 70 years of age, my motto is: 'first things first.'

Neil Olien (Phys60) announces, "We plan to attend the reunion in July 2010, as well as the 50th graduate reunion for the class of 1960."

Mike Pendo (EE68) shares, "I retired from GDC Dacotah in January 2010."

Milford Peterson (CE61) reports, "I am looking forward to the 2010 reunion. We will be there if we're healthy! Life is good in Texas. We added a granddaughter-in-law this past summer with the marriage of our oldest grandson, bringing our clan to 19!"

Gary Radford (ME60) advises, "We are looking forward to the 2010 reunion!"

Robert Rasmussen (ME65) updates, "I have been retired since 1998 and now live in Wyoming in the summer and Arizona during the winter. I run and play golf to stay fit."

Kendall Sageser (MinE62) mentions, "Jane and I continue to enjoy retirement. Our main activities are travelling back and forth across the U.S. in our RV and helping at the family farm/ranch. I hike up mountains weekly when at home and in winter enjoy skiing with our grandkids."

John Sibert III (Chem62) mentions, "I have been elected to a four-year term to the Malibu [California] City Council."

Tom Snyder (ME62) shares, "For the past six years, I have been employed as a project engineer with Assaf, Simoneaux & Tauzin & Associates, a 22-person mechanical/electrical consulting engineering firm in Baton Rouge, Louisiana. In that period of time, my wife, Diane, and I have gained two more grandchildren for a total of five—two in Spokane, Washington, and three in Baton Rouge. My son, Jon, was recently elected to a four-year term on the Spokane City Council. He and my 10-year old grandson went to Iran for two weeks in May 2009 on a goodwill trip with four other adults and one other youth."

Jon Spargur (ME61) updates, "I am still working on the SEC Program. We have a new granddaughter, Cammie Leighton, born in October. We went to Hawaii for Thanksgiving with family, and, prior to that, we visited Rapid City family in

August 2009. We will most likely be at the 2010 reunion."

Bob Stofft (CE62) updates, "The annual School of Mines Triangle gathering at the Francisco Grande (Arizona) Resort & Golf Club was on February 28, 2010." (See photos in Area Meetings). He also shared that **Paul Besselièvre** (EE64) and Carol graciously hosted and reminisced with Bob and Cherry Frederick at their home in Fresno, California, in September.

Tim Taylor (Chem63) shares, "I finished my second year of my 'retirement gig' as an EMT with Albuquerque [New Mexico] Ambulance, responding to 911 calls here in the city. Now that I have gotten some field experience on a few thousand calls, I am planning to cut back from full-time and do more volunteer work, such as teaching EMT labs or staffing the medical tent at public events."

Ed Texel (ME61) states, "Working part time with the Corp of Engineers. I am enjoying seven grandkids, playing lots of golf, and playing trumpet in several jazz and dance bands. We plan on attending the 2010 reunion and hope to see fellow grads—it's the 50th!"

Ken Trompeter (ME62) reports, "We golfed our way through Hawaii and Arizona with **Jim** (Ex62) and Pam **Damm** this year. See you in 2010!"

Tom Warborg (ChE62) shares, "Looking forward to the 2010 reunion and a February 28, 2010, gathering of Triangle Brothers at Francisco Grande Resort in Casa

Grande, Arizona, being organized by **Ed Olson** (ME61), **Bob Stofft** (CE62), and **Bill Sheldon** (CE61). I hope to see lots of my 1957-63 contemporaries there.” (See photos in Area Meetings).

1970s

Carmen Adams (ChE75) says, “I am retired from 33 years with Exxon Mobil and enjoying it!”

Lavonne Blucher-Nameny (CE74) reports, “We love living in the California wine country! Stop by for a winery picnic!”

Lorin Brass (MetE75) updates, “Our oldest daughter, Katie, is now married as of October 10, 2009.”

Lyle Brink (CE74) shares, “I am still working for Brink Construction. I have been blessed with good health and 11 grandchildren. **Zane** (CE96), who is also a School of Mines graduate, is now my boss.”

Greg Bucknell (CE77) sends, “I retired from the City of Fontana [California] in July 2009. We finished remodeling the garage (my man cave). I do intend to go back to work sometime, somewhere. Meanwhile, my wife is continuing to work until then.”

Ron DeJong (CE70) and **Vic DeJong** (ME64) were delighted to learn that Cameron Rose was accepted into the civil engineering program at School of Mines for the 2010-11 school year. Ron's grandson is looking forward to the experience, as his ultimate goal is combining civil engineering with architectural design. Another grandson,

Stephen, is looking forward to engineering camp again this year and has plans to attend the School of Mines in just a few years.

Vickie Deneui (Math73) updates, “My oldest son, Alex, got married in Spokane, Washington, on August 1, 2009. It was a beautiful wedding. They live in California, where he has his own company, DocVerse. My youngest son, Nathan, is an electrical engineer and works at Hewlett Packard in Houston, Texas. I am retired and enjoying life, living close to Houston also.”

Jeff Dietz (CE72) says, “This has been a good year. First granddaughter was born to our oldest daughter, Jacque. On December 29, 2009, our son, James, and his wife, Jennifer, added twins—a boy and a girl—to our family. We now have three grandsons and two granddaughters.”

Louis Dorland (Phys77) communicates, “We are all doing well and enjoy every day. Our daughter, Cassie, will graduate from CASE Western Reserve University in the spring of 2010.”

The Alumni Association was provided an update stating **Clyde Ericsson** (MetE72) has retired from Caterpillar and started a small consulting firm of 12 people. He plans to be back for the reunion in July.

Melanie (CE79) and **Mark Fiegen** (ChE79) share, “Our oldest daughter, Jane, married Nate Green on February 6, 2010, at Graham Chapel on the campus of Washington University in St.

Louis, Missouri. Both Jane and Nate are pursuing their doctorates in history there. Melanie made the cake, which we transported there, and Karen (our budding fashion designer) designed and made the bridesmaid dresses.”

A press release regarding the Black Hills Area Habitat for Humanity was submitted recognizing **Terry Fuller** (EE70). “In March of 2003, Terry and Barbara Fuller rolled into Rapid City to begin their ‘retirement’ after spending years in Omaha. Having worked on 10 Habitat houses with his church in Nebraska, it wasn’t long before Terry was hammering away on a Black Hills Habitat house. Thirty houses later, Terry still raises a hammer every week at a job site. He started volunteering in Omaha because his church was involved. He soon discovered that he enjoyed the camaraderie of working with families and volunteers as they completed a house. It was fun to build, especially with somebody else paying for the materials. Volunteering at Habitat is also an opportunity to demonstrate his faith. One of the first homes Terry worked on in the Black Hills was a Lutheran build. From that build, a group of volunteers started what is now called the ‘Thursday Crew,’ nicknamed, at the time, the ‘Leftover Lutherans.’ With that crew, other volunteers, and partner families, Terry has built so many homes that he rarely needs to bring out the plans. Elected to the board of directors in January 2004, he served six years. Meanwhile, he served on the construction, site selection, and restore committees.

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Though he is off the board, Terry now serves as the chair of Habitat's Site Selection committee. Terry has played an invaluable role in the growth of Habitat in the Black Hills area. Terry's attention to detail, high construction standards, and his ability to lead are all qualities which make him stand out as both a servant leader and as a friend." Other regulars on the "Thursday Crew" include **John Davies** (ChE71) and **Wayne Greaves** (GeolE71).

Karl Gerdes (ChE71) shares, "I hope to make it for the 2010 reunion. It is hard to imagine that I am approaching 40 years since graduation!"

Joel Grace (MinE73) mentions, "I am still working as a project manager on major projects for the coal companies in the Powder River Basin. I see a number of School of Mines graduates in the basin through my work. Etta Ann and I enjoy traveling to see our three granddaughters in Colorado and Nebraska. I am considering retirement or retirement is considering me. If you are in the Gillette area, give me a call."

Ivy Griffiths (MetE78) updates, "I am trying to retrain into the healthcare information technology and electronic healthcare records (HER) specialties. If any alumni have ideas or suggestions, I would love to hear from you: <ivy.griffiths@gmail.com>."

Harvey Hansen (CE71) updates, "I have recently retired from the City of Ketchikan, Alaska, where I have been director of public works since 1997. My wife,

Annette, and I plan to travel in our fifth-wheel and spend time with our two grandsons. I have been in public service for 38 years. Civil engineering was a good choice, and I have met many wonderful people and worked on many engineering projects, including bridge design, marine engineering, and numerous public works projects. Prior to Ketchikan, I worked for the City of Midland, Texas, for 14 years as the director of public works."

A press release was provided to share the announcement about **Sue Jorgensen** (CE76). "LEO A DALY appoints Susan A. Jorgensen as Vice President (Denver, Colorado - February 11, 2010) International architecture, planning, engineering, interior design, and program management firm LEO A DALY is pleased to announce the appointment of Susan A. Jorgensen as vice president. Jorgensen is the managing principal of the LEO A



Sue Jorgensen (CE76)

DALY Denver office and is responsible for leading healthcare, higher education, science and technology, commercial, and federal projects primarily in the Front Range. A structural engineer registered in seven states, Jorgensen joined the firm's Omaha, Nebraska, office in February 1997 and has managed its Denver office since it opened in August 2007. She is a LEED® Accredited Professional and has worked on five LEED® certified projects in the last five years. She is a member of the American Concrete Institute, the American Institute of Steel Construction, the American Society of Civil Engineers, and the Structural Engineers Associations of Colorado and Nebraska. Jorgensen is also the chair of the licensing committee for the National Council of Structural Engineers Associations." Congratulations Sue!

Southwestern Oregon Community College recently named **Linda Kridelbaugh** (Math70) as the vice president of administrative services. "Kridelbaugh began working at Southwestern in 1991. She has also served as a tenured computer science instructor and the interim business, math, science, and technology division director. Before coming to Southwestern, Kridelbaugh taught at several education institutions in Illinois, including Lincoln Trail College, Eastern Illinois University, and Olney Central College; along with Lower Columbia College in Longview, Washington. She also had a teaching fellowship at the University of Oregon. In the private sector, Kridelbaugh worked as a programmer/analyst for International Paper Company

in Longview, Oregon and for the IBM Corporation in Poughkeepsie, New York, and Thousand Oaks, California, in the systems development division and in the federal systems division. She holds a master's degree in computer science from the University of Oregon and a bachelor's degree from the South Dakota School of Mines and Technology."

John Kwyzla (EE75) advises, "My wife and I are living in Bella Vista, Arkansas, but I work for Cummings Electrical out of Fort Worth, Texas. I am the company's traveling senior project manager for our renewable energy division and have been involved with the construction of four wind turbine projects in the last 12 months ranging in price from \$250,000 to \$12,750,000, with each project lasting between four to six months. I will be headed to the panhandle of Texas for the construction of 2 to 10 megawatt farms right after the first of the year."

Lloyd Marquardt (EE75) shares, "I am back in the power industry managing the substation and distribution group at Commonwealth Associates in Mt. Vernon, Washington. It is fun to be doing this work again."

Paddy Moore (EE71) sends, "I am still working and still enjoying it. I am presently working on a new hospital in Lakewood, Colorado. I am also involved with teaching project engineers about project management."

Jim Munroe (Chem72) says, "I am back working after a short stint at retirement. After taking early

retirement from the chemical engineering faculty in 2005, I worked part time for the SDSM&T Foundation for one year. Then, I did some volunteer work for a year before running into **Mark Hollenbeck** (ChE82), who told me about his new career with Powertech U.S.A, a junior uranium mining company. Since May 2008, I've been back to full-time employment as the senior process design engineer for Powertech. We are in exploration and permitting on two in situ leach projects: The Centennial project in Colorado and the Dewey-Burdock project near Edgemont, South Dakota. My wife, Elizabeth, and I still live in Rapid City, where I often work from my home office. While I miss teaching my classes and helping students learn, I love being part of a focused team in a small company operating in the free-market system."

Les Siewert (MetE76) sends, "I am teaching four to five classes per semester and have 18 students enrolled in the A.S. Information Technology program. You can visit our college website at <www.sittingbull.edu> or stop in and I will give you a tour. We are just an hour south of Mandan, North Dakota or an hour northwest of Mobridge."

Ellen Thompson (Math74) mentions, "After 21 years of flying the friendly skies of United Airlines, I have recently retired as a Boeing 767 captain. I am very much looking forward to being with family and friends and to be home for Thanksgiving and Christmas this year; the first time in many years!"

Joe Vig (CE71) sent a photo and note saying, "Greetings from the Panama Canal. Second from left in photo is yours truly, with a number of our Astec personnel and some customers looking over a future quarry site where some of our equipment will be used—near the Pacific shore and one of



Joe Vig (CE71) pictured second from left at Panama Canal

the canal locks."

Dale Westendorf (ChE71) reports, "I am now retired after more than 38 years at Exxon Mobil."

Daryl Zimmerman (EE79) shares, "Last summer, we transferred from Manila, Philippines, to Ft. Lauderdale, Florida, where I'll be serving as the regional director for security engineering for Western Hemisphere Affairs. After seven years in Asia, it will be nice to be within a few time zones of home. Within the year, we are hoping to be back in Sturgis full time." Daryl was on campus recently to discuss engineering opportunities available with the U.S. Department of State at home and abroad. Daryl spent most of the day in Surbeck visiting with

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students about careers with the Department of State. He also spoke to an electrical engineering class in the morning. Foreign service security engineering officers (SEOs) of the Bureau of Diplomatic Security are responsible throughout the world for the protection of Department of State personnel, facilities, and sensitive information from acts of crime, terrorism, and technical espionage. As professional-level engineers, their mission is accomplished through a wide variety of functions.



Daryl Zimmerman (EE79) with **Larry Simonson** (EE69) at Surbeck

1980s

Jay Cass (CE88) communicates, "My daughter, Stephanie, is in college as a sophomore at the University of Nevada—Las Vegas in architecture. I find this hard to believe, as it really does seem like it was yesterday that I was a sophomore at the School of Mines.

Take care all! Life is short, so make the most of it with family and friends. God Bless!"

Troy Eisenbraun (CE80) updates, "After almost 30 years in Kansas, we have made a move to get closer to the mountains. I took a transfer with my company to our Colorado Springs, Colorado, office. We are enjoying all the outdoor activities and, of course, the weather."

Anthony Evers (ME80) sends, "I am currently working in Jakarta, Indonesia. We have been here a couple of years now and will probably be transferred soon. Hope to make it back for the 2010 reunion."

Tony Farmer (CSc88) reports, "Over the years, I've not submitted much for those little blurbs in the alumni magazine, but I do enjoy reading them, especially all of the new baby stories. But I wanted to throw out a lifeline in the next issue if it's alright. I've been unemployed since July 2009, and there really aren't very many software companies in Las Vegas. So, my search has been limited to short-term contract work outside the area—and there isn't even much of that. Add to this Nevada's double-digit unemployment rate and the distinction of having the worst housing market in the country outside of Michigan, and it's not even possible to sell our house and relocate. It's a sad story to be sure, but nothing uncommon nowadays. What I was hoping is that a word or two in the alumni magazine asking if anyone out there has need for a very good software engineer might result in some work. I'm available and I produce in spades." E-mail: <ethernyet@aol.com>.

Ken Ferris (Geol88) says, "I completed my year of study at the U.S. Army Command and General Staff College in Leavenworth, Kansas. I graduated distinguished graduate (outstanding interagency civilian) and completed my master's degree of military art and science. I was asked to remain as an instructor at the school, and I am now an instructor on loan to the school from my agency for the next two years. We love eastern Kansas!"

Joni Kachelhoffer (CE81) sends, "Still working for the Wyoming Department of Transportation. I see **Doug Ramsey** (CE75), who is project manager for Basin Electric's Dry Fork Power Plant, north of Gillette. **Chris Escandon** (CE04) works with me in Newcastle. He recently passed his P.E. I also see **Ron Williams** (CE92) and **Warren Oyler** (CE83) regularly at WYDOT meetings. Our son Jay is a staff sergeant for the U.S. Marine Corp. He is stationed in Camp Lejeune, North Carolina. He is married and has a two year old daughter. Our son Kyle is attending North Dakota State University, majoring in English. Our daughter Charla will graduate from South Dakota State University in May with a B.S. in sociology."

Sandi McColl (Math88) shares, "Our youngest of three was born August 1, 2009—Charles Joseph (CJ) McColl. I am now in my third year of teaching math and physics at Hot Springs High School. Last May, the Hot Springs Math Team took first place in the small school portion of the School of Mines Math Contest."



*The McColl kids welcome
little brother CJ*

Steve Morgenstern (ME83) announces, "Today is a day our family will cherish forever! The doctor gave us the CT and MRI imaging reports from last Wednesday and summarized it in two words: COMPLETE REMISSION! WOW!!! God has indeed answered everyone's prayers! Now I am entering a 'maintenance period' because things could still be happening on a molecular level. Therefore, some type of treatment will continue to minimize any reoccurrence. At our doctor's request, we will visit an oncologist at the Swedish Cancer Institute next week for another opinion on the best course of action. The most likely course of action will be what I describe as 'chemo-light'. Out of the three chemo drugs that I was given these last four sessions, the one with the big 'punch' and nasty side effects called Cisplatin can certainly be eliminated. YEAH! The remaining two are much gentler, with minimal side effects. So 'chemo-light' could include these two drugs or either one. Whatever choice is made, the worst is behind us. The other half of the

equation is working with a naturopathic doctor on the dietary solutions. Very important stuff! That's it in a nut shell and we will be sure and keep you posted. Thank you again to all my BEST OF FRIENDS for their thoughts and especially prayers!"

Vicki Mueller (GeolE80) updates, "We moved to Brisbane, Australia, in January so my husband could work with a company involved in coal-seam gas production. This is a great location—we welcome visitors. We'll be at the 2010 reunion. Hope to see lots of folks there.

A Davie Yards, Inc. press release for **Gustav Nydal** (ME86) announced that Mr. Nydal will be joining the corporation as president and CEO. "Mr. Nydal, who has extensive experience in the marine industry, is taking over for Mr. Steinar Kulen, who will become Chairman of the Board of Davie. Both appointments are effective as of February 15, 2010. The corporation has five ships under construction and around 1,800 employees at the yard. Mr. Kulen and Mr. Nydal have long worked together in shipbuilding and will work closely to ensure a smooth transition in the corporation's everyday operations. Nydal, a 49-year-old Norwegian citizen, will be moving to Quebec, along with his family. The newly appointed president and CEO comes to Davie from the position of Director, International Hullbuilding at Kleven Maritime. He started his maritime career as head of a marine engineering firm. He also held several managerial positions in a silicon metal processing company before being appointed managing director for a

Kleven Maritime shipyard building highly specialized tankers. Mr. Nydal transferred to Akers Yards when the shipyard was sold in 2006 and subsequently returned to Kleven. Mr. Nydal holds a bachelor's in mechanical engineering from the South Dakota School of Mines and Technology, USA, and a master's in mechanical engineering from the Norwegian Institute of Technology in Trondheim, Norway."

Joe Odegaard (GeolE84) mentions, "My family and I have lived in Rapid City for 14 years, and I continue to work on environmental restoration at Ellsworth Air Force Base; now for URS Corporation under a four-base performance-based contract. Our oldest daughter married in May and lives in Birmingham, Alabama."

Gene Rye (EE84) reports, "Due to the Army's decision to do without any sort of modernized artillery, the contract to develop said artillery in Minneapolis was terminated. That of course meant my job was terminated along with it. I did find new employment with a different branch of BAE Systems. The new job had as a major downside a forced move to the east coast, and I now live in Fredericksburg, Virginia. Given that move, it is quite unlikely I will make it back for the reunion this summer. However, by 2015 I do hope to have pulled the retirement handle and will make it then (I hope). I did keep the house in Minnesota as I do plan on returning some day, just no real firm date on that yet. I work out of an office on D Street in Washington D.C., within sight of

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the Smithsonian Institution and other very familiar D.C. landmarks. The job is systems engineering support work for the FAA as they work to improve and modernize the air traffic control system.”

A news release was received notating a key promotion for **Jacqueline A. Sargent** (EE89). “Black Hills Corp. announces the promotion of Jackie Sargent to the position of vice president of power supply and renewable integration effective immediately. Sargent’s leadership role will provide a centralized responsibility for coordinating the overall planning efforts needed to support our continuing ability to cost-effectively serve customers. Sargent’s role includes leading the generation dispatch and power marketing team and the added operational responsibility for the company’s renewable energy, energy-efficiency, and demand-side management programs. Sargent brings more than 21 years of utility operations experience to her new role, including experience in customer service, engineering and operations, wholesale generation, power marketing, rates and regulatory, and project management and start-up coordination for several power plants. Sargent is a registered professional engineer in South Dakota and a graduate of the South Dakota School of Mines and Technology with a bachelor of science degree in electrical engineering and a master’s degree in technology management.”

Lisa (Kainz) Schaertl (EE84) sent this update: “It was big year for us. Our oldest son graduated from the U.S. Naval Academy and continued on to the Navy’s nuclear

power school; the next two left the nest (one to SUNY Plattsburgh for environmental engineering and one to Rochester Institute of Technology for computer engineering); we celebrated our 25th wedding anniversary; and after all that, I completely forgot to celebrate my 7th year in business. We still have the youngest boy at home and life is good.”

Doug Stalheim (MetE80) updates, “Lorene and I are proud grandparents. Our grandson, Parker Aaron Stalheim, joined our family in March 2009. This starts a new chapter in our life. I also got to see **Tim Ogdie** (ChemE80) in May 2009 in St. Louis, Missouri. It was great to see Tim.”

Karen Stoner-Wagner (GeolE81) communicates, “I am currently working as a geo-tech for Vantage Energy in Englewood, Colorado, after being out of the business for 15 years. Our daughter, Ellen, is a junior in chemical/biological engineering at the University of Colorado in Boulder. Our son, Paul, is in tenth grade at Douglas County High School.”

Rich Workentine (ChE88) says, “Writing a brief update when I wait so long to write is going to be challenging. I am approaching the end of my career in the Army Reserves and National Guard after 28 years and a one-year all-expense-paid visit to Iraq from 2003-04. After returning from Iraq, I spent two years as the first sergeant of a ‘combat-heavy’ engineer company and since then have tried to find positions of decreasing responsibility to give me more time to spend with my family. As much as I would enjoy

seeing the terrain of Afghanistan, I won’t be upset if I retire without getting called away from my family again! Also, after returning from Iraq, I made the move to a smaller environmental consulting firm in Pueblo, Colorado. The small size means more opportunities to get out on project sites and do the hands-on work that I really enjoy. My boss and I also entered into a partnership and purchased a small office building for All-Phase Environmental as a tenant. The latest expansions of my technical portfolio are certifications in radon measurement and radon mitigation. My family is doing well. Jami recently changed jobs and is now a table games dealer and supervisor at a casino in Cripple Creek, Colorado. Jacob is charming his teachers and doing great in third grade. He has also become a pretty good soccer player and has adopted our family’s fanaticism for the Colorado Rockies and the Denver Broncos. We look forward to our holiday visits to Sturgis and try to swing by the campus whenever we’re in town. If you’re in Colorado and want to say ‘hi’, we are the only Workentine listing in the entire state (much less Colorado Springs).”

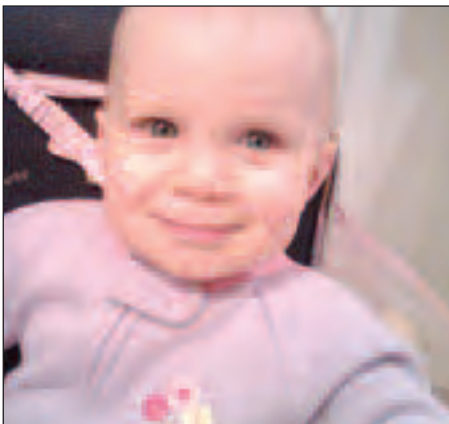
1990s

Julie (Terrill) Beilby (ME90) and **Matt Beilby** (IE93) welcomed a new baby girl, Katherine Diana Beilby, in November 2009. She weighed 5 pounds, 4 ounces and was 18 inches long. Best wishes to the family.

Tim Dean (M.S. TM96) “was recently named site planning and engineering division manager at

Draper Aden Associates. The married father of two, with a third on the way, earned a math degree at St. Olaf College in Minnesota and a master's in technology management from South Dakota School of Mines and Technology. Dean earned a degree in civil engineering technology from Old Dominion University (ODU) and fulfilled his goal of becoming an engineer. He worked as a construction manager for Sprint PCS for three years, overseeing projects in Minnesota and in Richmond and Norfolk, Virginia. Dean joined Draper in 1999 as a project manager and site designer for wireless telecommunications facilities. While there, he was able to attend ODU. While at Draper, he has worked on public and private site development projects, including the University of Richmond's Gottwald Science Center, Eastern Virginia Medical School's medical-research building, and the James City County police headquarters." (from Richmond Times Dispatch)

Clara Olivia Hintgen was born March 31, 2009, to Libby and **Greg Hintgen** (EE99). Greg still works for Johnson



Clara Olivia Hintgen

Controls in Sioux Falls. "Libby and I are both looking forward to seeing everybody at the reunion this summer! Cheers!"

Commander **Anthony G. Kathol** (CE91) of Yankton was recently presented the Indian Health Service (IHS) National Director's Award by IHS Director Yvette Roubideaux, M.D., M.P.H., at the Smithsonian National Museum of the American Indian in Washington, D.C. The director's award recognizes individuals or groups of employees whose special efforts and contributions beyond regular duty requirements have resulted in significant benefits to the programs or customers of the Indian Health Service and fulfillment of the IHS mission. Stationed on the Pine Ridge Indian Reservation, Commander Kathol received national recognition for his exemplary service and dedication in the improvement of adequate water supplies for the community of Batesland, South Dakota. Commander Kathol was responsible for securing emergency funding by identifying the water system deficiencies of the community, for providing the engineering design, and for performing the contract administration responsibilities. The success of the project allowed the community to adequately maintain the water storage capacity by making urgent repairs to the town's 100,000-gallon elevated water storage reservoir. Commander Kathol is a 1987 graduate of Yankton High School. He obtained his bachelor's degree in civil engineering from the South Dakota School of Mines and



Anthony G. Kathol (CE91) receiving National Director's award from IHS Director Yvette Roubideaux

Technology in 1991, a master's degree in civil engineering from the University of New Mexico in 1995, and obtained his professional registration from the State of Washington in 1997.

Paul Larson (ME93) sends this update. "Amy and I continue to enjoy our six children. God provides love, financials, and many enjoyments. I am working at Metropolitan Industries, which continues to provide an enjoyable challenge with many new technologies and innovations. Pathway Christian Fellowship Church provides help in staying on the narrow path that few travel in following God's plan."

Manny Penaloza (MetE95) shares, "We celebrated the birth of Sophia on March 31, 2009. We are

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looking forward to the next alumni reunion in Wichita, Kansas.”



Sophia Penaloza

2000s

Jenny Baker (ChE07) and **Wade Johnson** (EE07) were married on September 5, 2009, in Broomfield, Colorado.



*Wade Johnson (EE07)
and Jenny Baker (ChE07)*

News release from Nucor Steele: “**Karl Barfuss** (IE08) has accepted the position of safety coordinator at Nucor Steel – Nebraska. Karl graduated in 2008 from the South Dakota School of Mines and Technology with a bachelor’s of science degree in industrial engineering and a minor in occupational safety. Karl started working for Nucor-Nebraska in May 2008 as a safety engineer. Prior to that, Karl had served as an intern in 2007. He will be responsible for overseeing the implementation of our safety programs and taking the lead on our efforts to become ANSI Z-10 and OHSAS 18001 certified in 2010.”

Karen Brady (CE01) tells, “Our daughter, Karsyn, was born in February 2009.”

Angela Bucholz (IS02) sends, “Aaron and I welcomed our second child, Abram, on January 21, 2009. Aaron continues to work for Daktronics, affording me the amazing opportunity to stay home with our beautiful boys. Asher turned three and Abe is almost one. Time flies when you’re having fun.”

Andrew Farke (Geol03) shares, “I continue in my job as a paleontologist at the Raymond M. Alf Museum of Paleontology. I am frequently in the field in Utah and California and look forward to the fieldwork in Madagascar and China this summer.”

Eric Nelson (MetE00) updates, “My wife, Christie, and I are on an 18-month bike trip. Our tandem is taking us from Minnesota to the tip of South America. Check in at <www.ericandchristie.blogspot.com>.”

Steve (CSc02) and **Sarah Radabaugh** (IS02) proudly announce the arrival of Ivy Anna Radabaugh, born October 8, 2009, at 6:47 p.m.; weighing in at 9 pounds, 15 ounces and measuring 21 inches long.



Ivy Anna Radabaugh



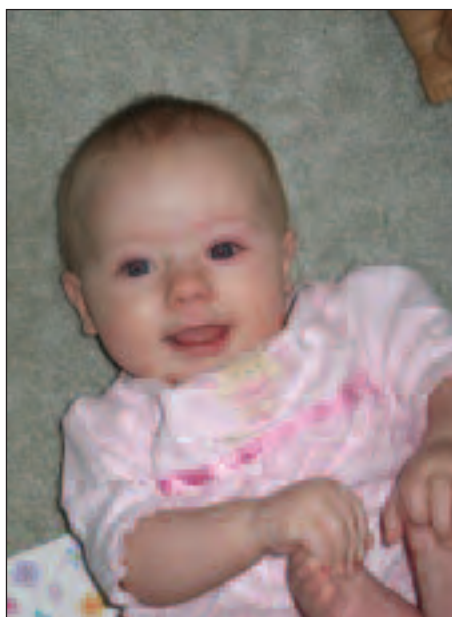
Evie Schmidt

Sara Reausaw (Chem03) mentions, "I have been back in the Black Hills area practicing since January 2009 after a few years of practicing in Arizona. My office is called All About Smiles Family Dental, located at 2805 5th Street, Suite 200 in Rapid City. It is good to be home!"

Loren Schmidt (CEng05) shares, "Our daughter, Evelyn Elizabeth Schmidt, was born on September 4, 2009."

Sarah Speck (GeolE02) and **John Weeldreyer** (GeoE00) announce, "We welcomed the birth of our adorable twin girls, Anne-Renee Ruby and Violet Elizabeth, born on October 17, 2009. Anne-Renee weighed 5 pounds, 8 ounces, and Violet weighed 5 pounds, 5 ounces."

Mike Waldron (CSc05) reports, "We welcomed our Amelie Elizabeth, our third (and final) child, on May 15, 2009."



Amy Waldron at six months



Wheeldreyer twins

Kristen Yates (GeolE05) shares, "We celebrated our one-year anniversary on October 18, 2009. We have also made Rapid City our permanent home with the purchase of a local business - Chimney Canyon 4x4. After 1.5 years in business, we are still 'afloat' despite the tough economy. It certainly keeps us busy, and every day is a new adventure."

Planning for the 5-year Reunion

Reunion planning for July 7-11, 2010 is underway and we look forward to seeing thousands of alumni and friends on campus this summer.

The 2010 Reunion co-chairs **Gary Callahan** (ME70) and **Monte Dirks** (MetE78) are leading the effort to make this a memorable and fun reunion. The event also coincides with our alma mater's 125th Anniversary (1885-2010) and will see several new and renovated buildings on campus.

INVENT TOMORROW



For general information, please contact us at the Alumni Office.

SDSM&T Alumni Association
501 E. St. Joseph Street
Rapid City, SD 57701-3995
(605) 394-2347 (phone)
(605) 394-2383 (fax)
<alumni@sdsmt.edu> (e-mail)
<<http://alumni.sdsmt.edu>> (web)
Reunion registration
<<http://alumni.sdsmt.edu/reunion>>



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WILLIAM JOHN ARBEGAST, JR

William Arbegast, Jr. (Hon09), 58, Rapid City, died Saturday, November 28, 2009, at Rapid City Regional Hospital. He was born in Davenport, Iowa, and received a B.A. in metallurgical engineering from the Colorado School of Mines in Golden, Colorado. He dedicated more than 30 years of his life to his passion for science and education. His accomplishments include initiating the development of friction stir processing technology, and he had been instrumental in research and development for aerospace technologies for Lockheed Martin Space Systems. His greatest passion was sharing his knowledge and love for science with his students whom he cared for deeply. Bill was director of the Advanced Materials Processing and Joining Laboratory (AMP), director of the I/UCRC Center for Friction Stir Processing, and director of the Repair, Refurbish and Return to Service Applied Research Center at South Dakota School of Mines and Technology. Surviving him are his daughter, Leanne Stover, her husband, Ryan, and grandson, Mason Stover; daughter, Kati Patterson and her husband, Chris; his former wife and friend, Christine Arbegast; two sisters and a brother; and close friend, Mary Basoco. The family would like to thank the staff at Rapid City Regional Hospital for their care and support. In honor of Bill, the William J. Arbegast Memorial Scholarship fund has been established at the SDSM&T Foundation.

JOHN ORLO BABCOCK

John Bancock (CE43) was born in Aberdeen and grew up near Mellette. He attended Bretford

Consolidated Schools for 11 years, graduating from Onaka High School. He graduated from the School of Mines with a degree in civil engineering in 1943 and was employed at Curtiss-Wright Airplane Company in the drafting, engineering, and hydraulics department in Columbus, Ohio, during World War II. John married Harriet Mary Cossum, and the couple moved to Watertown, where he was employed by Scott Engineering. Later, he became the city engineer in Watertown and held that position for 34 years, retiring in 1983. While with the city and during retirement, he owned and operated Babcock Surveying Service. Harriet passed away in 2003. Due to Alzheimer's, John spent his last years at Reflection Memory Care Center. He was a member of Kiwanis Club and was a board member at Memorial Hospital. He was an active member in the First Baptist Church, participating in various capacities such as Sunday school superintendent, Sunday school teacher, choir member, deacon, and trustee. He enjoyed hunting, fishing, gardening, traveling, and especially spending time with his family and friends. John is survived by his four daughters, Betty, Janet, Sandy, and Bev; one son, Bob; and their families, including 19 grandchildren and 16 great-grandchildren.

HAROLD RODNEY BAUER

Harold Bauer (EE61) passed away on October 10, 2008, of lymphoma. His wife, Cherry, informed the Alumni Association office. He retired in 1992 from GTE, where he worked since the late 1960s. They have four children, five step-children, nine grandchildren, and one great-grandchild.

CHARLES WEBB BECKEN

Charles Becken (Geol75) died in December 2007, as advised by his daughter, Leslie Warren.

GUY VERNAY BENNETT

Guy Bennett (MetE50) has passed away. The Alumni Association recently received notice. In June 1984, he retired from Northrop Corp.

DEAN CLIFTON BENSON

Dean Benson (former faculty member) passed away in his sleep on March 18, 2010, at the Canyon Lake Rehabilitation Center in Kennewick, Washington. The beloved husband, father, and grandfather will be greatly missed by all, and also by his many friends, who always expected to be delighted by his storytelling, songs, and jokes. Born in Hazelton, North Dakota, in 1918, he grew up on farms throughout South Dakota, and later excelled in discus and track in high school and at Sioux Falls College, from which he graduated. During World War II, he served in the U.S. Army Air Corps and NACA (later NASA) as a photographer. After the war, he earned his M.A. and Ph.D. in mathematics at Iowa State University and was a professor at several colleges, ending with 23 years at the School of Mines (16 years as department head). He served on the Mathematics Association of America Board of Governors and remained an honorary member. He was a life member of the National Rifle Association. His favorite hobbies were camping, hunting, fishing, and rock hounding. He won awards for his black-and-white photography, which he developed in his own darkroom. For 66 years, he made his own unique photographic Christmas cards. Dean and his wife spent six



months each year in Yuma, Arizona, for 18 years. In 2004, he traveled to Norway with his daughter, where he visited two of his known ancestral farms and met Norwegian relatives. He is survived by his wife, Ruth A. Benson; son, Richard; daughter, Kathy; their families, including two granddaughters and a great-granddaughter; and a brother and his family.

BRIAN AHRENS BERNHARD

Brian Bernhard (CE70) was born in Parkston, where he grew up with his brother and best friend for life, Bill. He received his civil engineering degree from the School of Mines and then married Marlys, his high school sweetheart, in 1968. He joined the U.S. Army Corps of Engineers and served with pride for two years before moving to Mitchell, where he started his engineering career with Schmucker, Paul, & Nohr. In 1976, Brian and Marlys moved to Yankton, where he co-founded B & E Engineering. They lived there for 21 years and raised their four great kids. In 1999, they moved to Sioux Falls, where Brian enjoyed work at Golden Rule Construction, Scheel's All Sports, and ultimately found his life's true calling as an adjunct professor at Colorado Technical University and Southeast Technical Institute. Brian was a teacher and mentor to us all and a lifelong student. At all times, he gave the very best of himself to everyone and he loved life. Passionate and compassionate, he was uniquely gifted at finding joy in every situation. Brian cherished his family, especially his wife. She was unquestionably the love of his life. Ask him about his children, and his eyes just sparkled; they were his pride and joy. He told them that frequently, which was an

incredible gift to them. His latest love was for Ady, his baby granddaughter. Brian was also a kid at heart. He was constantly looking for the next adventure, and he always dreamed so big. For Brian, the possibilities were endless. He loved the outdoors, and whether riding his motorcycle, flying a plane, camping, kayaking, hunting, or hiking, life was always more about the journey than the destination. Brian died unexpectedly on August 8, 2009, in Fort Pierre of an apparent heart attack. He was having the time of his life—happy until the very last second, dancing the polka at a family wedding. We know he's still dancing right now. Brian is survived by his wife of 41 years, Marlys; two sons, Travis and Dan; and two daughters, Angie and Marisa, and their families. On his new adventure, Brian is hugging his daughter, Valerie.

ROBERT DEAN BESHARA

Bob Beshara (IS97) of Rapid City, born March 20, 1959, died May 21, 2009. He fought Amyotrophic Lateral Sclerosis (ALS) for the last two years, and in the end, the disease won. ALS took a body that could run a marathon, bike the hills, swim the ocean, and never sit still. Bob loved a lot of things in life. He loved working at the Colonial House with his parents and brother. He loved cracking jokes and showing everyone why he was always in the center of a crowded room. He loved comic books and action heroes. Even in his last days, he was stronger than most. Most of all, he loved his family. Bob married his true love, Pam Saxer, in 1980. Together with his bride, Bob traveled the world, leaving an impression and making friends everywhere along the way. After they married, they took a

road trip honeymoon to Reno, Nevada. It was there the restaurant bug bit him. He worked for his grandfather's restaurant in Reno and later jumped at the opportunity to move back to Rapid City and work with his parents at their newly acquired restaurant and begin his family. With Pam's love and support, Bob opened a comic book store, Pandora's Books, out of his basement, moved it into the garage and finally found a home for it in downtown Rapid City. The store gave him the opportunity to nerd out and introduced him to amazing people who shared his love of DC and Marvel comics. When he was done with the comic book store, he decided to go back to school and earned a degree at the School of Mines in 1997. While at school, he could have been the busiest non-traditional student on campus. He took leads in school plays, worked at and directed KTEQ radio station, and most importantly, he made friends. Bob loved working, and after college, he decided to go back to the Colonial House. For Bob, working at the Colonial House was not just a job, it was an opportunity. Being at the restaurant gave him the opportunity to truly do what he loved—being around people and making them laugh. He loved working with his parents and his brother, Kevin. Seeing them every day (because when you own a restaurant you do not take days off) was a great blessing. Bob was very blessed to work with his brother and best friend daily. But, if you got caught in the cross-fire of their jokes, you were on your own. Being with family was Bob's greatest joy. He and Pam have two daughters, Nicole and Stephany Beshara. Bob was always so content to be in a house full of girls. He was an expert dad, from

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braiding hair, coaching soccer, and mediating fights over belts. His girls always had their father at their side. Bob was always on the cutting edge of music, movies, and technology. By having so many hobbies and interests, he was forever young. These interests gave him the knowledge and ability to talk to anyone, even if they were not a Mac user. No matter if you met him on his travels, at the comic book store, at the restaurant, cruising in his boat, or just being in the community, he loved saying 'hello.' He never forgot a face, even if it took him a couple of tries to remember your name. He touched many lives. Being a Beshara means having lots of cousins, aunts, uncles, and being one big happy extended family. Once Bob married into Pam's equally large and loving family, he more than doubled the relatives who adored and cared for him. Those who preceded him in death welcome him home with open arms and are ready for him to get them laughing. He is survived by many, including his wife and beautiful daughters, his loving parents, Bill and Sandy, and many others who wish to say "never Give Up - thank you for holding on and being with us for your 29th wedding anniversary. Thank you for being there to walk your daughter down the aisle on her wedding day. You did not give up, and we will never give up."

SUSAN KATHERINE BIEGLER

Sue Biegler (ChE77) of Aberdeen succumbed to Amyotrophic Lateral Sclerosis (Lou Gehrig's disease) on September 23, 2008. She has left a huge hole in the life of her husband, Paul Madison, who was also her best friend and soul mate for 31 years, including more than 26 years of marriage. She also left behind untold

numbers of family members, all of whom were very special to Sue. Growing up, Sue was both a tomboy and a model student at Aberdeen Central and while attending the School of Mines, where she received a B.S. in chemical engineering. After college, she went to work for Conoco in Houston, Texas, where she met her best friend, Paul. Broken into two segments, she worked at Conoco for just under 15 years, with most of the time spent doing her favorite work of economic and strategic planning. Sue was truly a well-rounded and gifted person, as she was not only good at engineering and economic planning, but she was as or more talented at arts and crafts. She studied art for a short period at Northern Oklahoma College in Tonkawa and then took a full art program at University of Warwick in Warwick, England. She dabbled in sketching, drawing, oil painting, pottery, jewelry making, acrylics, charcoals, print making, and more, but fell in love with and spent her most artistic energies on her incredible water colors. After she left the 9-to-5 world, she pursued her love of economic planning by studying and investing in individual company stocks. She joined an investment club in Katy, Texas, that was part of NAIC or as it is known now, BetterInvesting. After moving to the Tulsa area, she and Paul became very active in the Greater Tulsa Area Chapter (GTAC) of BetterInvesting and the related model investment club TicToc. Maybe the most important thing of all was that Sue was a communicator. She would send out letters, newsletters, e-mails, and wonderful homemade cards so vivid in picture and prose that complete strangers became best friends for life even though sometimes they have never even met. She touched so many lives in

so many ways and will be sorely missed by all those that were touched by her infectious love of life.

ANTONE STEPHEN BULAT

On January 1, 2010, **Antone (Tony) Bulat** (ChE68), Lt. Col. U.S. Air Force Retired, boarded a single-seat, single-engine celestial aircraft bound for home. He taxied the runway, took off, and tipped his wing to say goodbye. This was his last "champagne flight," and his scheduled appearance at a family reunion was greatly anticipated. Tony Bulat was born in Deadwood in the middle of a raging South Dakota blizzard in 1944. He grew up in Lead and graduated from Lead High School in 1962. He later graduated from the School of Mines and entered the United States Air Force. He entered pilot training in Laredo, Texas, and began his flying career in the T-38. He was later assigned to Luke Air Force Base (AFB), Arizona, and completed training in the F-100 Super Sabre. Following a tour in Vietnam at Tue Hoa AFB, he was assigned to England AFB in Alexandria, Louisiana. He eventually transitioned into the A-7 and was later stationed at Nellis and Davis-Monthan AFBs. One of his last assignments was in the 4450th squadron at Nellis, where he was involved in the Stealth Fighter program, which was then top-secret. He was always proud of his 20-year military career, in which he was able to fly single-seat, single-engine jet aircraft and get paid to do it. He retired in January 1988 with the rank of lieutenant colonel. He was a holder of the Distinguished Flying Cross, Meritorious Service Medal with one oak leaf cluster, Air Medal with eight oak leaf clusters, and several other medals too numerous to mention. He



returned home to his beloved Black Hills to enjoy retirement. Tony is survived by his loving wife, Julie; sons Chris and Wess; and families, including grandsons Braeden and Brody. The loss of his immense presence is devastating to his family and friends.

WESLEY HARLAN BURR

Wesley Burr (Phys48), 86, went home to be with his Savior on October 5, 2009, in Aiken, South Carolina. Wesley was born in Custer and was a graduate of the School of Mines. He married his wife, Hazel, in Rapid City in 1944. He was a veteran of World War II and was a member of the Veterans of Foreign Wars. He spent his profession career as a metallurgical engineer for U.S. Steel Corp., both in White Oak, Pennsylvania (where he also served as a city councilman, school board member, and taught night classes at Carnegie-Mellon University on steelmaking), and in Davenport, Iowa. After his retirement, he and his wife moved back to Rapid City, where he served for a time as an adjunct professor at the School of Mines teaching steelmaking. Left to cherish his memory are daughter Linnea and son Michael and their families, including four grandchildren. He was preceded in death by beloved wife Hazel of 64 years, only months before.

L. F. "SKIP" BUSH

South Dakota native and School of Mines alumnus, **Skip Bush** (CE59), 74, passed away peacefully in Puyallup, Washington, on March 11, 2010. Skip was the youngest of 10 children and was born in St. Lawrence in 1935. He attended school in St. Lawrence and Highmore, graduating in 1953. He married Beverly Jean Lusk in 1955. After completing U.S. military service, he attended the

School of Mines, graduating with a B.S. in civil engineering in 1959. Moving his young family to Seattle later that year, he completed his master's degree from the University of Washington in 1960. He was a registered land surveyor and a licensed professional engineer in several states. Skip's early career in Olympia, Washington, included working for the Washington State Department of Highways, Arvid Grant Associates, and Horace Whitacre Associates. He established the civil engineering technology program at Centralia College, where he taught all of the affiliated courses. In 1967, he joined Chalker Engineers in Tacoma, Washington, and soon had ownership in the firm. He worked there for nearly 25 years and was considered to be the heart and soul of the firm's engineering. Notable engineering projects in western Washington include the Tacoma Dome; Seattle's Waterfront Center; and Foss, South Kitsap, and Auburn High Schools among many other structures in the area. He was fellow and past president of the Tacoma Section of the American Society of Civil Engineers (ASCE), served as past chapter and state president, as well as receiving the Life Achievement Award from the Structural Engineers Association of Washington (SEAW). He was a registered agent representing the Western States Council of Structural Engineers Associations and was active in the Urban Search and Rescue Task Force as a structural specialist. In all areas of his life, Skip was driven with a strong work ethic and was respected for rolling up his sleeves and working. He gave his leadership skills, time, energy, passion, and resources, accomplishing valuable charitable work throughout South Puget

Sound. Skip was a member and past president of Parkland/Spanaway Rotary Club, Parkland, Washington. With perfect attendance for 23 years, he was strongly involved in Rotary activities and in the leadership and administration of several large charitable projects. He was instrumental in establishing the charter for the South Pierce County Boys and Girls Club, Parkland/Spanaway, Washington. He was an avid home gardener and well-known for including friends and family in his recreational forays throughout the Pacific Northwest: ocean fishing, clam digging, oyster picking, mushroom and berry picking, and camping. He travelled extensively in the western U.S. and beyond. He was deeply devoted to attending family and college reunions in South Dakota, maintaining numerous life-long relations. Many stories tell of his uncanny knack for chance meetings with total strangers everywhere, frequently revealing common friendships and relations bridging both time and distance. He is survived by his wife of 7 years, Helen Randles Bush, of South Hill; two daughters, Lynn and Laurie; one grandson; numerous nieces and nephews; and a large extended family too numerous to count. His first wife of 44 years, Beverly, one daughter, and other immediate family members preceded him in death.

WANDA CLEMMONS

Wanda Clemmons, 72, of Rapid City passed away on February 17, 2010, at her home. Wanda was born in Denver, Colorado. She worked at the School of Mines for 11 years, retiring in 1998. She was the last person to serve as a housemother at the School of Mines. From 1987-98, she was the housemother in Palmerton Hall. She oversaw the change in

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Palmerton Hall from an all-male residence hall to a coeducational facility. Affectionately known to resident students as “Ma” Clemmons, she provided a homelike atmosphere and an empathetic ear to more than 2,000 students during her tenure, helping them to cope with the stress of college life and living away from home. She loved her children, grandchildren, and great grandchildren. Her door was always open, and she enjoyed reading, gardening, and long walks. She is survived by three sons, Hewey, Shawn, and Ty; two daughters, Melody and Paula; their families and many other family and friends, including 10 grandchildren and four great grandchildren. She was preceded in death by her daughter, Laura, granddaughter, Jesse Lea, and sister Katherine.

WILLIAM RAYMOND DOBRATZ

William “Bill” Dobratz (CE52), beloved husband, father of three, and grandfather of five passed away suddenly on June 20, 2009, due to complications from cancer. Born in Redfield in 1928, Bill excelled in athletics in high school and graduated in 1946. He then joined the army and served overseas for two years before attending the School of Mines, where he graduated in 1952 with a bachelor’s degree in civil engineering. After graduating, he took an engineering job in Colorado, where he met and charmed Jeanette Wiltse, marrying her in 1959. The next year, they moved to Rhode Island, where they were blessed with their first two children. They then moved back to Colorado and were surprised by the arrival of their third child. In 1970, Bill and his family moved to Spokane, Washington, where he soon took the position of director of utilities

for Spokane County. He retired in 1994 to enjoy teasing his family, listening to his favorite music, and golfing with his friends. Bill was admired and respected both personally and professionally by all who knew him. Bill is survived by his wife of 50 years, Jeanette; his daughters, Tracy and Tara; his son, Mark; and many other dear and loving family members and friends.

RICHARD FRANK DONNELLY

Richard Donnelly (EE59) made the transition from this life to the next after what he called an “amazing journey” with melanoma. Although he was unable to attend his 50th graduation reunion in May 2009 due to chemotherapy treatments at the time, it was expressed that he was deeply disappointed as he had been looking forward to seeing his roomies and renewing friendships. Dick was born in Sioux Falls. He graduated from Washington High School and the School of Mines and received his M.S. and Ph.D. degrees in electrical engineering from the University of Illinois. In 1966, he married Elizabeth Ann Lindahl. They became the parents of Richard Scott and Lora Elizabeth. When Lora was three weeks old, the family moved to Hawaii, where Dick was in the visiting faculty at the University of Hawaii. After that, they moved to Colorado, where Dick did research in ionospheric and solar-terrestrial physics at Boulder Labs for 30 years. He liked to say they paid him for doing his hobby. Dick enjoyed being in the mountains. With the help of his friends, he built a cabin west of Boulder. Dick walked in the woods, led hikes to the creek, received inspiration from the view at the top of the rock pile, and relaxed on the deck with family and friends. Dick is

survived by his wife, Elizabeth Ann Donnelly, of Boulder, Colorado; son, Richard, and daughter, Lora, and many other family members who will miss him. He stated “I’m ready for a new adventure.”

PAUL ANDERSON DRICKEY

Paul Drickey (Geol41) passed away peacefully on December 4, 2009, surrounded by his children and grandchildren, with his wife at his side. He was born in 1917 and grew up in Rapid City, attending school there through high school and college. He graduated with highest honors from the School of Mines in 1941. In July 1941, he married Dorothy Speed, to whom he remained married until her death on September 15, 1969. His wife suffered a rare and fatal disease, and she was survived by her husband and children—Carol, Thomas, and Luanne—to carry on alone. He worked for Carter Oil Company until World War II, when he enlisted in the U.S. Army Air Corp, later named the U.S. Air Force. His training included specializing in meteorology at the University of Chicago. After brief assignments in the U.S., he was assigned to foreign duty in Karachi, India. After many months in India, he was assigned individually to the 315th Troop Carrier and moved close to the Burmese border. He operated as a one-man weather unit and an intelligence officer. Paul was promoted to captain and was awarded the Air Medal and the Bronze Star. After two years in India, Paul received orders to return to the U.S. for a 60-day leave. During that time, he was notified that the war was ending on the day he was scheduled to return to duty. Instead, he was ordered to report to San Antonio, Texas, for discharge. After



returning to Midland, he went to work in the oil business, doing what he had trained for before the war. He worked as a geologist in the oil field for 48 years. The Drickey Queen Sand Field in New Mexico is named after him. The world changed for Paul on December 4, 1970, when he fell in love with and married Ramona Spurlock. Ramona had three children—Donna, Debra, and Dana—who all blended into the new family. Paul and Ramona loved to travel and took many interesting trips over the years. The close and happy family continued on though marred by the tragic deaths of Carol and Thomas in 1989, and Donna in 2004. Paul is survived by his wife, Ramona, and three daughters and their families, including 12 grandchildren and 13 great grandchildren—two of whom are serving in the U.S. Air Force.

HARLEY FREDERICK ERICKSON

The Alumni Association office received word that **Harley Erickson** (EE49) passed away on September 18, 2008. He had retired from Gulf States Utilities Company. Harley was an active alumnus. He attended his 50-year graduate reunion in 1999 and “enjoyed hanging out at Lake Conroe.” In a previous Hardrock class note, Harley said, “80th year on planet Earth, thanks to the good folks at M.D. Anderson Cancer Center in Houston. They keep me bouncing along and enjoying life with Vera, my mate of 56 years. Life is good!”

JAMES ROSS ENGLAND

Jim England (CE47), 85, died peacefully on February 25, 2010, in Rapid City. He was born in Mitchell while his family was working on a road construction job in the area. The family lived in Murdo for several years before

moving to Rapid City. As a young boy, Jim was active in scouting and attained Eagle Scout, earning more merit badges for this rank than any other scout at that time. Because of his rank, he was honored to be the flag bearer for a Mount Rushmore dedication ceremony attended by President Franklin Roosevelt. While in high school, he excelled in the debate club, was the 1942 Black Hills Area Singles Tennis Champion, and graduated with high honors. He married his high school sweetheart, Carol M. Harrington, in 1943. He spent 22 months in the U.S. Navy, during World War II, and was stationed in both Texas and Navy Pier in Chicago. He attended the School of Mines, graduating with a bachelor of science in civil engineering in 1947 and later earned a master's degree in general engineering in 1955. At heart, Jim was a businessman and even at an early age began his entrepreneurial career by renting “Big Little” books for \$0.01 per day while in grade school and later bottling and selling root beer to employees on his father's job sites. Jim spent his entire working career in his family business (now J. F. England's Sons, Inc.), first as secretary/treasurer, then president, and in later years as chairman of the board. He went to work almost daily until the last few weeks of his life. Jim was involved in Noon Optimists, an active member of the Boys Club Board of Directors since 1974, a founding member of CBMC in Rapid City, and a devoted member of First United Methodist Church. Jim met his wife, Carol, at the church, and they had their first “date” at a church gathering after he noticed a remarkable young girl in the choir. They were married, their children were baptized and confirmed, they led inspirational Bible studies, and

they served on several committees in this church. Jim will be remembered as a loving husband, father, grandfather, and great-grandfather. Jim is survived by his son, David, and family, including children and grandchildren, and many family members. He was preceded in death by his wife, Carol.

JAMES T. FULLER

Jim Fuller (ME63) died on July 8, 2009, of a rare form of dementia (primary progressive aphasia). It was a long journey. He is buried at the National Cemetery in Nashville. Jim was a Naval navigator. Much of his career was international. He is survived by his wife, Judith, children, Kathryn and Matthew, and one granddaughter, Hannah.

DEAN WILLIAM GREENWALT

Our beloved brother, uncle, and cousin, **Dean Greenwalt** (EE64), lost his life on September 26, 2009, when he was struck by a hit-and-run driver in a crosswalk near his home in Woodland Hills, California. Dean was born in Rapid City. He was raised on the family farm located near Owanka. He was very interested in genealogy and proud that the farm was where his mother was also raised, having been purchased by his maternal grandfather in 1918. He graduated from New Underwood High School in 1960 and from the School of Mines in 1964. During college, he was in the Reserve Officer Training Corps. After graduation, he worked for McDonnell Douglas in St. Louis, Missouri. Dean joined the U.S. Army and was stationed in Germany for two years as a second lieutenant. After his discharge, he was employed by Hughes Aircraft Company in Los Angeles, California, in the aerospace industry where he worked on aircraft and missile

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guidance systems. His projects included the Patriot and Cruise Missile systems. Dean retired at age 55 to pursue his many interests. He will be greatly missed by his family, friends, and neighbors. Dean was a kind, honest, gentle man who always had time to lend a helping hand. His engaging smile, intellect, and love of good conversation were some of his most endearing qualities. His neighbors reflected that "Dean was the heart of the neighborhood" and that "his spirit will live on forever here." In addition to his many friends and wonderful neighbors, he is survived by his brother and sister and their families.

DALE WILLARD GRUEBELE

Dale Gruebele (EE61), 73, of Bloomington passed into the Lord's care on February 11, 2010, after a sudden illness. Dale was a beloved husband, dad, papa, brother, and uncle. He is survived by his loving wife, Naida; children, Mike, Suzanne, Christine, and their families, including six much loved grandchildren; and many extended family members.

DONALD ERNEST HALTER

Don Halter (MetE42) passed away on July 23, 2009, just days after his 91st birthday, according to an email from his daughter, Myrna Wheeler, of Springfield, Oregon. She shared that while "sorting through his belongings, [she] found his 2002-03 alumni directory. It was interesting to see all the names he had circled, and the book brought back fond memories of annual summer trips to South Dakota to visit relatives, friends, Mt. Rushmore, and the School of Mines campus. We loved the display of rocks under the black light, glowing purple, green, and orange! When my dad (sort of) figured out how to use a

computer (in his early 80s) he began to receive Hardrock E-News via e-mail. He read most of the issues, although he was sometimes a little quick to hit the delete button. Regardless, he remained a loyal alumnus to the end."

DONALD JAMES HANLEY

Don Hanley (CE49), 86, died December 17, 2009, at Huron SunQuest Healthcare Center. He enlisted in the U.S. Air Force in 1942 and was a member of the Air Force Marching Band. After the war, he graduated from the School of Mines with a degree in civil engineering and was employed by the Bureau of Reclamation. Survivors include his wife, Bernadine; three sons, James, Michael, and Stephen; and seven grandchildren.

JASON MICHAEL HAVEY

Jason Havey (CSc03) passed away recently. Jason was enrolled in the South Dakota State University West River nursing program. He received his first degree from the U.S. Military Academy in civil engineering in 1997. He also received a M.S. in computer science from the School of Mines in 2007. Sincere wishes of condolences go to Jason's family members and classmates.

GERALD JOSEPH HOLST

Gerald (Jerry) Holst (MetE64), 66, passed on September 5, 2009, at St. Elizabeth's Health Care Center in Wabasha, Minnesota. Jerry was born in Pierre to Phyllis and Joseph Harty, and he was later adopted by his stepfather, Spencer Holst. Jerry married Connie Bradfield in 1963 in Kadoka. They lived in Rapid City, where he finished his last year of college at the School of Mines, earning a degree in metallurgical engineering. He moved to

Rochester and worked at IBM in manufacturing engineering. In 1965, he started serving his military commitment. He trained at Fort Belvoir, Virginia, and Fort Carson, Colorado, before joining Company B, 8th Engineer Battalion, 1st Cavalry Division (Airmbl) in Vietnam in 1966. He returned to IBM Rochester in 1967, where he worked until retirement. He is survived by his wife, Connie; two daughters, Darcie and Daphne; four grandchildren, Cheyenne, Garret, Ethan, and Gabe; and other extended-family members. His body was donated to Mayo Clinic, per his wishes.

MICHAEL DALE HOHN

Mike Hohn (Geol72) passed away on March 14, 2010, at Memorial Hermann Hospital in The Woodlands, Texas, with pneumonia and other complications from multiple sclerosis (MS). He was 61 years old. He was born in 1948 in Rapid City and attended Annie Talent Grade School, South Junior High School, and Central High School, where he graduated in 1967. He attended the School of Mines and graduated with a bachelor's of science in geology. While in college, he restarted the South Dakota State Student Federation, played tennis on the college team, and helped rewrite the school's constitution and a Student Code of Rights and Responsibilities. After graduation, he attended ROTC training in Fort Lewis, Washington. He held various sales jobs until 1978, when he started a partnership named Spectrum Management Services (SMS), a management consulting firm. As the first computers emerged in the workplace, SMS entered the computer industry as an OEM and program developer. They joined with National College of Rapid



City and started to market computers and software to business schools. As the industry evolved and the company changed, Mike negotiated its sale to two different public companies. His last employer was United Education and Software as chief information officer for their internal and external analysis. He resigned in 1989 because of the onset of MS. He married Diane Hanson in 1973 in Watertown. They moved to Cedar Rapids, Iowa, where their oldest daughter, Erika, was born. In 1976, they moved to Sioux Falls. While there, they had two more children, Jeremy and Vanessa. They divorced in 1996, and Mike moved to The Woodlands, Texas, in April of 2009, where he lived at an assisted living facility near his son and his family. From his retirement date until it was no longer possible, Mike provided a variety of volunteer services. He became involved with environmental issues commencing in 1987, actively participating in the South Dakota Recycling Coalition and the South Dakota Resources Coalition. He was appointed to the Hazardous Waste Task Force by Governor George Mickelson and to the Committee of Abandoned Mines by Governor Walter Dale Miller. He testified before the U.S. House of Representatives Interior Committee on Mining Reform. After retirement, he wrote on various subjects, visited with friends, traveled to the World Series and to see family, and attended sporting events and concerts. He loved spending time with kids and grandkids. He is survived by his daughter, Erika; his son, Jeremy; his daughter, Vanessa; their families, including many grandchildren; and his mother, sisters, a brother, and many beloved nieces, nephews,

and extended-family members.

WALTER BELL HOSHAW

The Alumni Association received notice from **Marvin Hoshaw** (CE66). "It is with sadness that I note the death of my brother **Walter Bell Hoshaw** (Math67). He had lived many years with extreme diabetic conditions. His death on April 5, 2009, in Omaha, Nebraska, was due to organ failure."

LOWELL ARTHUR JOBE

Lowell Jobe (ChE38), 95, passed away, surrounded by his loving family, at home in Idaho Falls, Idaho, on January 27, 2010. Lowell was born in 1914 in Lead. He received most of his schooling in the Lead Public Schools. After working for the Homestake Mining Company for two years, he enrolled in chemical engineering at the School of Mines, receiving his degree in 1938, followed by a M.S. degree in 1939 from the University of Iowa. He married Margaret McGill in Deadwood in 1942. They have a daughter, Donna Jean, and a son, David Arthur. They were later divorced. In 1985, he married Lorraine H. Lucier atop Signal Mountain in Grand Teton National Park. His professional career started in 1939 as chief chemist and process design engineer with Graver Tank & Manufacturing Company's water treatment department in Chicago, Illinois. In 1947, he and his family moved to Moscow, Idaho, where he was an associate professor of chemical engineering for the University of Idaho. He introduced courses in industrial water and waste treatment, automatic process control, and the first graduate course in nuclear chemical engineering. He directed research on rare earth separations from Idaho monazite sands and

spent two summers each at the Oak Ridge National Laboratory and Hanford nuclear plant. In 1960, he and his family moved to Idaho Falls, where he was employed as a senior process control engineer at the National Reactor Testing Station (now the INL). While working at the site, he was awarded two patents. He represented the United States at a 1963 Organization for Economic Co-operation and Development conference in Paris, France, where he spoke on instrumentation of nuclear fuel reprocessing plants. He retired from the INL in 1980 to teach at the Eastern Idaho Vocational Technical School (now EITC), where he developed a new process technology program. He retired again in 1985. He was a life member of the American Institute of Chemical Engineers and the International Society for Measurement and Control and served twice as president of the local Instrument Society of America. He was a member of the American Nuclear Society and Coalition 21. Lowell had a great zest for life and a love of sharing his joys with others. Music has been his major avocation, playing violin in orchestras since 1926. He played violin in the Idaho Falls Symphony for more than 45 years. He served twice as president of the Idaho Falls Symphony Society. In 2003, the symphony created the Lowell Jobe Artistic Award to be given each year to someone who gives their time, talent, and treasure in support of the symphony. Lowell received the first award. Lowell loved ballroom dancing and traveling with his wife, Lorraine. He loved spending time with his family, enjoying many family barbecues, dinners, and holiday celebrations. His other interests included hunting, fishing, rafting, cross-country

MEMORIALS

skiing, and photography. He was a member of St. Paul's United Methodist Church, Eagle Rock Lodge No. 19 AF & AM, Scottish Rite, and the El Korah Shrine. He is survived by his wife, Lorraine; daughter, Donna Jean; son, David; stepdaughters, Betty and Diane; and their families, including five grandchildren, beloved great-grandchildren, and a great-great-grandchild.

ROBERT ANSEL KELLAR

Robert Kellar (ChE40) was born in Chicago, Illinois, in 1918 and passed away on October 20, 2009, at age 91. After working for the DuPont Company, he left to volunteer in the Army Air Corps, where he served during World War II in the Pacific as a navigator in an Air-Sea Rescue Squadron. He was discharged with the rank of captain and returned to work at the DuPont Company. After retiring from DuPont at age 65, he moved to Sun City, Arizona, where he established his own company, working as a business consultant. After 46 years of marriage, his wife, Jean Amick, died of a heart attack. From the marriage, he gained six grandchildren and six great-grandchildren. Robert was a published author; a world traveler, visiting more than 30 countries; a person who loved nature, especially the Black Hills of South Dakota; and an avid sports fan. He was still waiting for a World Series appearance by the Chicago Cubs.

DONALD EUGENE KLINE

Donald Kline (CE50), 92, was born in 1917 and died on December 10, 2009. He was last known to have been living in Novato, California. He retired from the DOT in California.

CRAIG KENNETH KNOCK

Craig Knock (MetE74), 58, Rapid City, died Sunday, December 27, 2009, at Rapid City Regional Hospital. Survivors include his wife, Michele Knock, and his son, Joshua Knock, both of Rapid City; one brother; and three sisters.

ROBERT WYLIE LANE

Robert Lane (M.S. Geol51), 88, of Alpharetta, Georgia, died in 2006 at home, the Alumni Association office was recently informed. He was born in St. Louis, Missouri, and spent his youth in Woodriver, Illinois, where he was employed by the Standard Oil Company before enlisting in the U.S. Navy as co-pilot of a B-24 bomber from August 1943 to March 1944. He was awarded two gold stars and the Distinguished Flying Cross for outstanding airmanship and meritorious achievement. Following his military service, he attended the University of Illinois, graduating in 1949 with a bachelor's of science degree in geology. He received his master's of science degree from the School of Mines in 1951. He was a geologist for the Continental Oil Company and the Champlain Oil Company in Casper, Wyoming, from 1951-67. In 1967, he began a new career as a college instructor at Florida Junior College in Jacksonville, Florida, where he taught geology, meteorology, and physical science. He retired in March 1984 and moved to the Atlanta area in 1987. He was an amateur radio operator and enjoyed talking to his friends in Wyoming on his radio. He is survived by his loving wife, Ophelia; daughter, Nathalie, and her family; and son, Wylie, and his family.

WILLIAM CALVIN MILLER

The Alumni Association was notified by wife Carlain that **Bill Miller** (EE51) died May 21, 2009, after being ill for five years.

LYLE KENNETH MUDGE

Lyle Mudge (ChE59), 72, Rapid City, passed away February 3, 2010, at Rapid City Regional Hospital. Lyle was born in 1937 in Selby and was the youngest of six children. Lyle graduated from Selby High School in 1955, where he excelled in academics and was a talented athlete. Lyle married Lois Walter in 1957 at Doland. To this union two sons were born. They were the joy of his life, and he always encouraged them to do their best. They always made him feel proud. Upon graduation from the School of Mines, he went to work for General Electric in Richland, Washington. In 1964, he and his family moved to Seattle, Washington, where he attended the University of Washington and earned a Ph.D. in chemical engineering. He then returned to Richland and was a research engineer for Battelle NW, where he was honored as Engineer of the Year and also received the Research and Development Award and was honored in Chicago at the Museum of Science and Industry. Lyle also holds numerous patents. In 1988, Lyle took disability from work, as multiple sclerosis made it difficult for him to continue. In 2002, Lyle and his wife moved to South Dakota to be closer to family. He enjoyed having his sister, Mary, and niece, Darcie Decker, spend time with him. Grateful for having shared his life are his wife of 52 years, Lois; his son, Ret. Lt. Col. Thomas Mudge; and his family, including Lyle and Lois' four grandchildren. Lyle was preceded in death by his son, Kenneth, whose death he often referred to as the saddest day of



his life. Ken spent a lot of time with his dad and helped him with his disability.

EVERETTE FRANCIS ROBERTS

The Alumni Association office recently received notice from a family member that **Everette Roberts** (CE41) has passed away. He retired from Pullman, Inc. in June 1978 and then began a private consulting business in Pittsburgh, Pennsylvania. He and his wife, Olga, had five children—Robert, Donald, Nancy, Susan, and Paul.

DAVID JOHN ROSS

David Ross (CE58) passed away on July 9, 2009. David's wife, Betty, sent in the notification. They have two daughters, Sheryl and Catherine. Dave retired from the Federal Highway Administration in Oklahoma in the mid 1990s.

SETH CLARENCE SCHAEFER

Seth Schaefer (MetE47), 86, of Albany, Oregon, passed away on September 2, 2009, at the Mennonite Home. He was born in Tripp in 1923. Seth graduated from high school as valedictorian. After graduation, he attended the School of Mines, and three years into his education, he enlisted in the U.S. Navy in 1944. He served as an electronic technician's mate third class until his discharge in 1946. Seth returned to the School of Mines to earn his bachelor's degree. He worked in research for 14 years in the metallurgy industry. In 1961, Seth returned to education, earning his master's degree from the University of Missouri at Rolla. In 1963, he moved to Albany, to work as a metallurgical engineer for the Bureau of Mines and retired in 1986. Seth again returned to his education and received his post bachelor's degree in history and

anthropology from Oregon State University. He enjoyed reading and was a member of Immanuel Lutheran Church, American Legion Post 10, and the Metallurgical Society.

JOSEPH STEPON

The wife of **Joseph Stepon** (ME58), Marilyn Stepon, advised the Alumni Association that Joe passed away June 30, 2009. He had been fighting amyloidosis for more than three years. They have two daughters, Cindy and Janna.

RICHARD LOUIS TAYLOR

Dick Taylor (CE43) 88, died November 12, 2009, at his home surrounded by his family. He was born in Valentine, Nebraska, and the family moved from Harrington to Rapid City shortly after Richard was born. He graduated from high school in Rapid City and received a degree in civil engineering from the School of Mines in 1943, when Richard married Pearl Sanders. They briefly lived in Seattle, Washington, during World War II while Richard worked for Boeing. They returned to the Black Hills, where they ranched in partnership with Richard's father and brother. Richard was very active in the community for more than 50 years. He was director for the Pennington County district for the South Dakota Stockgrowers Association (SDSGA) for 26 years, president of the board of governors to administer the SDSGA scholarship fund to the Rapid City Boys Club, chairman of the SDSGA Land Use Committee, and the associations representative on the National Cattleman's Association Public Lands Committee. He also served as the chairman of the South Dakota Public Lands Council for several years. Richard was the past director of the Black Hills Exposition and Central States Fair

and director/president of the Black Hills Hereford Breeder's Association for many years. He was the past director/chairman of the Western Junior Livestock Show and the Pennington County Extension Board and local school chairman for 15 years and a 4-H leader for more than 25 years. He was also the past president of the Pennington County 4-H Leaders Association. Richard and Pearl operated the Golden Rule Hereford Ranch in the Rapid Valley, Deerfield, and Pactola areas, before retiring to the Pactola ranch. From the mid 1950s to the mid 1970s, Richard called foursquare and round dance clubs throughout the Black Hills and taught classes in both types of dancing. In 1995, Richard and Pearl were recipients of the Rapid City Chamber of Commerce "Aggie Award" for their service to agriculture in South Dakota. He was also awarded the Tom Diddier Pioneer Award in 2005. The Taylors' dedication and involvement in SDSGA, the Black Hills Stock Show, Central States Fair, and other community committees rightfully earned them a spot in the 2005 Black Hills Stock Show Hall of Fame. Richard was an avid hunter and fisherman and enjoyed spending time with his family and friends, especially his great-grandchildren. Survivors include his wife, Pearl, of 66 years; and three daughters, Pamela, Patricia, and Susan, and their families, including nine grandchildren and 17 great-grandchildren.

GERALD EUGENE TANGER

Dr. **G.E. "Jerry" Tanger** (Phys50) passed away on December 15, 2009, at Bethany House, in

Memorials continued on p. 78



In a recent campaign, School of Mines employees donated \$22,195.78 to the United Way of the Black Hills. The university contributes annually to the United Way in support of its vision to build a stronger America by mobilizing communities to improve people's lives.



Nearly 400 ghosts, ghouls, and goblins attended "Night at the Museum" to gather candy and fun educational information from costumed Museum of Geology staff.

The School of Mines is a partner in the upcoming University Center, a 59,000-square-foot building that will include 20 classrooms, seminar and conference rooms, a biology laboratory, a computer lab, an auditorium, gathering spaces for students to work in small groups, a bookstore, and a testing center.



Hundreds of people lined the streets of downtown Rapid City for the annual M-Day Parade, which boasted nearly 50 floats.

The School of Mines welcomed the Student Council from South Canyon Lake Elementary to campus for the ribbon cutting of the Black Hills Power Renewable Energy Facility.



Area children enjoyed holiday festivities, including a story from **President Robert A. Wharton**, during the Annual Children's Christmas Party.



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GENERAL SCHEDULE

WEDNESDAY - JULY 7 - DAY ONE

- 1 p.m. - 4 p.m. EARLY REGISTRATION
- 2 p.m. - 4 p.m. ALUMNI BOD AND AVP MTG
- 5 p.m. - 7 p.m. ALUMNI BOD AND AVP RECEPTION

THURSDAY - JULY 8 - DAY TWO

- 8 a.m. - 4 p.m. REGISTRATION
- 9 a.m. - 10 p.m. GENERAL ALUMNI MTG
- 10 a.m. - 1 p.m. TUNNEL ACTIVITY
- 1 p.m. - 4 p.m. FOUNDATION ANNUAL MTG
- 5 p.m. - 8 p.m. ALL CLASS SOCIAL

FRIDAY - JULY 9 - DAY THREE

- 8 a.m. - 4 p.m. REGISTRATION
- 7 a.m. - 11 a.m. HARDROCK GOLF CLASSIC
- 8 a.m. - Noon CAMPUS OPEN HOUSES
- Noon - 3 p.m. FAMILY PICNIC
- 3 p.m. - 5 p.m. UNIT REUNIONS
- 3 p.m. - 5 p.m. BUSINESS OPEN HOUSES
- Evening FRATERNITY/SORORITY
/NON-GREEK BANQUETS AND DANCE

SATURDAY - JULY 10 - DAY FOUR

- 7 a.m. - 9 a.m. PANCAKE BREAKFAST
- 9 a.m. - 11 a.m. M-HILL CLIMB
- 11 a.m. - Noon REUNION PLAQUE
- Noon - 4 p.m. CLASS LUNCHEONS*
- 6 p.m. - 11 p.m. REUNION GALA BANQUET

SUNDAY - JULY 11 - DAY FIVE

- 8 a.m. - 9 a.m. SUNRISE SERVICE
- 10 a.m. - 4 p.m. 125th ANNIVERSARY HIKE

Pre-Registration, Lodging, and General Information
Online <<http://alumni.sdsmt.edu/reunion>>

*CLASS LUNCHEONS

SATURDAY - July 10 - Noon to 4 p.m.

Sign up for your Class Luncheon during registration at the Reunion in the Surbeck Center. The cost of the luncheon will be collected at the luncheon.

1940 - 1945 @ Surbeck Center McKeel Room
Host: **Tom Malone** (GenE40)

1946 - 1954 @ Journey Museum
Hosts: **Grove Rathbun** (MinE52) and **Bob Schwarz** (ME52)

1955 - 1961 @ Arrowhead Country Club
Hosts: **Paul Gnirk** (MinE59) and **Jay Brink** (EE56)

1962 - 1969 @ Thirsty's Bar & Grill
Hosts: **Larry Simonson** (EE69) and **Bill Craig** (ME65)

1970 - 1979 @ Radisson Hotel Ballroom
Host: **Linda Rausch** (ChE75) and **Anita Freeman** (EE76)

1980 - 1989 @ Watiki Water Resort Pool Room
Hosts: **Jon Kellar** (MetE84) and **Tim Vottero** (Chem84)

1990 - 1999 @ Sioux Park Shelter
Hosts: **Mark** (CSc92) and **Christie Ingalls** (CE92)

2000 - 2010 @ Dublin's Square
Hosts: **Melanie Jeppesen** (IS09) and **Colter Burleson** (ME10)

GENERAL INFORMATION

Your Reunion badge is required to admit you to reunion sponsored events including the Tunnel Activity, All Class Social, Family Picnic, Pancake Breakfast, and Reunion Gala Banquet. Please wear your badge to identify yourself as a registered participant to all events. Graduates with a gold ribbon on their badges graduated in 1960 or before. Heart stamps on badges identify minors under 21.

Reunion 2010 Gala Banquet

Saturday, July 10, 6 p.m.
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Calendar of Events

Visit the online calendar for details:

<<http://calendar.sdsmt.edu>>

For details about K-12 events:

<<http://sdmines.sdsmt.edu/SDTechK-12>>

For details about athletic events:

<www.gorockers.com>

For details about adult and professional educational opportunities:

<<http://sdmines.sdsmt.edu/learn>>

Memorials continued from p. 73

GERALD EUGENE TANGER (continued)

Auburn, Alabama, after a brief illness. Survivors include a sister; two daughters, Sandra and Selia; two sons, Charles and Kevin; four grandchildren; and one great-grandchild. He graduated from Huron High School in 1943. He served in the Army and was stationed in the Philippines during World War II, obtaining the rank of Technical Sergeant Grade 4. After the war, he attended the School of Mines and received a B.S. degree in physics. Next, he received his masters in mechanical engineering from Brown University in Providence, Rhode Island, while also teaching night classes at the Rhode Island School of Design. His first university teaching assignment was at the University of Mississippi before he obtained his Ph.D. in mechanical engineering from Oklahoma State University. Dr. Tanger taught in the mechanical engineering department of Auburn University beginning in 1958 before retiring in 1975. Afterward, he devoted his time to running his real estate business, Tanger Rentals.



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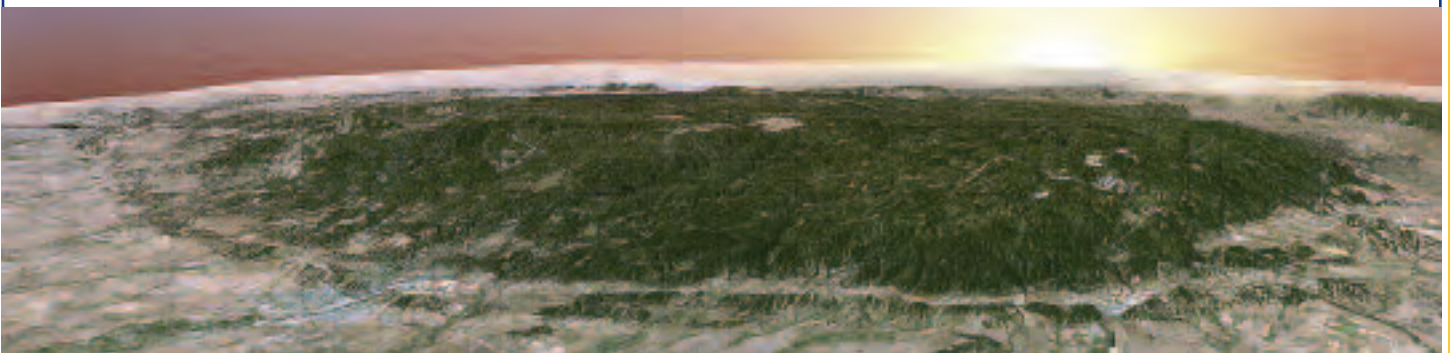
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LandSat 7 Image of the Black Hills



South Dakota School of Mines and Technology Alumni Association

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FUTURE PUBLICATION OF THE HARDROCK

On February 13, 2010, at the quarterly meeting of the Board of Directors of the Alumni Association, Executive Vice President Dr. Paul Gnirk proposed that, beginning in 2011, the Hardrock be published on-line and that printed copies be mailed only to the lifetime contributors {250 alumni} and to those alumni who have made financial contributions to the Alumni Association and the Foundation during the past fiscal year {2,500 alumni}. By resolution of the Board, it was agreed that a final decision on the proposal will be made after the Reunion in July 2010.

As explained to the Board by Dr. Gnirk, the basis for his proposal was two-fold; viz, {1} the electronic age in which on-line documents are rapidly replacing printed documents transmitted by the postal system; and {2} the cost of printing and mailing the Hardrock to more than 12,000 alumni, of which only some 1,500 contribute financially to the operation of the Association. Exclusive of staff time for preparation of the magazine, the printing and postage expense for two editions of the Hardrock each year is in excess of \$40,000. If only 3,000 copies of each edition are printed and mailed, these costs can be reduced by at least 50%.

Assuming that the Board approves the proposal at its April meeting, this action as a matter of policy, together with its rationale and implementation, would be explained to the alumni in attendance at the General Meeting of the Alumni at the Reunion on July 8, 2010. All comments will be welcome and taken into consideration by the Board when making the final decision.

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Two major construction projects are underway to continue to meet these needs. All university students will have the opportunity to utilize modern instructional and research laboratory facilities and other spaces that are being added to the Chemical and Biological Engineering/Chemistry building, while the Paleontology Research Laboratory will provide proper storage and research space for



Chemical and Biological Engineering/Chemistry building

faculty and students to study the university's world-class collection. These buildings, combined with other recent facility updates, create a safer and higher-quality environment for students to live and learn. They advance the School of Mines' goal of developing as the college of choice for those pursuing science and engineering.



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